



# ROUTE CONCEPT REPORT



## ROUTE 1 CORRIDOR

**01-MEN-1-KP 0.0/169.9 (PM 0.0/105.6)**

All information in this Route Concept Report is subject to change as conditions change and new information is obtained.

I approve this Route Concept Report as an analysis and conceptual long-range guide for Caltrans, our Regional Transportation Planning Partners, local entities and the public.

**Approval Recommended:**

  
10/15/03  
**CHARLIE FIELDER** Date  
Deputy District Director  
Program/Project Management

**Approval Recommended:**

  
10/20/03  
**CHERYL S. WILLIS** Date  
Deputy District Director  
Planning

**Approved:**

  
10/28/03  
**RICK KNAPP** Date  
District Director  
District 1

**SEPTEMBER 2003**

**ROUTE 1 RCR**  
**ROUTE CONCEPT REPORT**

**Statement of Planning Intent**

The Route Concept Report (RCR) is a planning document which describes the Department's conceptual improvement options for a given transportation route or corridor. Considering reasonable financial constraints and projected travel demand over a 20-year planning period, the RCR considers transportation facility needs for each route or corridor. The RCR is a tool for implementing interregional and statewide continuity of the State's transportation network, and will be updated as needed as conditions change, or new information is obtained.

**Purpose of the Route Concept Report**

The objective of the RCR is to have local, regional, and state consensus on route or corridor concepts, improvement goals, and strategies. This document provides concept information only and does not determine policy nor establish a course of action. Route Concept Reports are prepared by District staff in cooperation with local and regional agencies.

**Assumptions**

The following assumptions form the basis for the development of Route Concept Reports:

1. The relative importance of State highways in the District is generally based on functional classification. In general, higher priority is given to major improvements on principal arterial routes as compared to minor arterials and collectors.
2. State highways with improvement concepts must have realistic concept levels of service. Concept levels of service are not established on State highways which will only be maintained (since improvements would not be made to address level of service concerns).
3. Level of service calculations are based on the 2000 Highway Capacity Manual (See Appendix "A").
4. Determinations of future levels of service for State highways in District 1 are based in part upon Statewide and Regional forecasts of State highway travel developed by Caltrans.
5. Route concepts generally apply to an entire route or corridor, unless there are overriding considerations (e.g., a major change in function along the route or feasibility concerns).
6. Major projects will be developed to meet design standards acceptable to the Federal Highway Administration in order to receive Federal funding for projects. Otherwise, a "design exception" must be secured during the project development process.
7. Safety projects will be pursued on an on-going basis in order to be responsive to safety concerns as they are identified.
8. No planned or programmed improvements were assumed to be complete in analyzing present and future operating conditions. The Route Concept Report details programmed improvements in the 2000 State Transportation Improvement Program.
9. Environmental documents are not required for Route Concept Reports. Individual improvement projects identified in Route Concept Reports will follow established environmental processes when development is proposed, as required by law.

# ROUTE CONCEPT REPORT

## ROUTE 1

01-MEN-1-KP 0.0/169.9 (PM 0.0/105.6)

### I. ROUTE CONCEPT AND RATIONALE

#### FACILITY CONCEPT

**Route 1 should remain a 2-lane highway, except in the greater Fort Bragg area, where capacity improvements should be considered as necessary.**

Improvement to 4-lanes throughout the greater Fort Bragg area may be necessary to maintain stable flow throughout the 20-year planning period. Most of this traffic is generated locally, and most of the congestion impacts are to local and regional traffic. Therefore, it is anticipated that any necessary improvements would be initiated by Mendocino Council of Governments, Mendocino County, or the City of Fort Bragg rather than Caltrans.

Route 1 serves as the main street for a number of small coastal communities, and the two incorporated cities on the Mendocino Coast (Point Arena and Fort Bragg). It carries high volumes of recreational and tourist traffic during the summer months.

The Coastal Zone Act of 1976 requires that "...Route 1 in the rural areas of the Coastal Zone remain a scenic two lane road."<sup>1</sup> Route 1 from the Sonoma/Mendocino County line to north of Westport is within the Coastal Zone.

#### LEVEL OF SERVICE CONCEPT

**The recommended concept LOS for Route 1 is "E", except through the City of Fort Bragg, where no concept level of service has been established.**

The Route is expected to operate at or above the established concept level of service through the year 2020.

#### ROUTE CONCEPT FUNCTION

This Route Concept should serve as a guide for long range planning for Route 1. It will protect the state's investment in this Route, while recognizing financial constraints, which will not allow the programming of extensive improvements for all highways.

---

<sup>1</sup> 1976 Coastal Zone Act, Section 30254.

## **II. ROUTE MANAGEMENT STRATEGIES**

### **REHABILITATION STRATEGY**

Caltrans Design Standards for resurfacing, restoration, and rehabilitation (3-R) are based on minimum existing width and annual average daily traffic (AADT). These standards permit rehabilitation at present width, as long as the traveled way and usable shoulder width meets minimum requirements that range from 7.2 meters to 9.6 meters (24' to 32'), depending on traffic volumes. Standards dictate that sections having overall widths less than the minimum standards must be widened to the desirable standards, which range from 7.2 meters to 12.0 meters (24' to 40'), also depending on traffic volumes.

Less than half of Route 1 meets the minimum width criteria. The remaining segments would need to be widened to the desirable standards in conjunction with rehabilitation work. However, the widening of these segments that do not meet "3-R" standards may not be prudent for the following reasons:

1. Costs to widen narrow sections would be inordinately high because of rugged terrain.
2. Existing vertical and horizontal alignment does not meet current standards. Widening without improving alignment could result in collision concerns. If the pavement is wide, the general expectation is that highway alignment will be good (e.g., no short radius curves and good sight distance).
3. Environmental impacts could be significant. Widening could impact biological, historic or archeological resources. Further, the scenic character of the highway could be damaged.
4. Widening Route 1 to beyond 9.6 meters (32'), in rural areas would be inconsistent with the Coastal Act and the Local Coastal Plan.<sup>2</sup>

Bridge railing treatments are particularly important on Route 1 due to the scenic beauty of the landscape and Department negotiations with the California Coastal Commission. Design and construction of railings and retaining wall treatments must incorporate designs providing a maximum amount of visibility through the structure to the landscape. A few examples of suggested railing treatments are shown in Exhibit 1.

The California Coastal Commission and the Coastal Conservancy are currently studying the possibility of developing a coastal trail from Oregon to Mexico with preferred routing along the coast to afford visitors views of some of the most majestic vistas in California. Reconstruction and rehabilitation strategies involving Route 1 are to incorporate provisions for accommodating the coastal trail where feasible.

---

<sup>2</sup> Mendocino County General Plan, Coastal Element, adopted August 17, 1983, p.107, section 3.8-6.

**ROUTE 1 RCR**  
**EXHIBIT 1**  
**BRIDGE RAILING TREATMENTS**



ST-10



TYPE 80

**SAFETY AND OPERATIONAL IMPROVEMENT STRATEGY**

No segments of Route 1 have collision rates exceeding one and one-half times the statewide average based on similar facilities. However, **safety improvements at spot locations will be considered as necessary.**

Bridge replacement and storm damage projects will also be considered as necessary, and operational improvement projects will be considered on a limited basis. These projects, in addition to safety projects, should be constructed to appropriate State and/or Federal standards.

In the late 1980's, the Department barrier striped two-lane highways to comply with Federally mandated standards. This reduced the number of passing opportunities (and the level of service) on most two-lane State highways, including Route 1. It is anticipated that the effects of barrier striping effects can additionally be mitigated by the construction of additional "turnouts" on Route 1.

**COMMUNITY ENHANCEMENT STRATEGY**

Caltrans supports Community Enhancement opportunities and are open to working in partnership with Regional Transportation Planning partners in Counties, Cities, and communities where Route 1 is the Main Street of the community (e.g. Gualala) to achieve livable community goals. Community Enhancements, including the development of traffic calming improvements to reduce traffic speed and noise, and development of bicycle/pedestrian facilities to increase opportunities for non-motorized trips can improve the quality of life in our communities. The recreational opportunities along the Mendocino Coast have been enjoyed for generations and the revitalization efforts of the towns and communities along Route 1 will be considered in the design of facilities and reinforced by context sensitive transportation decisions resulting in pedestrian friendly, small town

## **ROUTE 1 RCR**

environments desired by the residents. Safety will continue to be our primary concern in the consideration of the entire transportation network, of which Community Enhancements are a part.

### **GOODS MOVEMENT STRATEGY**

Truck traffic on Route 1 is less than 6% of Annual Average Daily Traffic (AADT). Where traffic volumes are relatively low, truck traffic increases to as much as 8.7% of AADT. Consistent with the relatively low truck traffic volumes on this Route, no goods movement improvements are planned for Route 1 at this time.

**Table I  
Truck Volumes on Route 1**

Segment	KP (PM)	Vehicle AADT Total	Truck AADT Total	Truck % of total vehicles	Number of 5-axle trucks
Sonoma/Mendocino County line to junction Route 128	KP 0.0/64.9 (PM 0.0/40.3)	1950	120	6.2	26
Junction Route 128 to Little River	KP 64.9/77.2 (PM 40.3/48)	3350	167	4.99	44
Little River to south Fort Bragg City limit	KP 77.2/96.1 (PM 48/59.7)	19500	443	2.29	102
So. Fort Bragg City limits to no. Fort Bragg City limit	KP 96.1/100.4 (PM 59.7/62.4)	22100	486	2.2	139
No. Fort Bragg City Limits to Little Valley Road	KP 100.4/107.5 (PM 62.4/66.8)	11350	269	5.4	80
Little Valley Road to North Westport	KP 107.5/125 (PM 66.8/77.7)	600	52	8.67	16
North Westport to Junction Rte. 101 at Leggett	KP 125/169.9 (PM 77.7/105.6)	950	84	8.48	20

Route 1 serves Noyo Harbor in Fort Bragg, Point Arena, and Albion and provides access to commercial and sport fishing opportunities in these areas. The commercial transport of fish and fish products through this port provides for economic opportunities.

### **NON-MOTORIZED FACILITIES STRATEGY**

Route 1 is part of the Pacific Coast Bike Route. All of the Route has seasonally high bicycle traffic volumes during the summer months. The City of Fort Bragg has a combination of high volumes of both vehicular and pedestrian traffic.

The Mendocino Council of Governments, in their Regional Transportation Plan, Needs Section, notes that: "Improvement of State Route 1 to provide four foot shoulders for bicycle traffic is an unresolved issue in Mendocino County."<sup>3</sup> Department of Transportation staff will work with our transportation planning partners to identify and prioritize non-motorized needs on Route 1 and develop strategies to implement the improvements identified.

<sup>3</sup> Regional Transportation Plan, Mendocino County, 1994 Update, and Re-Adopted October 7, 1996 as the 1996 Regional Transportation Plan.

## ***ROUTE 1 RCR***

In 2002, the Department funded a study of the Pacific Coast Bike Route to perform bicycle counts and recreational vehicle counts in order to characterize non-motorized and recreational vehicles as a part of the overall traffic stream.

Department staff evaluated segments of the Pacific Coast Bike Route (portions of Route 101 and Route 1) using Bicycle Compatibility Index (BCI) methodology, in an effort to determine the “bicycle friendliness” of these highway segments. Based on concerns with both the methodology and the results, Bicycle Level of Service information is not included in this Route Concept Report. Department staff continues to investigate other possible methods of measuring bicycle level of service on the Pacific Coast Bike Route and the State Highway system in an effort to prioritize improvement locations.

### **CORRIDOR PRESERVATION STRATEGY**

It is anticipated that Route 1 will remain as it exists (primarily a 2-lane conventional highway). No substantial long-term right of way needs are anticipated.

## **III. ALTERNATIVE CONCEPTS CONSIDERED**

**No alternative concepts were considered for Route 1 in District 1.**

## **IV. ROUTE ANALYSIS**

### **DESCRIPTION**

In District 1, Route 1 begins at the Sonoma/Mendocino County line, and terminates at its junction with Route 101 at the community of Leggett. It generally follows the Mendocino coastline, traversing the low hills and coastal plain, before turning easterly to intersect with Route 101.

The Route is approximately 167 kilometers (103.5 miles) in length in District 1, and has a kilometer post description of MEN-1-0.0/169.9 (PM 0.0/105.6).

### **ROUTE PURPOSE**

Route 1 serves as Main Street for a number of small coastal communities and the two incorporated Cities on the Mendocino Coast, Point Arena and Fort Bragg. The City of Fort Bragg is the largest city and the primary commercial center on the Mendocino coast, with a population of approximately 6,400.<sup>4</sup>

Route 1 is functionally classified as a rural minor arterial. In addition to serving as the primary transportation link for cities and communities along the Mendocino Coast, the route is heavily traveled by tourists during the summer months and weekends. Recreational travel is anticipated to increase at 3% per year, un compounded, during the next 20 years.<sup>5</sup> Several State Parks and other day use or camping facilities are located along Route 1.

<sup>4</sup> January 2000 Department of Finance population estimate (E-1 2000).

<sup>5</sup> Mendocino County Coastal Element, p. 108

## **ROUTE 1 RCR**

These, combined with other unique lodging accommodations and access to scenic coastal resources and picturesque communities, contribute to the seasonally high volumes of recreational travel along Route 1. To enhance the experience of travelling Route 1 for future generations, scenic overlooks should be incorporated at locations with especially high quality visual characteristics.

### **ROUTE SEGMENTATION**

Route 1 is segmented as follows for System Planning purposes:

**TABLE 1  
ROUTE 1 SEGMENTATION**

<b>SEG #</b>	<b>MEN 1</b>		<b>DESCRIPTION</b>
	<b>KP</b>	<b>PM</b>	
1	0.0/64.9	0.0/40.3	Sonoma/Mendocino County line to junction Route 128
2	64.9/77.2	40.3/48.0	Junction Route 128 to Little River
3	77.2/96.1	48.0/59.7	Little River to south Fort Bragg City limit
4	96.1/100.4	59.7/62.4	So. Fort Bragg City limits to no. Fort Bragg City limit
5	100.4/107.5	62.4/66.8	No. Fort Bragg City Limits to Little Valley Road
6	107.5/125.0	66.8/77.7	Little Valley Road to North Westport
7	125.0/169.9	77.7/105.6	North Westport to Junction Rte. 101 at Leggett

### **LAND USE**

Land use adjacent to Route 1 is primarily open space and agricultural, interspersed with low-density rural residential development. Pockets of commercial and visitor serving commercial development are concentrated in the Cities of Fort Bragg and Point Arena, and the communities of Gualala, Anchor Bay, Manchester, Elk, Albion, Little River, Mendocino, Caspar, Cleone, and Westport. Since 1985, 93% of new residential development on Route 1 occurred between Fort Bragg and Gualala. <sup>6</sup>

Modest development is anticipated along Route 1, concentrated in existing communities. Coastal Plan land use restrictions combined with generally low countywide growth rates are likely to result in slow growth along the Mendocino Coast.

<sup>6</sup>Mendocino County LCP 5-year Review Development Report, May 1999, p. 16

## ROUTE 1 RCR

### EXISTING FACILITIES

Table II below summarizes existing facility characteristics for Route 1 in District 1.

**TABLE II  
EXISTING FACILITY CHARACTERISTICS  
ROUTE 1**

SEG #	MEN 1		DESCRIPTION	EXISTING FACILITY
	KP	PM		
1	0.0/64.9	0.0/40.3	Sonoma/Mendocino County line to junction Route 128	2-lane conventional
2	64.9/77.2	40.3/48.0	Junction Route 128 to Little River	2-lane conventional
3	77.2/96.1	48.0/59.7	Little River to south Fort Bragg City limit	2 & 4-lane conventional & expressway
4	96.1/100.4	59.7/62.4	So. Fort Bragg City limits to No. Fort Bragg City limit	2 & 4-lane conventional
5	100.4/107.5	62.4/66.8	No. Fort Bragg City limits to Little Valley Road	2-lane conventional
6	107.5/125.0	66.8/77.7	Little Valley Road to North Westport	2-lane conventional
7	125.0/169.9	77.7/105.6	North Westport to Junction Rte. 101 at Leggett	2-lane conventional

Functional Classification	Rural Minor Arterial
Eligible for Federal Funding	Yes
Freeway and Expressway System:	Part (from Jct. Rte. 128 to Rte. 101 at Leggett)
Eligible for Scenic Highway Designation:	Yes
Subsystem of Highways for Extra Legal Loads (SHELL)	No
Surface Transportation Assistance Act (STAA) Trucks Allowed:	No
Strategic Highway Network:	No
National Highway System:	No
Interregional Road System:	Yes
Interregional Transportation Strategic Plan	No
Public Airports Served:	Ocean Ridge, Little River
Rail Service:	California Western Railroad (The Skunk Train)
Intercity Bus Service:	MTA & Mendocino Stage
Interregional Bus Service:	MTA
Intersecting State Highway Routes:	101, 128, 211 (unconstructed)
Park and Ride Lots	None

### OPERATING CONDITIONS

Present and future operating conditions, including traffic volume ranges, level of service, and volume to capacity ratios for both existing and anticipated future conditions for Route 1 are shown on Map 1. Further information regarding specific operating and geometric conditions may be found in Caltrans source documents (e.g. the State Highway Inventory, the State Highway Log, and Traffic Volumes on California State Highways, etc.). In 1995, a Gualala Traffic Study commissioned by the Mendocino Council of Governments (MCOG) recommended that LOS "D" be the lowest acceptable level of service in the Gualala urban area. A State Route 1 Corridor Study was prepared in October 1994 finding that all rural roads in Mendocino County were operating at LOS "E" or better. <sup>6-page 17</sup>

## ***ROUTE 1 RCR***

### **PROGRAMMED IMPROVEMENTS**

No new facility projects on Route 1 are included in the 2000 State Transportation Improvement Program. Eleven projects totaling \$60.6 million are included in the State Highway Operation and Protection Plan (SHOPP). These projects include roadway reconstruction, bridge seismic rehabilitation (Noyo Bridge), and highway rehabilitation.

### **V. ENVIRONMENTAL CONSIDERATIONS**

Primary environmental considerations for Route 1 include:

- Soil stability concerns (particularly in gulches)
- Areas of archaeological sensitivity, including at Little River and north of Fort Bragg
- Sensitive coastal wetlands
- Protection of the coastal viewshed
- Critical salmon and steelhead habitat in coastal rivers and streams, including (but not limited to) the Garcia River, Elk Creek, the Navarro, Noyo and Ten Mile Rivers.
- Rare and threatened species (numerous locations along the Route).

### **VI. REGIONAL TRANSPORTATION PLANNING**

The Regional Transportation Plan (RTP) for Mendocino County<sup>7</sup> addresses transportation concerns on Route 1 as follows:

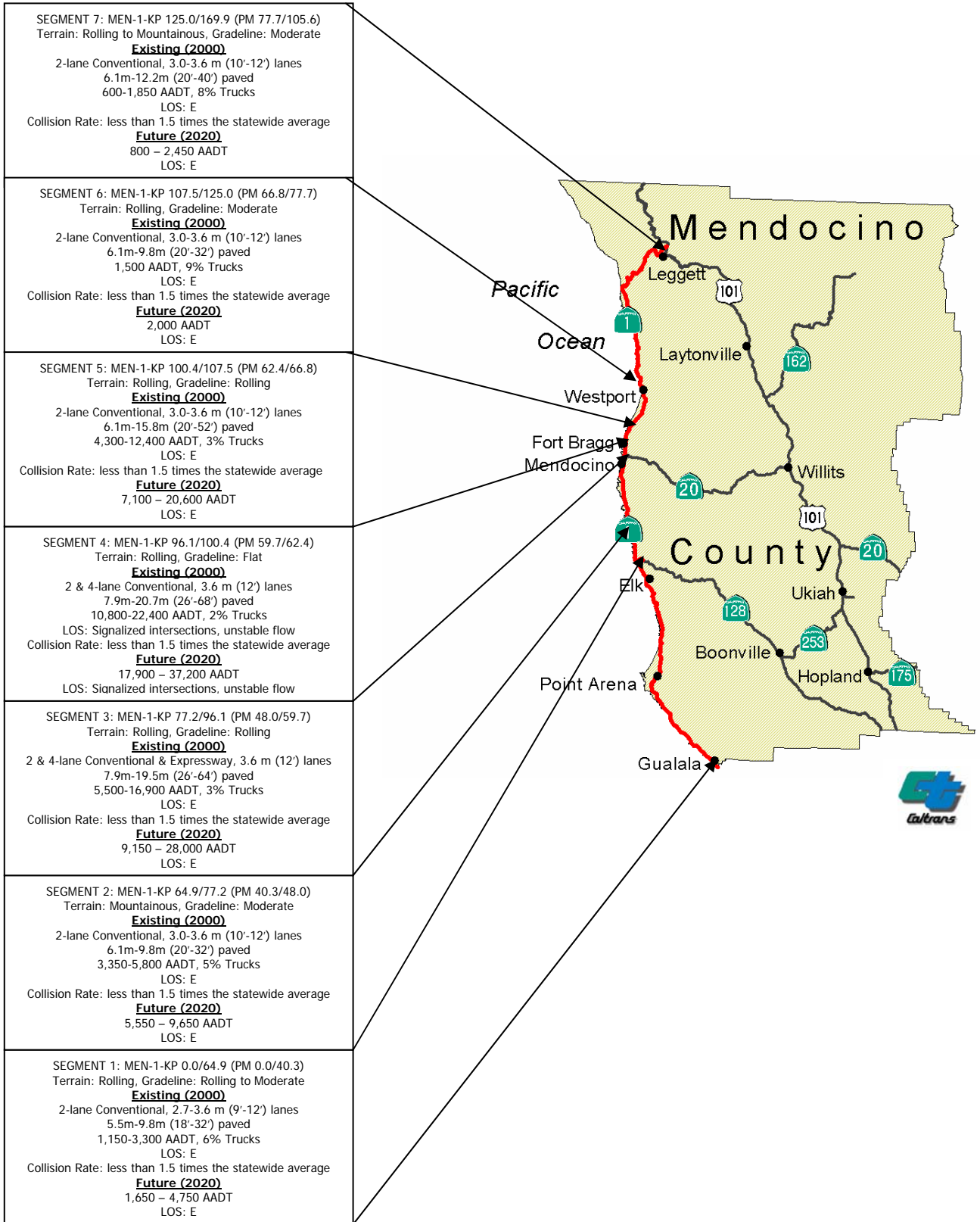
- The RTP recognizes the Noyo River Bridge as a “capacity constraint”, and discusses the possibility of constructing a new 4-lane structure, or developing a parallel crossing of the Noyo River. The Noyo River Bridge replacement is under construction to address the capacity concerns of Route 1 on the south end of Fort Bragg. The new bridge will be 4 lanes plus appropriate capacity for pedestrian, bike and ADA accessibility, and is anticipated to be completed in late 2005.
- The RTP calls for shoulder widening in conjunction with rehabilitation projects, where feasible along the Mendocino coast.
- Operational improvements in the Fort Bragg area are supported by the RTP. A major operational improvement project has been constructed in Fort Bragg since the RTP was written.
- The RTP notes that Mendocino County is managing Route 1 highway capacity along the coast, to assure that capacity improvements will not be needed.
- The RTP expresses a need for “Bikeway” improvements on Route 1 or a rescission of the “Pacific Coast Bikeway” designation for that Route.

---

<sup>7</sup> Mendocino County Regional Transportation Plan, Mendocino Council of Governments, 1996, page N-9

# ROUTE 1 RCR

## MAP 1 PRESENT AND FUTURE OPERATING CONDITIONS ROUTE 1



**Note: Most segments of Route 1 include grades of over 3% for distances of over 0.6 of a mile, and those portions of segments require directional analysis for capacity and level of service. Level of service for these specific grade portions may be overestimated in the above.**

## **ROUTE 1 RCR**

### **VII. AREAS OF CONCERN**

The following criteria are used to identify areas of concern on Route 1 based on an analysis of level of service and collision history:

1. A segment is considered to be a "level of service concern" if the concept level of service (LOS) will not be achieved under present or future traffic conditions, or the segment operates at capacity during peak hour.
2. A segment is considered to be a "safety concern" if the total collision rate for a five year period for that segment exceeds one and one-half times the Statewide average for similar facilities.

Segment 4 (KP 96.1/100.4 (PM 59.7/62.4)) in the City of Fort Bragg has both speed limits and signalized intersections. It currently operates at capacity (unstable flow) at peak hour. In addition to the signalized intersections, the two-lane bridge over the Noyo River acts as a capacity constraint. A project has been programmed which will replace the existing structure with a 4-lane structure meeting seismic standards.

Future level of service concerns are anticipated at Segment 4, as discussed above.

No segments of Route 1 meet the criterion established for a "Safety Concern".

### **VIII. IMPROVEMENTS NECESSARY TO ACHIEVE THE ROUTE CONCEPT**

The following improvements are necessary to achieve the Route Concept for Route 1 in District 1:

- Widen portions of Route 1 to 9.8 meters or 32' (7.3 meters or 24' between KP 144.8 and 169.9 (PM 90.0 and 105.6)). This widening can be in conjunction with rehabilitation projects, or part of an effort to widen for non-motorized traffic. No cost estimate has been made for these improvements.
- Capacity or operational improvements in the Fort Bragg area. Additional operational improvements could cost between \$1 and \$5 million and if widening to 4-lanes is required, it could be much more expensive.
- Safety improvements should be made as necessary and operational improvements should be considered on a limited basis.

### **IX. TRANSIT AND HIGH OCCUPANCY VEHICLE (HOV) CONSIDERATIONS**

Public transit service utilizing Route 1 is provided by the Mendocino Transit Authority. The areas served include the Fort Bragg area and the City of Mendocino, connecting the coast with urban centers on Route 101 including Santa Rosa. The railroad operating as The Skunk Train provides excursion service between Fort Bragg and Willits and is struggling with

**ROUTE 1 RCR**

financial issues. The Mendocino Stage once provided passenger service but now primarily operates as a courier service, although it is exploring the possibility of initiating subscription passenger service. Table III below summarizes the public transit information for routes using Highway 1.

**Table III  
Service Providers and Ridership on Route 1**

<b>MENDOCINO COUNTY</b>			
Operator	Frequency of service	Location	Yearly Ridership
MTA Route 4	trips/day 7 days/week	Service within the City of Fort Bragg and areas north and south (MEN-20-KP 0.0/53.4 (PM 0.0/33.19))	22,560
MTA Route 5	22 trips/day weekdays	Within the City of Fort Bragg providing 60 minute headway (MEN-101-KP 37.7/49.6 (PM 23.3/30.8)) (MEN-20-KP 53/61 (PM 33/38))	30,940
MTA Route 60	12 trips/day weekdays	Connecting with MTA route 5 at Fort Bragg, serving points south including Mendocino, Casper, and Albion (MEN-20-KP 0.0/53.4 (PM 0.0/33.19))	18,635
MTA Route 65	2 trips/day 7 days/week	Service from Mendocino to Santa Rosa via Fort Bragg, Willits, Ukiah, Hopland using Highways 1, 20, and 101	9,560
MTA Route 75	4 trips/day weekdays	Service between Gualala and Ukiah using Highways 1, 128, and 253 connecting to Highway 101	14,116
Mendocino Stage	unscheduled	Primarily courier service with passenger service secondary. Working to initiate subscription-based passenger service between Fort Bragg and Mendocino	-----

Due to the rural nature of Route 1, and relatively low peak hour traffic volumes during commute hours, no HOV considerations are necessary.

**X. ACCESS MANAGEMENT**

Access management involves managing where vehicles are allowed to enter the highway, to improve highway operations and reduce collisions.

Numerous access openings on Route 1 have less than desirable sight distance. Further, with the scattered rural development and development within Cities and Communities along Route 1, access management strategies may have the potential to reduce traffic conflicts, congestion, and collisions.

The state owns access rights to control points of access onto Route 1 in three locations: near the City of Mendocino (MEN-1-PM R48.9/57.5), at the junction of Highway 20 to the Noyo River (MEN-1-PM 59.9/60.2), and from De Haven Creek to the Vista Point (MEN-1-PM 79.0/79.3 and 79.77/81.1).

## ***ROUTE 1 RCR***

### **XI. ADOPTIONS, RESCISSIONS AND RELINQUISHMENTS**

New or changed highway routings generally require adopting a new route and rescinding the previously adopted route. The Route may also be relinquished to a city, county or other public entity.

No significant adoptions, rescissions, or relinquishments are anticipated on Route 1 in District 1.

**ROUTE 1 RCR**  
**APPENDIX A**  
**Level of Service (LOS)**

**LOS**

**Description of Typical Traffic Conditions**

**Delay**

**Service Rating**

**A**



Highest quality of service. Free traffic flow, low volumes and densities. Little or no restriction on maneuverability or speed, and a high level of comfort and convenience.

None

Excellent

**B**



Stable traffic flow – speed becoming slightly restricted. The presence of others in the traffic stream begins to be noticeable. Low resistance on maneuverability.

None

Very Good

**C**



Stable traffic flow, but less freedom to select speed, change lanes or pass. Comfort and convenience decreasing as density increases.

Minimal

Good

**D**



Approaching unstable flow. Speeds tolerable, but subject to sudden and considerable variation. Reduced maneuverability, driver comfort and convenience.

Minimal

Adequate

**E**



Unstable traffic flow with rapidly fluctuating speeds and flow rates. Short headways, low maneuverability and low driver comfort and convenience.

Significant

Fair

**F**



Forced traffic flow. Speed and flow may drop to zero with high densities. Queues tend to form behind such locations since arrival flows exceed traffic discharges.

Considerable

Poor