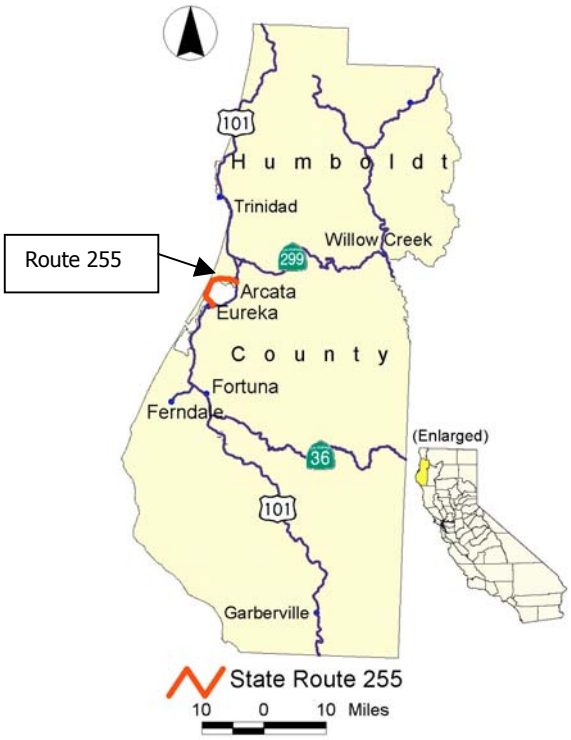
ROUTE CONCEPT REPORT



ROUTE 255 CORRIDOR

01-HUM-255-KP 0.0/14.2 (PM 0.0/8.8)

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 planning guide for Caltrans, our Regional Planning Partners, local entities and the public.

Approval Recommended:

CHARLIE FIELDER Date
Deputy District Director
Program/Project Management

Approval Recommended:

CHERYL S. WILLIS Date
Deputy District Director
Planning

Approved:

RICK KNAPP Date
District Director
District 1

JUNE 2001

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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 1997 Highway Capacity Manual.

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 are generally uniform for an entire route or corridor, unless there are overriding considerations (e.g. a major change in function along the route or feasibility concerns, etc).

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 1998 STIP, the 1998 STIP Amendment, and the 2000 STIP.

9. Environmental documents are not required for Route Concept Reports. However, individual improvement projects identified in Route Concept Reports will follow established environmental processes as required by law.

ROUTE CONCEPT REPORT

ROUTE 255

01-HUM-255-KP 0.0/14.2 (PM 0.0/8.8)

I. ROUTE CONCEPT AND RATIONALE

FACILITY CONCEPT

Route 255 should remain a mix of 2- and 4-lane conventional highway and freeway/expressway, maintained and rehabilitated as necessary on its existing alignment.

Route 255 provides access to both the industrial locations on the Samoa Peninsula and the Woodley Island Marina, as well as the community of Manila.

LEVEL OF SERVICE CONCEPT

The recommended concept LOS for this Route is "E", except in the area from the Arcata urban limits to Junction of Route 101 (KP 11.6/14.2 or PM 7.2/8.8) where no level of service concept has been established. The signalized portion of the route is expected to remain a "stabilized flow" segment and the rest of the Route's segments are expected to operate at or above the Concept level of service through the year 2020.

ROUTE CONCEPT FUNCTION

This Route Concept should serve as a tool for long-range planning for Route 255. 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.

II. ROUTE MANAGEMENT STRATEGIES

REHABILITATION STRATEGY

Caltrans Design Standards permit rehabilitation at present width, as long as the traveled way and usable shoulder width is at least 32 feet (based on current Route 255 traffic volumes). Standards dictate that sections having an overall width of less than 9.8 meters (32 feet) should be widened to 12 meters (40 feet) during rehabilitation. On Segment 3 of Route 255 (between KP 8.7/11.6 or PM 5.4/7.2), consideration should be given to widening in conjunction with future rehabilitation.

The remaining segments of Route 255 meet the minimum width criteria and could therefore be rehabilitated at their present width.

SAFETY AND OPERATIONAL IMPROVEMENT STRATEGY

Two segments of Route 255 (KP 0.0/2.7 and 2.7/8.7 or PM 0.0/1.7 and 1.7/5.4) have collision rates exceeding one and one-half times the Statewide average based on similar facilities. **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.

GOODS MOVEMENT STRATEGY

Historically, Route 255 has carried relatively high volumes of heavy truck traffic to support the industries on the Samoa Peninsula. This Route is also used as a connection to port facilities on the Peninsula. Heavy truck traffic has declined somewhat in recent years, due to reduced timber harvests.

No goods movement improvements are planned for Route 255 at this time.

NON-MOTORIZED FACILITIES STRATEGY

Route 255 experiences generally low to moderate volumes of non-motorized traffic, with higher volumes in the Arcata area. Historically, the City of Arcata has expressed interest in developing additional shoulder width to accommodate bicycle traffic on Route 255. Relatively narrow right of way widths, generally minimal building setbacks, and relatively high traffic volumes make it difficult to improve the facility for non-motorized traffic.

Shoulder widths in Segment 3 (KP 8.7/11.6 or PM 5.4/7.2) are less than desirable for non-motorized traffic. As previously noted, shoulder widening should be considered in conjunction with future rehabilitation of this section.

CORRIDOR PRESERVATION STRATEGY

It is anticipated that Route 255 will remain as it exists, a 2-lane conventional highway, with some expressway and some 4-lane conventional highway. No substantial long-term right of way needs are anticipated.

III. ALTERNATIVE CONCEPTS CONSIDERED

No alternative concepts were considered for Route 255 in District 1.

IV. ROUTE ANALYSIS

DESCRIPTION

Route 255 connects the Cities of Eureka and Arcata via a crossing of Humboldt Bay and the Samoa Peninsula. It provides access to industrial locations on the Samoa Peninsula, and to the Woodley Island Marina. It also serves local traffic for the small community of Manila, located adjacent to Route 255 on the peninsula. It also serves recreational traffic along the Route for access to peninsula beaches.

Route 255 begins at Route 101 in Eureka, and proceeds in a northwesterly direction across Humboldt Bay, turning northeasterly and following the Samoa Peninsula to the Mad River Slough before continuing generally easterly back to Route 101 in the City of Arcata. The entire Route is within west-central Humboldt County. Route 255 is almost 14.5 kilometers (nine miles) in length and has a post mile description of 01-HUM-255-KP 0.0/14.2 (PM 0.0/8.8).

Route 101, a principal arterial, intersects each end of Route 255. The southernmost intersection is within the City of Eureka and the northernmost intersection is within the City of Arcata. Route 101 is the primary highway access route to the California North Coast.

ROUTE PURPOSE

Segment 1, which is approximately 2.7 kilometers (1.7 miles) in length, is within the Eureka urban area, and is functionally classified as an Urban Minor Arterial. Segment 4 (also approximately 2.7 kilometers or 1.7 miles in length) is within the Arcata urban area. Part of this segment is functionally classified as an Urban Minor Arterial, and another part is considered an Urban Principal Arterial. The intervening portion (Segments 2 and 3) traverses rural areas, and is functionally classified as a Rural Minor Arterial.

Route 255 provides the Cities of Eureka and Arcata with direct access to industrial and recreational locations on the Samoa Peninsula and is the only road connecting the Woodley Island Marina with the mainland. Residents of the small communities of Samoa, Fairhaven, and Manila (all with populations of less than 1,000) also use Route 255 for local traffic, and for access to Eureka and Arcata.

ROUTE SEGMENTATION

Route 255 is segmented as follows for System Planning purposes:

TABLE 1
ROUTE 255 SEGMENTATION

SEG #	HUM		DESCRIPTION
	KP	PM	
1	0.0/2.7	0.0/1.7	Route 101 to Eureka Urban Limits
2	2.7/8.7	1.7/5.4	Eureka Urban Limits to 0.2 Mi. North Mad River Slough Br. #4-257
3	8.7/11.6	5.4/7.2	0.2 Mi. North Mad River Slough Br. #4-257 to Arcata Urban Limits
4	11.6/14.2	7.2/8.8	Arcata Urban Limits to Junction Rte. 101

LAND USE

Land use adjacent to Route 255 varies dramatically. In Eureka, the Route passes through commercial/residential development. The Humboldt County portion of the Route crosses Humboldt Bay via Woodley Island (Marina) and continues north along the Samoa Peninsula, primarily through open space areas, with some low density residential and several adjacent industrial areas. Land uses within the Route 255 corridor in Arcata are mixed, with industrial and commercial land uses prevalent.

Little development along Route 255 is anticipated. Two primary reasons are land use restrictions due to the route's coastal location combined with little projected growth Countywide.

EXISTING FACILITIES

Table II below summarizes existing facility characteristics for the Route 255 corridor in District 1.

TABLE II
EXISTING FACILITY CHARACTERISTICS
ROUTE 255

SEG #	HUM 283 KP	HUM 283 PM	DESCRIPTION	EXISITNG FACILITY
1	0.0/2.7	0.0/1.7	Route 101 to Eureka Urban Limits	2-lane expressway
2	2.7/8.7	1.7/5.4	Eureka Urban Limits to 0.2 Mi. North Mad River Slough Br. #4-257	2-lane conventional/ expressway
3	8.7/11.6	5.4/7.2	0.2 Mi. North Mad River Slough Br. # 257 to Arcata Urban Limits	2-lane conventional
4	11.6/14.2	7.2/8.8	Arcata Urban Limits to Junction Rte. 101	4-lane conventional

Functional Classification	Minor Arterial/Urban Principal Arterial
Eligible for Federal Funding	Yes
Freeway and Expressway System:	No
Eligible for Scenic Highway Designation:	No
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:	No
Public Airports Served:	Eureka Municipal Airport
Rail Service	Northwestern Pacific Railroad
Intercity Bus Service:	None (Regional Bus Service)
Intersecting State Highway Routes:	101
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 255 are shown on Map 1 on the following page. 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.)

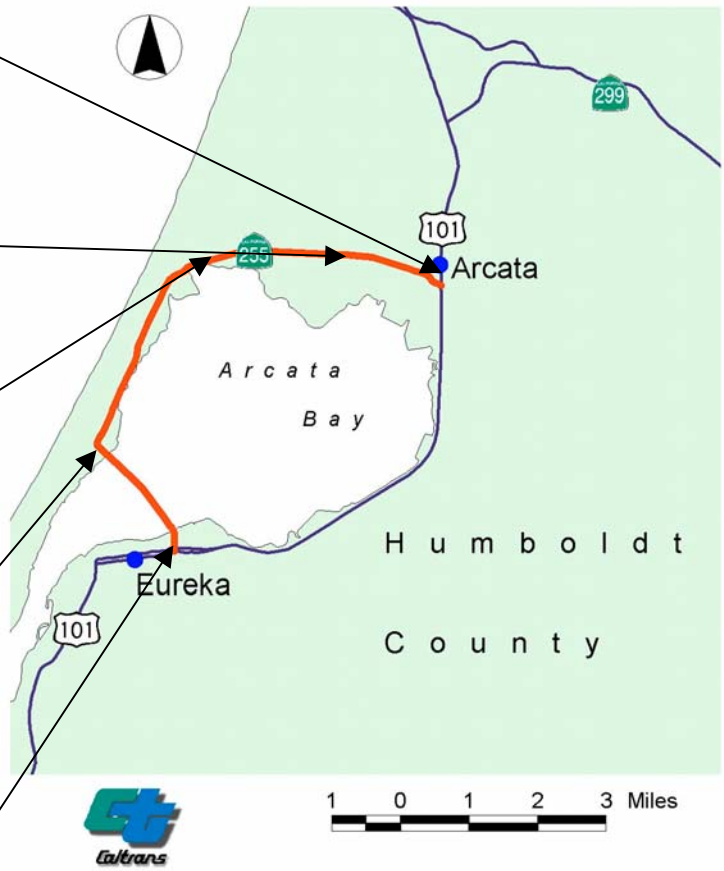
MAP 1
PRESENT AND FUTURE OPERATING CONDITIONS
ROUTE 255

HUM-255-KP 11.6/14.2 (PM 7.2/8.8)
Terrain: Level
Gradeline: Level
Existing (1998)
4-lane conventional
3.6 m (12') lanes
15.8-19.5 m (52'-64') paved
10,300 AADT
LOS: Stable, free-flow condition
Collision Rate =less than 1.5 times
the Statewide average
Trucks=2%
Future (2020)
11,300 AADT
LOS: Stable, free-flow condition

HUM-255-KP 8.7/11.6 (PM 5.4/7.2)
Terrain: Level
Gradeline: Level
Existing (1998)
2-lane conventional
3.6 m (12') lanes
8.8 m (29') paved
4300 AADT
"C" LOS
V/C=0.19
Collision Rate =less than 1.5 times
the Statewide average
Trucks=7%
Future (2020)
4800 AADT
"C" LOS
V/C=0.21

HUM 255-KP 2.7/8.7 (PM 1.7/5.4)
Terrain: Level
Gradeline: Rolling
Existing (1998)
2-lane conventional/expressway
3.6 m (12')lanes
9.7-12.2 m (32'-40') paved
5400 AADT
"C" LOS
V/C = 0.25
Collision Rate =greater than 1.5 times
the Statewide average
Trucks=7%
Future (2020)
6000 AADT
"C" LOS
V/C = 0.28

HUM-255-KP 0.0/2.7 (PM 0.0/1.7)
Terrain: Level
Gradeline: Level
Existing (1998)
2-lane expressway
3.6 m (12') lanes
9.7-12.2 m (32'-40') paved
7100 AADT
"D" LOS
V/C=0.32
Collision Rate =greater than 1.5 times
the Statewide average
Trucks=7%
Future (2020)
8400 AADT
"D" LOS
V/C=0.38



PROGRAMMED IMPROVEMENTS

Seismic retrofitting of Bridge structures is identified for Route 255, under Phase 2 of the Seismic Retrofit program. This seismic retrofit is a State Highway Operation and Protection Program (SHOPP) project and is expected to cost approximately $40 million. No capacity increasing projects are programmed in the 2000 State Transportation Improvement Plan (STIP).

V. ENVIRONMENTAL CONSIDERATIONS

Primary environmental considerations for Route 255 include areas of archaeological sensitivity, sensitive plant species, and important wetland habitat for waterfowl and water associated wildlife. The Route crosses very sensitive estuarine and wetland areas.

VI. REGIONAL TRANSPORTATION PLANNING

The Humboldt County Regional Transportation Plan 1998/2000, Assessment of Needs, notes that: "Written input from the community addresses a need for turn lanes into Manila community roads to improve safety for those making turning movements from SR 255 into Manila."

VII. AREAS OF CONCERN

The following criteria are used to identify areas of concern on Route 255 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 1 (KP 0.0/2.7 (PM 0.0/1.7)) has experienced 3.90 collisions per million vehicle-miles, compared to an average of 1.25 collisions per million vehicle-miles, based on similar facilities Statewide. This collision rate is approximately 320% of the Statewide average, based on similar facilities.

Segment 2 (KP 2.7/8.7 (PM 1.7/5.4)) has experienced 1.23 collisions per million vehicle-miles, compared to an average of 0.67 collisions per million vehicle-miles, based on similar facilities Statewide. This collision rate is approximately 184% of the Statewide average, based on similar facilities.

The District has an established collision surveillance and monitoring process that includes investigation and recommendation of safety improvements for specific locations with collision concerns as they are identified.

VIII. IMPROVEMENTS NECESSARY TO ACHIEVE THE ROUTE CONCEPT

No new facility improvements are necessary to achieve the Route Concept (maintain and rehabilitate) through the twenty-year period. Consideration should be given to widening Segment 3 (KP 8.7/11.6 (PM 5.4/7.2)) to include paved shoulders in conjunction with roadway rehabilitation, and to widen shoulders to better accommodate non-motorized traffic within the City of Arcata.

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

Route 255 is served by Humboldt Transit Authority's Redwood Transit System buses. Approximately six bus trips are made in each direction daily, excluding weekends and holidays.

X. ACCESS MANAGEMENT

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

Access management is not a concern for much of Route 255. An exception is within the City of Arcata, where access management may have the potential to reduce traffic conflicts, congestion, and collisions.

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 255 in District 1.

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 or 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 flow exceed traffic discharges.	Considerable	Poor