

1-07-013 - CALIFORNIA DEPARTMENT OF TRANSPORTATION
MAD RIVER BRIDGES

EXHIBIT LIST

EXHIBIT

- AA Project Location Map
- BB Project Location Map Also Showing Demello Mitigation Site, DFG Mad River Slough Wildlife Area and Arcata Marsh & Wildlife Sanctuary
- CC Shows Same as Exhibit BB, Except the Base Layer is a Color Aerial Photo
- DD Location Map Showing Project Site and Shively AG Mitigation Site
- EE Color Aerial Photo Showing Same as Exhibit DD, Plus Blow-up Aerial of Shively Site

- A Final ND
- B Mad River Bridges Replacement On-Site Wetland and Riparian Mitigation and Monitoring Plan, November 2007
- C Old Samoa Parcel Conceptual Mitigation Plan, November 2007
- D Jones & Stokes Transmittal Memo of Noise Analysis Reports
- E Analysis of Pile Driving Noise Impacts to Listed Salmonids for the mad River Bridge Replacement Project, August 23, 2007 (Revised November 5, 2007)
- F Supplemental Pile-Driving Noise Analysis for the Mad River Bridge Replacement Project – DRAFT, November 2, 2007
- G Mad River Bridge Replacement Project: Evaluation of Underwater Noise Generated by Use of Smaller Piles (30-inch-Diameter) – DRAFT, November 6, 2007
- H Bioacoustic Footprint and Proposed Fish Exclusion Zone Map
- I Fish Exclusion to Avoid and Minimize Bioacoustic Impacts to Salmonids During Pile Driving During the Construction of Mad River Bridges, December 6, 2007
- J Fish Weir Background Information
- K Marine Mammal Monitoring Plan
- L Water Pollution Control Program for Mad River Bridge – Brushing Only
- M Constructability Alternatives Analysis
- N ADL Mapping
- O Fish Mitigation Proposal and Map
- P On-Site Wetland and Riparian Mitigation Map
- Q. Resource Properties Aerial Photo/Map of Demello Site in Relation of DFG and City of Arcata Resource Sites
- R 1941 Aerial Photo of Demello Site
- S Present Day Color Aerial Photo of Demello Site
- T Aerial Photo of Agricultural Properties at Mad River Bridges Project Site
- U Photo Simulations of Bridge, Pedestrian Walkway and Railings
(**Note:** Railing Does Not Have Bike Rail Shown Because We Are Working On a New Rail Design and Trying to Get Lower Height for Bike Rail)
- V Bridge Plans
- W Project Layouts
- X Drainage Profiles and Layouts
- Y Construction Access Map

Mad River Bridges Replacement Project



MCKINLEYVILLE

Project Limits

Project Location

Central Ave.

Mad River

200

299

101

ARCATA

255

ARCATA BAY

101

255

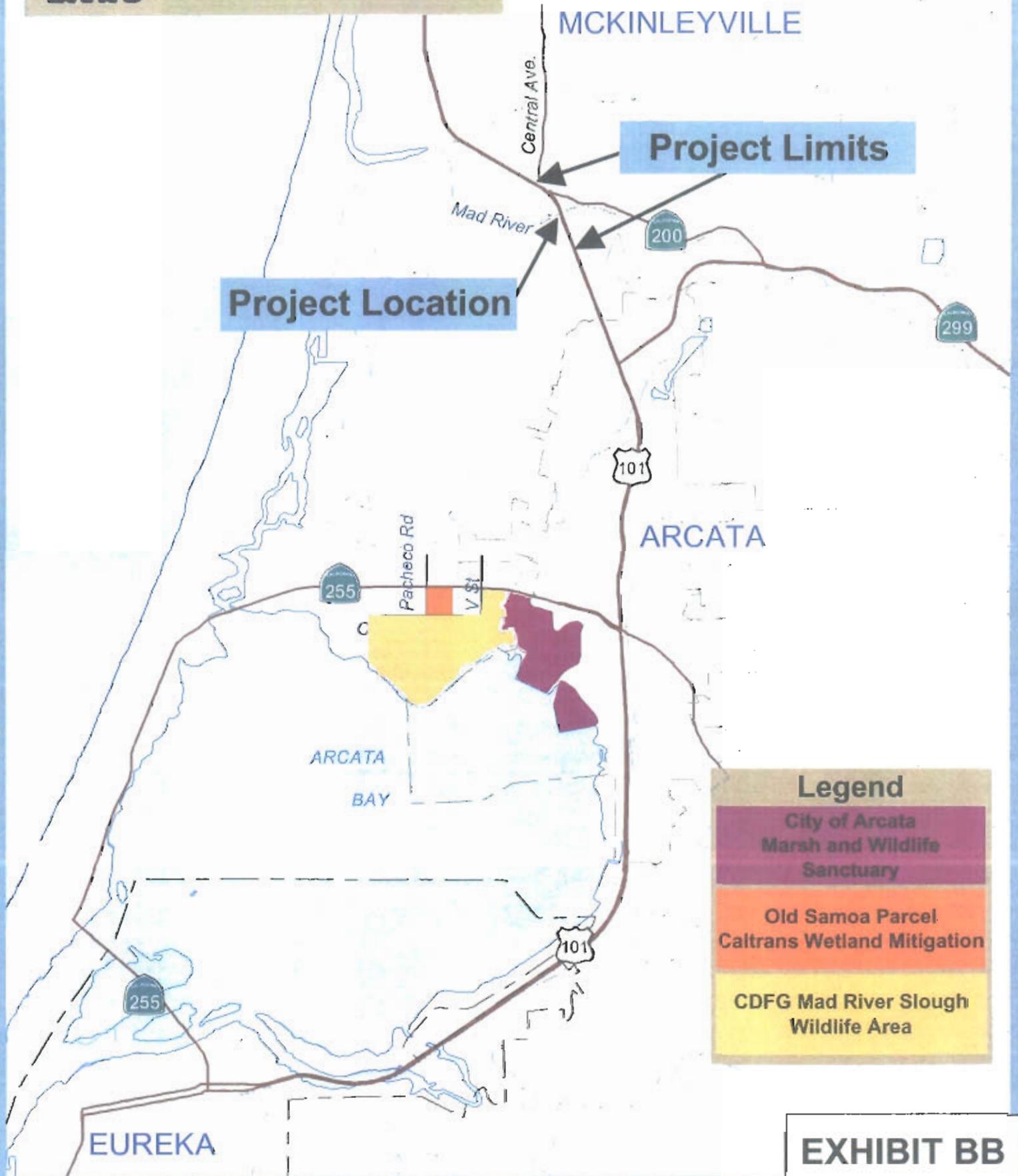
EUREKA



EXHIBIT AA



Mad River Bridges Replacement Project



Legend

- City of Arcata Marsh and Wildlife Sanctuary
- Old Samoa Parcel Caltrans Wetland Mitigation
- CDFG Mad River Slough Wildlife Area

Caltrans
Mad River Bridges Replacement Project



Legend

- City of Arcata Marsh and Wildlife Sanctuary
- Old Samoa Parcel Caltrans Wetland Mitigation
- CDFG Mad River Slough Wildlife Area



EXHIBIT CC



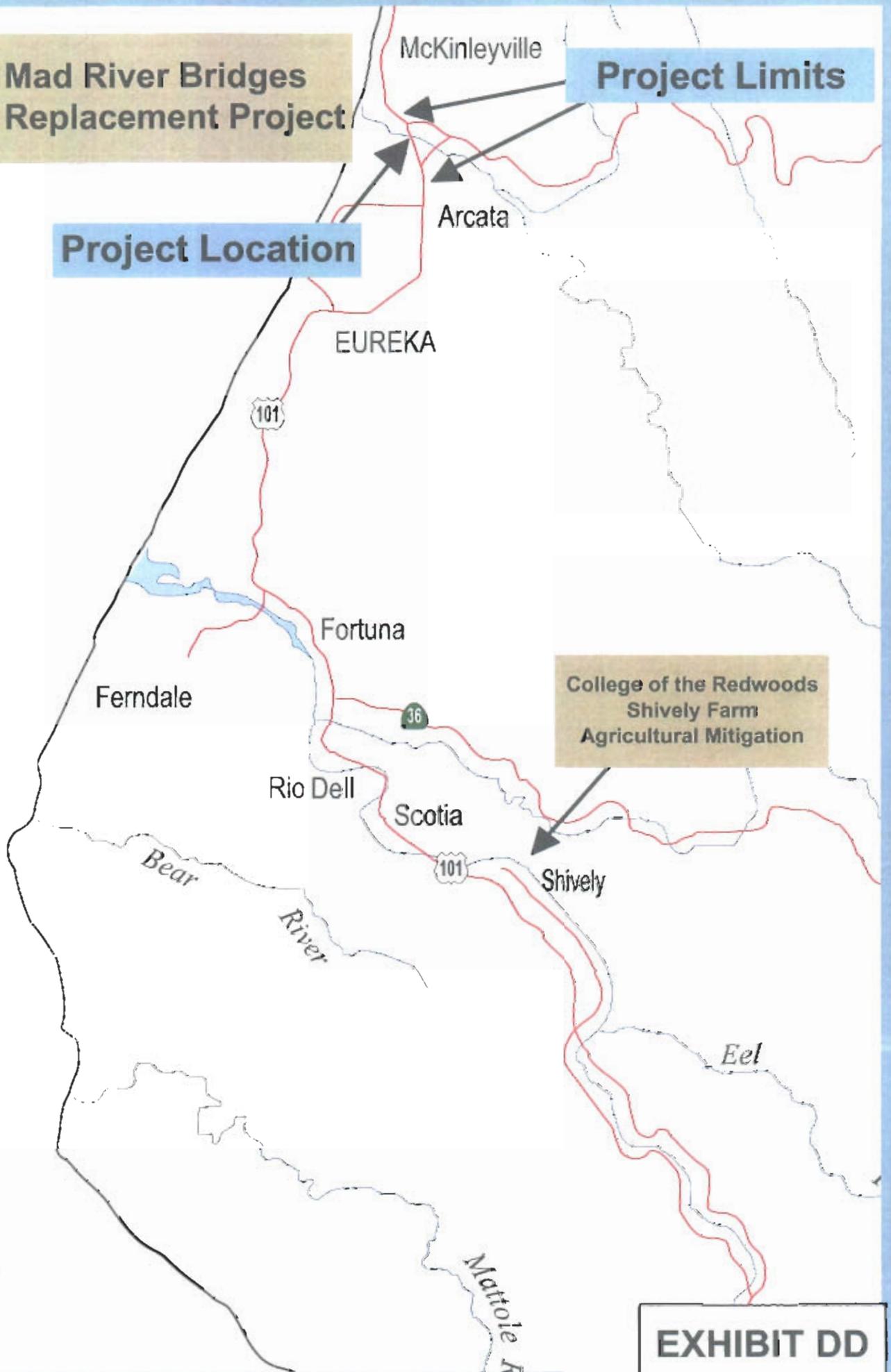
Mad River Bridges Replacement Project

Project Limits

Project Location

College of the Redwoods
Shively Farm
Agricultural Mitigation

EXHIBIT DD





Mad River Bridges Replacement Project



Legend

College of the Redwoods
Shively Farm



MAD RIVER BRIDGES REPLACEMENT PROJECT US ROUTE 101



Negative Declaration and Initial Study

US Route 101 Between Arcata and McKinleyville
Humboldt County

01-HUM-101-KP 143.4/145.5
(PM 89.1/R90.4)
01-296101

JUNE 2005

*Prepared by the
California Department of Transportation*



General Information About This Document

What's in this document?

This document is an Initial Study/Negative Declaration, which examines the potential environmental impacts of alternatives for the proposed project located in Humboldt County, California. These documents have been prepared in accordance with the California Environmental Quality Act (CEQA), the Public Resources Code 21000 *et seq*, and the State CEQA Guidelines 14 California Code of Regulations (CCR) 15000. The document describes why the project is being proposed, the proposed project and project alternatives, the existing environment that could be affected by the project, the potential impacts of each of the alternatives and proposed mitigation measures to minimize project impacts to the environment.

What should you do?

- Please read this Initial Study/Negative Declaration.
- We welcome your comments. If you have any concerns regarding the proposed project, please Submit comments via regular mail to: Caltrans, Attn: Lena Ashley, North Region Environmental Services Office, P.O. Box 3700, Eureka, California 95502; submit comments via email to: Lena_Ashley@dot.ca.gov.

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies; (3) modify the project; or (4) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please contact Lena Ashley at P.O. Box 3700, Eureka, California 95502, (707) 445-6416 Voice, or use the California Relay Service TTY number (707) 445-6463.

01-HUM-101-KP 143.4/145.5
(PM 89.1/R90.4)
EA 01-296101
SCH 2003122015

US 101 On the Mad River Bridges Between
Arcata and McKinleyville in Humboldt County, CA

Negative Declaration and Initial Study

Submitted pursuant to Division 13, Public Resources Code

**THE STATE OF CALIFORNIA
Department of Transportation**

Date of Approval

**CHARLES C. FIELDER
Director, District 1
California Department of Transportation**

Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to replace the northbound and southbound bridges crossing the Mad River on US Route 101 between Arcata and McKinleyville in Humboldt County. The Central Avenue on- and off-ramps will be realigned to connect to the new bridges and the northbound Central Avenue off-ramp intersection with Route 200 will be reconstructed. One existing residence and existing utilities will need to be relocated. Several culverts will be upgraded.

Determination

Caltrans has prepared an Initial Study, and determines from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The project will have no permanent effect on air quality, cultural resources, recreation public services, geology, and traffic patterns.
- The proposed project will have no significant effect on floodplains, farmlands, visual resources, water quality, hydrology, population and housing, utilities, hazardous wastes, and transportation.
- Potential impacts to riparian vegetation will be mitigated.
- Potential impacts to coho salmon, chinook salmon, and steelhead trout, designated critical habitat and Essential Fish Habitat will be mitigated.
- Wetland impacts will be mitigated to result in no net loss of wetlands.

Lena Ashley, Chief
North Region Environmental Services
California Department of Transportation

Date

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I. SUMMARY

The California Department of Transportation (Caltrans) in conjunction with the Federal Highway Administration (FHWA) proposes to replace the northbound and southbound bridges crossing the Mad River on US Route 101 between kilometer post (KP) 143.4/145.5 (PM 89.1/R90.4) in Humboldt County (Figure 1, Location Map). The bridges are structurally deficient and do not meet current scour (pier footing erosion), seismic or geometric (e.g., road curve, lane width, vertical clearance) guidelines. The proposed project is designed to correct these deficiencies.

Two alternatives, in addition to the No Build Alternative, were considered. Alternative 1, the selected alternative, would construct the new bridges to the west of the existing bridges and Alternative 2 would construct the new bridges to the east of the existing bridges. Under both Alternative 1 and 2, the existing northbound and southbound bridges carry traffic during the construction of the new bridges, then traffic is diverted to the new facility and the existing bridges are demolished. The new bridges would consist of two structures, each of which would carry two lanes of traffic.

The Central Avenue on- and off-ramps will be realigned to connect to the new bridges and the northbound Central Avenue off-ramp intersection with Route 200 will be reconstructed. New right of way acquisition will be required to construct the project. Under Alternative 1, one existing residence is located within the proposed new right of way and will require relocation or removal. Existing utilities affected by the proposed project would require relocation. In addition, seven culverts will be upgraded.

The proposed project will result in temporary and permanent impacts to environmental resources. These impacts are considered to be less than significant with proposed mitigation. Specific mitigation measures to reduce the effect of potential direct impacts to Coho and Chinook salmon, steelhead trout and designated critical habitat will be incorporated into project construction techniques and schedule. Additional proposed mitigation measures employing Best Management Practices (BMP's) and resource agency permit conditions will insure that project impacts are reduced to the maximum extent feasible. Mitigation to further reduce the potential permanent impacts to loss of agricultural lands and riparian vegetation corridor have also been incorporated into the project.

The proposed project has a four-year construction schedule with work programmed to commence in year 2007 with completion in year 2011. The estimated construction cost is nearly \$35 million with an estimated additional \$600,000 for right of way for a total project cost of approximately \$35.5 million.

The following permits are required:

- California Coastal Commission Permit
- Humboldt County Local Coastal Development Permit
- Dept. of Fish and Game 1601 Streambed Alteration Agreement
- Regional Water Quality Control Board 401 Permit and SWPPP
- US Army Corps of Engineers Section 404 Permit

II. BACKGROUND

The Mad River bridges consist of two separate bridges carrying two-lanes of traffic each north and southbound on US Route 101 between the community of McKinleyville to the north and City of Arcata to the south in Humboldt County. The first bridge crossing the Mad River at this location was a covered wood structure constructed in the early 1900's replacing the ferry system of the late 19th century that provided access across the river. The roadway was converted from a county road to a state highway in 1921 and Caltrans replaced the wooden bridge with a steel truss structure in 1929. The bridge carried both north and southbound traffic until a separate southbound bridge was constructed in 1958 as part of the US Route 101 freeway bypass of McKinleyville. That same year, the northbound bridge was restriped to provide two traffic lanes to accommodate the new alignment. Seismic work was performed on the southbound bridge in 1987 and, since that time, only minor maintenance activities have occurred on both bridges. These bridges remain in service today.

III. PURPOSE AND NEED

The north and southbound Mad River Bridges are structurally deficient and are at the end of their useful life. River flows have scoured the pier footings exposing and undermining the bridge foundations. Additionally, the bridges do not meet current seismic guidelines. Lastly, lane and shoulder widths on both bridges, on- and off-ramp acceleration and deceleration lengths and Route 200 intersection geometrics are substandard and do not meet current design guidelines. Route 200 is also named North Bank Road on US Route 101 signage. This document will use the more brief identification of Route 200 when referring to this project segment.

A. Scour Activity

The need for the bridge replacement is for public safety purposes. Caltrans' 1993 Bridge Inspection Reports indicate both bridge foundations to be unstable for calculated scour conditions (in accordance with Federal Highway Administration ((FHWA)) Technical Advisory T5140.23, 'Evaluating Scour at Bridges'). The riverbed beneath the northbound bridge has been reduced in elevation by 4.5m (15 ft.) since construction in 1929 and by 1.8m (6 ft.) since 1958 for the southbound bridge. Gravel extraction operations have occurred upstream of the bridges over the last 40 years. Impacts resulting from the removal of riverbed materials may have contributed to the rate of scour over time. Bridge pier size and location and natural river hydrodynamics may also contribute to scouring. As a result, bridge pier foundations are being exposed. Undermining of the pier foundations can lead to unstable bridge conditions with possible collapsing of the structures.

The north and southbound structures have been listed in the Structure Replacement and Improvement Needs (STRAIN) report since 1991 targeting bridge replacement by 1994/1995.

B. Seismic Improvements

Since the northbound structure was constructed in 1929 and the southbound structure constructed in 1958, neither bridge meets current seismic design guidelines even though the southbound bridge was seismically retrofitted in 1987. However, no retrofitting of the

northbound bridge has ever occurred. The proposed bridges will be designed to withstand the maximum credible seismic event for the project location and will be designed to meet current seismic design guidelines.

C. Collision Data

Table 1 below summarizes the collision data from the Traffic Accident Surveillance and Analysis System (TASAS) Table “B” for the five-year period from April 1, 1997 through March 31, 2002. The table shows the actual collision rates for each highway segment and statewide average collision rates for similar type facilities. Collision rates at the project site on US Route 101 are 2.36 times the state average. Collision rates on Route 200 are 3.03 times the state average. Table 2 summarizes the actual fatalities and injuries and indicates the cause of the injuries within the same five-year timeframe.

Table 1 Collision Rate (Collisions/MVM*) 4/1/97 – 3/31/02

<i>Location</i>	<i>Actual</i>			<i>Average</i>		
	Fatal	F+I	Total**	Fatal	F+I	Total
US Route 101 (PM 89.77/90.13) (north and southbound)	0.000	0.51	1.42	0.008	0.22	0.60
Route 200 (PM 0.0/0.60) (east and westbound)	0.000	1.24	5.76	0.019	0.81	1.90

*million vehicle miles

**includes all collision types (fatal+injury+property damage only)

Table 2 Collisions (Actual) 4/1/97 – 3/31/02

<i>Location</i>	Total	Fatal	Injury	F+I	Multi-Veh	Wet	Dark
Route 101 (PM 89.77/90.13) (north and southbound)	28	0	10	10	15	10	12
Route 200 (PM 0.0/0.60) (east and westbound)	14	0	3	3	10	3	4

The data above shows a total of 42 collisions occurred within the project limits over the five-year time period. Approximately two-thirds of the collisions are attributable to vehicles weaving from one lane to another to access the Central Avenue on- and off-ramps.

Approximately one-third of the collisions occurred in the Central Avenue off-ramp/Route 200 intersection area. The majority of these broadside collisions resulted from unsafe driving practices using the off-ramp and westbound Route 200 traffic not yielding to US Route 101 traffic. A contributing factor in these collisions was poor sight distance.

D. Existing Condition.

The portion of route 101 over Mad River is classified as a Principal Arterial on the National Highway System. This segment of Route 101 serves interregional and interstate traffic. It is

the primary arterial and economic lifeline in Humboldt County and neighboring counties to the north and south. It is also designated as a Pacific Coast Bike Route. Within the project limits, Route 101 is a four lane freeway with 6.7m (22') median, 3.6m(12') lanes, 2.4m (8') outside shoulders, and 3.0m (10') inside shoulders north of the bridges and 0.6m (2') inside shoulders south of the bridges. The roadways are separated by a concrete median north of the bridges and three beam barriers south of the bridges.

The following information discusses existing roadway conditions within the project limits:

1. Northbound Bridge and Central Avenue Off-ramp. The existing northbound bridge is approximately 225.5m (740-ft.) long and has two 3.35m (11-ft.) wide travel lanes and .3m (1-ft.) wide inside and outside shoulders. The Central Avenue off-ramp deceleration lane begins midway on the bridge structure with the off-ramp separation starting toward the northern end of the structure. Once the off-ramp is taken, it is approximately 183m (600 ft.) to the Route 200 intersection. Substandard travel lane and shoulder widths, a short deceleration lane beginning on the bridge and off-ramp starting on the bridge--with exiting traffic slowing—all make vehicle maneuvering difficult and may have contributed to collisions as shown in Table 2 above.

The 3.35m (11-ft.) wide lanes and 4.5m (15-ft.) high overhead steel truss limit the use of the bridge by wide-load vehicles and those exceeding the height limitation (Figure 2, Photo). Vehicles rerouted to avoid the bridge must take a four-mile detour from US Route 101 beginning south of the Mad River Bridge to Route 299, to Route 200 and then back onto US Route 101 at the Central Avenue/Route 200 intersection immediately north of the bridge structure. Maintenance reports indicate the truss structure has been impacted three times since 1993 by trucks. In addition, the existing .3m (1-ft.) wide shoulders do not adequately accommodate pedestrian or bicycle use. However, an existing flashing yellow beacon located immediately south of the bridge can be triggered by a pedestrian or bicyclist to alert motorists that they are on the structure.

2. Northbound Central Avenue Off-ramp and Intersection with Route 200. The US Route 101 northbound Central Avenue off-ramp to McKinleyville terminates at an at-grade intersection with Route 200. The Central Avenue off-ramp deceleration lane begins on the bridge structure with the off-ramp located immediately north of the bridge truss structure. Central Avenue and Route 200 are two-lane facilities with varying lane and shoulders widths from 3.35m to 3.6m (11 to 12-ft.) wide and .3 to 1.2m (1 to 4-ft.) wide respectively. The intersection is difficult to navigate because of poor sight distance and the generally high speed of northbound highway traffic exiting onto the off-ramp.

3. Southbound Central Avenue On-ramp/Southbound Bridge. The southbound Central Avenue on-ramp to US Route 101 has multiple curves and a short acceleration/merge lane onto the highway. The bridge was constructed with 3.6m (12-ft.) wide lanes, consistent with current design guidelines; however, the .6m (2-ft.) wide inside and outside shoulders do not meet current guidelines.

IV. PROJECT ALTERNATIVES

Project alternatives evaluated include:

Alternative 1, Westerly Alternative
Alternative 2, Easterly Alternative
Alternative 3, No Build Alternative

Alternative 1 consists of constructing new bridges a new alignment westerly of the existing bridges. Alternative 1 is proposed as the preferred alternative because a western shift of the bridges will provide the area needed to improve the northbound Central Avenue off-ramp/Route 200 intersection.

Confirmation of the alternative selected was made after full evaluation of the environmental impacts and comments from the public and agencies.

A. Alternative 1, Selected Alternative.

The proposed project consists of the replacement of the existing northbound and southbound Mad River bridge structures on US Route 101. Construction of this alternative would be on a new alignment shifting the bridges west approximately 30.5m (100 ft.) from their existing location (Figure 3, Project Layout Plan). Reconstruction of the northbound Central Avenue off-ramp and intersection with Route 200 and the southbound Central Avenue on-ramp to US Route 101 is also proposed.

The new bridges will be cast-in-place (CIP) concrete box girder bridges. Bridge lengths will be approximately 229m (750 ft.) long. The northbound bridge is proposed to be 15.38m (50.5 ft.) to 26.5m (87 ft) wide and the southbound bridge is proposed to be approximately 12.76m (42 ft.) wide. Bridge widths vary due to on and off-ramp design and to accommodate the multi-purpose walkway. The bridges will be the same finished height. Current construction cost for this alternative is nearly \$35 million. Right of way costs are estimated to be approximately \$600,000 for a total cost of approximately \$35.5 million.

Construction scheduling and discussion of traffic operations during construction is discussed in Section B below, Construction Overview.

In summary, the safety features and improvements proposed for the Mad River bridges include:

- ◆ More scour-resistant bridges;
- ◆ Bridges designed and constructed to meet current seismic design guidelines to withstand maximum credible seismic events for the location;
- ◆ Wider lane and shoulder widths providing safer vehicle movements for all vehicle types;
- ◆ Direct and continued access on US Route 101 for high/wide-load vehicles eliminating a four mile detour;
- ◆ Reconstruction of on- and off-ramps increasing acceleration/deceleration lane lengths to improve sight visibility, improve traffic safety and reduce collisions;
- ◆ Reconstruction of the northbound Central Avenue intersection with Route 200 and install lighting and signage to improve sight visibility and reduce collisions;
- ◆ Widen outside shoulders on both bridges to accommodate bicycle access;
- ◆ A 2.4m (8-ft.) wide multi-use walkway on the east side of the northbound bridge to provide two-way non-motorized access over the bridge; and

- ◆ Minimum traffic delays during construction by using existing structures for traffic diversion while constructing new structures.

Specific geometric improvements are included below:

1. Proposed Northbound Improvements. The proposed northbound bridge will be constructed with two 3.6m (12-ft.) wide lanes with a 1.5m (5-ft) inside and a 3m (10-ft.) wide outside shoulder with approximately 1m (3 ft.) dedicated to the barrier rails and guardrails (Table 3). In addition, a 2.4m (8-ft.) wide multi-use accessway separated from the US Route 101 traffic lanes is proposed on the east side of the bridge structure providing two-way access across the river (Figure 4, Bridge Cross Section). Pedestrian access on the bridge will connect with the existing walkway on Route 200 northeast of the bridge and to Wymore Road southeast of the bridge. Either the outside shoulder or the multi-use accessway can accommodate bicyclists.

The northbound Central Avenue off-ramp will be reconstructed in a new alignment consistent with the proposed new bridge alignment. The off-ramp deceleration lane will be increased approximately 33m (110 ft.) in length from 147m to 180m (482 ft. to 591 ft.) (Table 4). The additional length is proposed to provide greater sight distance for exiting vehicles approaching the Central Avenue/Route 200 intersection.

The Route 200 intersection with Central Avenue will also be reconstructed to improve sight visibility and provide a smoother transition to northbound US Route 101 and McKinleyville-bound traffic from Route 200. The intersection will be geometrically redesigned to improve the skewed angle from 42° to 76°. Lighting and signage will be installed to improve visibility. The portions of Central Avenue and Route 200 within the project limits will be constructed with 3.6m (12-ft.) wide lanes and 2.4m (8-ft.) wide shoulders.

2. Proposed Southbound Improvements. The proposed southbound bridge will be constructed with two 3.6m (12-ft.) wide travel lanes, a 1.5m (5-ft.) wide inside and 3m (10-ft.) wide outside shoulder. The outside shoulder will also accommodate bicyclists. The southbound Central Avenue on-ramp will be reconstructed on a new alignment consistent with the proposed realignment for the main structures. The on-ramp acceleration/merge lane will be increased 252m (830 ft.) to provide improved sight visibility and to facilitate safer merges onto US Route 101.

Table 3 Existing and Proposed Lane and Shoulder Widths

<i>Location</i>	<i>Existing</i>			<i>Proposed</i>			
	Lane Width	Inside Shoulder	Outside Shoulder	Lane Width	Inside Shoulder	Outside Shoulder	Multi-Use Walkway (2-way)
Northbound bridge	3.3m (11 ft.)	0.3m (1 ft.)	0.3m (1 ft.)	3.6m (12 ft.)	1.5m (5 ft.)	3.0m (10 ft.)	2.4m (8 ft.)
Southbound bridge	3.6m (12 ft.)	0.6m (2 ft.)	0.6m (2 ft.)	3.6m (12 ft.)	1.5m (5 ft.)	3.0m (10 ft.)	
US Route 200	3.3m (11 ft.)	0.3m-1.2m (1-4 ft.)	0.3m-1.2m (1-4 ft.)	3.6m (12 ft.)	2.4m (8 ft.)	2.4m (8 ft.)	

Table 4 Existing and Proposed Acceleration/Deceleration Lane Lengths

<i>Acceleration/Deceleration Lanes</i>	<i>Type</i>	<i>Existing</i>	<i>Proposed</i>
Northbound Central Ave. off-ramp	Deceleration	147m (482 ft.)	180m (591 ft.)
Southbound Central Ave. on-ramp	Acceleration	180m (591 ft.)	432m (1,417 ft.)
Route 200/NB Central Ave	Acceleration	68m (223 ft.)	97m (318 ft.)

3. Utilities. Utilities are located within easements in the transportation right of way and will require relocation. It is anticipated that utilities will be relocated onto the new bridges. Utilities include a PG&E 8-inch diameter natural gas pipeline that currently is attached to the west side of the southbound bridge, PG&E 12.5 kv overhead electrical lines that transverses the bridges, Pacific Bell overhead copper and fiber optics cables and Cox Cable TV overhead cables running jointly with the Pacific Telephone cables on the east side of the northbound bridge. All utility route verifications and proposed relocations of lines will be made pursuant to the Caltrans' North Region Utility Verification and Relocation Policies and Procedures (June 7, 2003) memorandum regarding public utilities on State highway projects.

4. Culvert Rehabilitation. Seven existing culverts are proposed for rehabilitation within the project limits. Three are located under the roadway prism on US Route 101 and four are located on Route 200 (Figure 6, Culvert Location Map). Proposed work includes removing and/or replacing existing structures at the inlet or outlet, i.e., steel flared end sections, headwalls, endwalls and repair or replacement of rock energy dissipation (RED) systems. The purpose of the rehabilitation is to insure the culverts adequately carry surface water runoff beneath the realigned roadways. If the culverts are not rehabilitated, normal drainage flows would lead to soil erosion and could ultimately jeopardize the stability of the roadway prism by causing slipouts and/or result in flows crossing the roadway. The Hydraulics Report prepared for the project recommends the following work be performed:

- ◆ Location 1, Route 200, KP 0.49 (PM 0.31). Place RED at outlet;
- ◆ Location 2, Route 200, KP 0.69 (PM 0.43). Extend the existing 600mm (24-in.) diameter culvert 13m (43 ft.) at the outlet;
- ◆ Location 3, Route 200, KP 0.67 (PM 0.42). Extend the existing 600mm (24-in.) diameter culvert 13m (43 ft.) at the outlet;
- ◆ Location 4, Route 200, KP 0.80 (PM 0.50). Place a new 600mm (24-in.) diameter, 34m (110-ft.) long culvert. The new culvert will drain into the same channel as the existing culvert. A rock-lined ditch between the existing drainage inlet location and the new one will be constructed to improve drainage. The existing 600mm (24-in.) culvert will be plugged and abandoned.
- ◆ Location 5, US Route 101, KP 144.63 (PM 89.87). Remove and replace the existing headwall and endwall and extend the existing 900mm (36-in.) diameter culvert an additional 38m (125 ft.) at the inlet and 4m (13 ft.) at the outlet.
- ◆ Location 6, US Route 101, KP 144.76 (PM 89.95). Place a new 450mm (18-in.) diameter 44m (144-ft.) long culvert with flared end section at the inlet and outlet. The existing culvert will be plugged and abandoned; and
- ◆ Location 7, US Route 101, KP 145 (PM 90.10). Extend the existing 450mm (18-in.) diameter culvert 2m (6.5 ft.) at the inlet.

All applicable soil erosion and water quality Best Management Practices (BMP's) will be implemented during culvert rehabilitation work. RED placed will be the minimum necessary to control erosion at the culvert outlets.

B. Construction Overview.

The proposed project is estimated to take four seasons to complete and is scheduled to commence in year 2007 with completion in year 2011 (see Construction Schedule below). Work within the river channel may only occur within a four-month period from June 16 through October 14 when the federally-listed Chinook salmon and steelhead trout and state and federally-listed Coho salmon are least likely to be present. Work within the river channel includes the construction of cofferdams, falsework, bridge piers, and footings. The river would be diverted to carry out construction and the proposed methodology is discussed in the Standard Impoundment and Dewatering Methodology section below. Work below ordinary high water could occur between May 1 and June 15 of each year as long as the chance for precipitation is less than thirty percent. In addition, a 3m (10 ft.) buffer would be maintained between the work and the wetted stream channel and erosion control materials would be stock-piled on site for immediate deployment if necessary. All other project construction work outside of the river channel such as the rock slope protection around the bridge abutments may occur throughout the year with no seasonal restriction.

1. Staging Areas/Access Roads. Staging areas on both sides of the river would be used by the contractor to store construction equipment, materials and to access the construction site. The north staging area is 0.68ha (1.68 acre) and the south staging area is 0.9ha (2.22 acre). The edge of the staging areas will be at least 15m (50 ft.) from the channel in order to minimize impacts to the riparian corridor (see Figure 3, Sheet 1, Layout Plan).

The proposed staging area on the south side of the river can be accessed from Wymore Road on the east side of the existing US Route 101 alignment. An unpaved access road from Wymore Road to the staging area already exists that is used by a private residence on the southwest side of the project. This residence is located within the new proposed right of way and would require relocation or removal. Caltrans currently owns this access road and has granted an easement to the property owner for use to enter the property. Both the current northbound and southbound bridges span the existing access road. This road would be widened to allow for the passage of large trucks and equipment.

The staging area on the north side of the river can be accessed from Route 200 and was used in a previous Caltrans project that installed rock slope protection to the northeast quadrant of the bridge for scour protection. The access would require a temporary construction easement from the current property owner and would cut through the property towards the river, turning west to access the proposed staging area. Both the northbound and southbound bridges would span this unpaved access road.

All applicable temporary construction BMP's for staging areas and site access will be implemented in accordance with the Caltrans Storm Water Quality Handbooks. Those BMP's may include but are not limited to: silt fences, fiber rolls, straw bales, sandbag barriers, check dams, and sediment basins.

2. Surveys/Test Borings. Accurate foundation information for the proposed bridge locations is required prior to completing bridge design. To obtain the information necessary, a structure foundation study, which includes rock/soil material testing, is required.

The proposed tests include drilling a 94mm (3.7-in.) diameter hole, approximately 45m (150-ft.) deep, at each of the four proposed pier locations as well as the two abutment locations, resulting in a total of six drilling locations. Survey borings will require accessing the channel by way of the north bank and south bank access road locations and would be drilled west of the existing bridges, near the location of the new proposed bridges. A 94mm (3.7-in.) core of rock would be removed from the bore and the bore will be back-filled with lean concrete to plug it. The minimum amount of vegetation would be cut or disturbed during this process.

3. Standard Impoundment/De-Watering Methodology. Diversion of the Mad River at the construction site would be required to remove existing piers, construct new piers and place falsework. A temporary dike constructed of water bladders, clean, washed, spawning-size gravel and/or other methods that will not result in notable degraded water quality are proposed for use to divert the flow and maintain dry conditions around the work area. After all water is diverted to avoid entrapping fish, sheet pile cofferdams would be placed into the dry work area. Subsurface flow may percolate into the cofferdam requiring that water be pumped out to maintain dry conditions. Since there will not be any direct connection between the river and cofferdam and the area will be above the low-flow water when the cofferdam is placed, there is no possibility of entrapping fish within the excavation and no need to screen the pump intake to protect fish.

Pumping within the excavations at the various pier footings will be required to maintain a de-watered work area. The effluent will be pumped into a settling basin, constructed either by digging a hole or building a berm around the basin area using native materials. The settling

basin will be located on either the gravel bar above the work area, or outside the river channel. After construction, any residual silt or fine materials within the settling basin will be removed to a disposal site above high water. If the settling basin is within the channel, the gravel will be graded to preclude future impoundment of fish.

C. Construction Schedule.

1. Year One. In the first year of construction, earth fill for the north and south bridge abutment approaches would be placed to raise the new roadway surface elevation to the new bridge elevation. Excavation for the new abutments (beginning and end supports for the bridge) then follows. This work will occur above the high water elevation. All applicable temporary construction BMP's will be implemented in accordance with the Caltrans Storm Water Quality Handbooks. Those BMP's may include but are not limited to: silt fences, fiber rolls, straw bales, sandbag barriers, check dams, and sediment basins.

After the approach fill and abutment excavation is completed, the new southbound bridge would be constructed first and it is anticipated to take two years to complete. During the first year, pile driving for abutment footings and construction of the abutments, construction of cofferdams and the bridge pier footing in the channel, and the construction of two-pier footings upland would occur.

Cofferdams would be placed according to the standard methodology for de-watering, as previously described above, prior to work at the piers that are below ordinary high water. Bridge pilings would be driven into the ground by use of a diesel hydraulic hammer or drill rig. A lined concrete truck washout location will be provided onsite, outside of the channel, pursuant to BMP's in accordance with all applicable permits.

During the summer or early fall the new "scour hole" feature would be installed in the River.

In anticipation of agency permit conditions, it is proposed that all equipment and construction materials will be removed from the channel by October 15th of each year.

2. Year Two. Year Two construction will focus on the southbound bridge superstructure and the realignment of the southbound Central Avenue on-ramp. Falsework would be used. The falsework is a temporary, wooden bridge that would span the wet channel, and is used to form the bridge and hold its superstructure loads during construction. Once the falsework is placed, construction of the new bridges can begin. The falsework would then be removed and any altered gravel bars for construction purposes will be graded to conform to natural gravel bar contours to prevent fish impoundment. Any earthwork that may not have been completed for the bridge approach would be completed at this time and the asphalt concrete pavement for the new bridge would be laid and compacted. Finally, guardrails would be installed and traffic striping would be completed.

The realignment of the southbound Central Avenue on-ramp would be constructed to connect to the existing Silva Road junction located on the northwest side of the river. The general sequence of construction involves traffic control, clearing and grubbing, performing cut and fill, extending culverts and ditches, grade formation, placing base material and asphalt concrete, relocate utility lines, installing lighting and signal system, and placing traffic stripes

and pavement markings. Transition to the existing alignment from the new alignment would result in diversion of traffic and temporary shutdown of the southbound bridge.

3. Year Three. The third year of construction would involve removal of the existing southbound bridge and beginning construction of the new northbound bridge that is proposed to be completed in Year Four. Construction activities for the northbound bridge are consistent with methodologies for construction of the southbound bridge.

Bridge removal for the existing southbound bridge would be performed by placing a debris platform beneath the existing bridge and then removing the superstructure. Explosives will not be used to dismantle the existing bridge and no portion of the bridge will drop into the live channel. The concrete deck surface, girders and remaining superstructure would be removed in sections. All containment for concrete debris and paint removal will be in place before any removal activities occur.

Due to possible future scour concerns, and since the existing concrete footings are fairly shallow, it is proposed to completely remove the existing concrete footing, excluding the piles.

Transition from the existing alignment would result in temporary overnight shutdowns of US Route 101 with detours in place. A Traffic Management Plan (TMP) will address traffic handling operations during construction and a public awareness program will be in place.

4. Year Four. Any superstructure work remaining for the new northbound bridge would be completed as well as the asphalt concrete paving, guardrail installation and traffic striping. The traffic would be moved over to the new bridge and removal of the existing northbound bridge would be performed. The removal of the existing northbound bridge would be accomplished the same way as the southbound bridge. Once the northbound bridge is removed, the water-diverted area of the channel will be graded to conform to the natural gravel bar structure in order to prevent fish impoundment. Lastly, staging areas and access roads will be removed and replanting will occur.

D. Other Alternatives Considered.

1. Alternative 2, East Alternative. Alternative 2 proposes to construct the project on an alignment abutting and paralleling the existing eastern alignment of the bridges. The bridge design would be virtually the same as that described for Alternative 1, the selected alternative. The project cost is estimated to be approximately \$34 million. The Central Avenue on- and off-ramps as well as the Route 200 intersection would also be reconstructed; however, less area would be available to improve geometrics at Route 200 because of existing topography. Construction methodology would be similar to that described for the proposed preferred alternative and would have similar impacts on resources except as noted below.

Construction of the East Alternative is less desirable than the West Alternative for the following reasons:

- ◆ Approximately one-tenth acre of additional right of way of agricultural land would be required;
- ◆ Less area would be available to reconstruct the Central Ave./Route 200 intersection in less desirable geometric improvements;
- ◆ Traffic delays would be increased during construction at the Central Avenue off-ramp due to the inflexibility of working within existing site constrictions; and
- ◆ Noise levels for residents would be increased both temporarily and permanently because the bridges would be closer to homes.

A potential benefit resulting from an eastern alignment is that the existing residence located on the southwest bank of the river might not require relocation or removal. Project impacts to this residence are discussed in the Housing/Population section of the Environmental Evaluation, Chapter V.

2. Alternative 3, No Build. The No Build Alternative would result in continued deterioration of the bridge structures. Scouring would continue to undermine and expose bridge foundations contributing to unstable bridge conditions with possible collapsing of the structures. A No Build Alternative would not improve operational conditions for existing or projected future traffic and, most likely, the collision rate would continue to be in excess of statewide-expected rates for similar facilities.

3. Alternatives Considered But Rejected

- ◆ An alternative to build a temporary structure to carry traffic during construction to allow replacement of the bridges on the existing alignment was considered but rejected due to the costs of constructing four bridges. Existing traffic volumes dictate four lanes are necessary to handle peak traffic for this segment of highway. In addition, any structure, whether temporary or not, must still be constructed to meet all design criteria for public safety purposes. As the current project cost is approximately \$35.5 million, it can be anticipated the construction of additional structure(s) to handle existing traffic volumes would increase the total project costs beyond feasibility. The expenditure of funds to construct structures that would be removed four to five years later also was a significant consideration.

Many considerations in addition to costs were considered in evaluating this alternative. In addition to the impacts discussed above, construction of temporary bridges would result in greater impacts to the natural and human environment. Impacts to river hydrology, biology, water quality, and agricultural resources would be at least twice as great than the proposed project with the construction and removal of temporary structures.

- ◆ Rerouting traffic onto one bridge to accommodate replacement on existing alignment was considered but rejected because one open lane in each direction would not accommodate peak traffic loads and would result in unacceptable traffic queues on the highway. Construction of the Central Avenue/Route 200 intersection would also exacerbate delays in the northbound movement. Rerouting would be required during the four-year construction schedule.

- ◆ An alternative to leave one of the existing bridges in place after construction to be used for pedestrian/equestrian/bicycle use was considered but rejected due to the high costs associated with upgrading the bridges for scour and seismic purposes. The bridge would require these improvements regardless of whether it carried motorized traffic or not. In response to local concerns regarding public access over the bridges, the proposed project is designed to accommodate both bicycle and multi-purpose accessway.
- ◆ Signalization of the northbound Central Avenue off-ramp intersection with Route 200 was considered to address the high collision rate. Signalization would most likely require increasing the length of the off-ramp deceleration lane and other off-ramp modifications to accommodate traffic at a cost of between \$3 - \$6 million. Signalization could result in vehicles being backed up onto the main highway and would require extensive redesign of the northbound bridge segment resulting in project delays. Headquarters Project Development Coordinator and District 1 Deputy District Director, Program Project Management, have concurred the intersection will be monitored and, if necessary, take corrective action that could result in the initiation of a separate project (May 8, 2003 Issue Paper).

V. AFFECTED ENVIRONMENT/ENVIRONMENTAL EVALUATION

This chapter describes the existing environmental setting in relation to the Mad River Bridges that may be directly, indirectly, or cumulatively affected by the proposed project. Included in this chapter are a listing and a description of important resources and characteristics found within the project area.

This chapter also includes a narrative discussion of potential impacts and mitigation measures to reduce impacts to less than significant levels. A multi-disciplinary procedure was used to identify, assess, and document the effects of the preferred alternative, (Alternative 1), the East Alternative (Alternative 2), and the No-Build Alternative on the physical, biological and socio-economic environments. This chapter also discusses measures to avoid, offset, or minimize project effects. These measures are also included in Chapter VI, Environmental Commitments and Mitigation.

The following evaluation addresses the proposed selected alternative (Alternative 1, West Alternative). Impacts resulting from construction of Alternative 2, East Alternative, would be the same except where directly noted and as discussed in Chapter IV, Section C-1, Alternative 2, East Alternative.

Except where stated, the No-Build Alternative would not result in any new environmental impacts. As with the proposed project, only the proposed “action” of the No-Build Alternative is evaluated for potential environmental effects. For the purposes of this environmental document, the No-Build Alternative would primarily involve periodic bridge inspections, routine repair and maintenance work and continuing efforts to offset scour with the potential for eventual load restrictions and possibly bridge closure. In a seismic event, the undermined and scoured pier footings could lead to bridge failure. It could also include continuing efforts to attempt to alleviate the high collision rate.

The following evaluation discusses the physical, biological, social and economic factors that might be affected by the proposed project based upon the CEQA Environmental Significance Checklist. The checklist follows this discussion. Background studies performed in conjunction with the project support the findings discussed below. A “No Impact” answer in the last column of the checklist reflects this determination and will not be further discussed. The words “significant” and “significance” used throughout the following evaluation and checklist are related to CEQA impacts.

On construction projects, Caltrans must follow a number of procedures and practices as well as adhere to regulations that reduce the impact of a construction project on the environment. These practices, procedures, and anticipated permit requirements are collectively called design features in this document. Within this chapter, there are brief descriptions of the design features that will be incorporated into the proposed project by resource area. Further details about BMP’s can be found in some of the studies and documents listed below:

- ◆ Biological Assessment for FESA Section 7 Consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries for listed fish species
- ◆ Cultural Resources Study
- ◆ Floodplain and Hydraulic Recommendation Report
- ◆ Geology and Soils Report
- ◆ Historic Architectural Survey Report
- ◆ Initial Site Assessment/Hazardous Waste Report
- ◆ Noise Report
- ◆ Right of Way/Utilities Preliminary Report
- ◆ Visual Assessment and Scenic Resource Report

These reports are available for public review at the Caltrans District 1 Office, Environmental Management Branch, 1656 Union Street, CA 95501. To set up an appointment, call Lena Ashley at (707) 445-6416.

Environmental Evaluation

A. AESTHETICS

Setting. The Visual Assessment Report (VAR) identifies the Mad River as a scenic resource; however, the river is not included in either federal or state designated wild and scenic rivers systems. US Route 101 and Route 200 are not designated as scenic highways within the project vicinity. The northbound bridge was constructed in 1929 and the southbound bridge in 1958 and, consequently, were designed for their respective time periods and are dissimilar in appearance. Major visual differences between the companion bridges consist of the overhead truss structure on the northbound bridge, varying guardrail design, and a five-foot height variation on the southbound over the northbound bridge. The overhead truss structure obstructs views to the east and southeast when traveling on the southbound bridge and in all directions when travelling on the northbound bridge. The five-foot height increase of the southbound bridge over the northbound bridge substantially obstructs the western view of the river when travelling north. The varying guardrails also add to the visual complexity of the bridges.

Design Features and Project Effects.

◆ **Bridge Design.** The proposed bridge design will improve views to the river and to surrounding lands and will provide a visual consistency between the bridges. The bridges are of mirror-image design and will eliminate the visual complexity resulting from bridge height differences, the overhead truss, and varying guardrails. Design, color, materials used, and guardrailing will be consistent on both bridges. Bridge decks will be the same height to improve sight visibility to northbound travelers. The northbound bridge structure supports an outer, separated eight-foot wide multi-purpose walkway to non-motorists, along with a 3m (10-ft.) wide outside shoulder that may be used for a bicycle lane. These two design features provide a new opportunity for non-motorized users to enjoy river views eastward. Lighting would also be installed on the bridge.

◆ **Bridge Railing.** Bridge railing on the northbound bridge has been designed to maximize views upriver (east) for both motorized and non-motorized users (Figure 7, East View). Three types of transportation users will use this bridge: motorists in the travel lanes, bicyclists in the 3m (10-ft.) wide shoulder and pedestrians/other non-motorized users, including bicyclists, in the outer eight-foot wide multi-purpose walkway. A Type 732 concrete barrier is proposed on the west edge of the inside shoulder. Since this barrier is “inside” adjacent to the southbound bridge, it does not obstruct any views of the river. A Type 732 concrete barrier is proposed to separate the roadway lanes and shoulder from the pedestrian multi-purpose walkway. Lastly, a pedestrian safety “picket-style” metal railing is proposed for the outer (eastern-most) edge of the multi-purpose walkway and can be painted to blend in with the surrounding landscape. Due to this additional metal railing or fencing, motorist views eastward may be slightly impacted.

Bridge railing on the west side of the southbound structure consists of a Type ST205 metal rail barrier (Figure 6, West View). A Type 732 concrete barrier is proposed for the inside barrier similar to that inside barrier proposed for the northbound bridge.

◆ **Lighting and Signage at the Central Avenue/Route 200 Intersection.** The northbound Central Avenue off-ramp and off-ramp intersection with Route 200 is located northeast of the river. Proposed reconstruction of this off-ramp and intersection improvement does not raise any aesthetic issues as the area is paved with only existing ruderal vegetation. Lighting and signage will be installed at the intersection to improve visibility and safety. This lighting will have no impact to scenic resources since the intersection is northeast of the river and the lighting will be directed to the pavement. The sign will be an arterial street sign.

◆ **Replanting and Revegetation.** Construction of the bridges on the new alignment, including the realignment of the southbound Central Avenue on-ramp, will impact existing trees and vegetation on the banks of the river and adjacent to the existing on-ramp location. A total of fourteen mature Monterey pine trees (80-100 ft. high) stand adjacent to the southbound Central Avenue on-ramp requiring removal to accommodate the realignment. In addition, realignment of the bridges will also require the removal of trees and understory vegetation along the west side of the southbound bridge on both the north and south banks. This area totals approximately .24ha (.59acre). The design plans would incorporate the VAR recommendation to replace the 14 Monterey pine trees requiring removal adjacent to the

southbound Central Avenue on-ramp. The trees would be replaced with a native species such as Bishop Pines (*Pinus muricata*) that will mature to the same mass as the existing pines. Replanting will minimize long-term visual impacts resulting from the loss of the trees.

The VAR states that there will be no significant visual impacts resulting from the removal of the riparian trees and understory vegetation along the western side of the existing southbound bridge on the north and south banks. This conclusion is based upon the presence of dense vegetation that exists all along both banks of the river and that only the minimum amount of vegetation necessary to accommodate the bridge footprint will be removed. The area affected by the bridge realignment totals approximately .24ha (.59 acre). After removal of the existing bridges, approximately .13ha (.32-acre) will be available for replanting and revegetation for a total net loss of .11ha (.29-acre) of vegetation at the project site. Standard Specifications requiring replanting and revegetation of the affected areas will be included in the construction contract. Other mitigation to offset the loss of the .11ha (.29-acre) of riverbank vegetation may be required by permitting agencies and is more fully discussed in the Biology section below in this chapter.

◆ **Billboard.** Construction of the bridges on the new alignment will require removal of one billboard. The billboard to be removed is located on the northwest bank of the Mad River immediately south of the southbound onramp. This billboard would not be relocated elsewhere along Route 101. This would result in a beneficial aesthetic effect and open up views for the southbound motorists.

B. AGRICULTURE AND LAND USE

Agriculture and Land Use are discussed together since the bridges are situated over lands used in agricultural production as pasturelands. This section also discusses project consistency with federal and state laws protecting farmlands and Local Coastal Plan policies.

The criteria for determining the significance of this resource is whether the strip takings of four privately-held parcels in agricultural use would adversely impact that use so as to directly, indirectly, or cumulatively cause its conversion to non-agricultural uses, resulting in the general decline of agricultural resources in the county. The County has policies in place emphasizing preservation of agricultural lands and has adopted a resolution that there should be no net loss of agricultural revenue for farmers.

Setting. US Census of Agriculture (1997) information indicates approximately 263,047ha (650,000 acres), or more than 25 percent of the total acreage in Humboldt County, was in agricultural use (excluding timber) in 1982. The county has experienced the loss of 1,214ha to 2,023ha (3,000 to 5,000 acres) of farmlands annually since 1964 due to conversion to non-agricultural uses.

Dairy farming and milk production is the largest industry in Humboldt County, with nursery, livestock, and field crop production following. Humboldt County dairies produce about one percent of the state's total supply of milk. California is ranked number 1 for milk production in the United States.

The soils within the project limits include Prime agricultural soils, as identified in the Soils of Western Humboldt County, California, November 1965. Soils in the project vicinity are mapped as Ferndale 2 with and a very small portion mapped as Ferndale 13. The Ferndale series are generally characterized as having medium texture, well-draining soils of recent alluvial origin. The Ferndale 2 soils have a high nutrient capacity and a favorable moisture holding capacity. The soils are rated 100 in the Storie Index, which is categorized as prime agricultural soils. The Ferndale 13 soils are located along the banks of the river and are of mixed textural composition. Most of these areas are subject to frequent annual flooding and the soil material ranges from deep to shallow, and normally hummocky or channeled. This soil type is separate from riverwash because of the agricultural potential where flooding can be controlled. The Storie Index rates this soil as Variable.

Agricultural Regulatory Setting.

At the federal level, the provisions of the US Farmland Protection Policy Act of 1984 (FPPA) require agencies to address the effects of projects on farmlands and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) oversees implementation of the FPPA. It requires that an inventory of farmlands be prepared which identifies prime, unique, and other farmland of statewide or local importance that would be affected by the project. The NRCS system of classification generally provides an indication of how suitable the soils are for agricultural use. For each alternative, a Farmland Conversion Impact Rating Form must be completed in consultation with the NRCS staff. These forms provide the basis for assessing project impacts on farmland relative to federally established criteria. The NRCS is in the process of doing comprehensive mapping and soils classification for Humboldt County, among other areas. Since the local mapping is incomplete in Humboldt County, coordination with the NRCS staff is very limited and the information is not available to fill out the Conversion Impact Rating Form. Because the NRCS soil data is not available, another source of soil data was used for the analysis of this project. The soils within the project limits include prime agricultural soils, as identified in the only published soils classifying system to date, the Soils of Western Humboldt County, California, a cooperative project between the Department of Soils and Plant Nutrition, U.C. Davis, and the County of Humboldt, California.

At the state level, the California Land Conservation Act (also known as the Williamson Act) of 1965 was enacted to minimize the conversion of farmlands to urban uses. This act allows local governments to designate farmlands as agricultural preserves. None of the affected parcels proposed for acquisition for the project are currently under contract pursuant to the Williamson Act.

Land Use Setting/Local Coastal Plan. Land uses adjacent to the project site are agricultural and residential. River uses are recreational and commercial. Primary recreational use includes fishing and boating. Commercial use near the project site involves gravel-mining operations upriver, just south of the City of Blue Lake. Six partial acquisition parcels are required for the proposed new right of way. Four parcels are zoned agricultural, the fifth is zoned partially agricultural and natural resources and the sixth is zoned natural resources. The natural resource zoning applies to those parcels because they are submerged lands in the Mad River. Although the fifth parcel is partially zoned agricultural, current mapping indicates the Mad River covers it.

The proposed project is located within the coastal zone and is subject to the Local Coastal Plan (LCP) adopted as part of the Humboldt County General Plan. The LCP identifies land use issues and guidelines by which development will be evaluated within the coastal zone.

The new bridges will span the Mad River and a riparian corridor along the north and south banks of the river. The LCP Natural Resources Protection Policies and Standards provide that environmentally sensitive habitat areas, including riparian corridors, shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. The policy also states that development in areas adjacent to environmentally-sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

Design Features and Project Effects. Bridge realignment requires new right of way over four parcels in agricultural use and two parcels that are covered by the Mad River. Table 5 below shows the four affected agricultural parcels (two separate parcels are under one ownership and are identified as Parcels 2a (west) and 2b (east)), total parcel size, the area of right of way needed, and county zoning. The project will affect approximately 3.6 percent of the 38.5ha (94.60 acres) of agricultural lands immediately adjacent to the project site. The percentage of loss on a countywide basis is minimal.

The proposed new right of way will consist roughly of a linear strip of land running parallel and adjacent to the existing right of way west of the southbound structure. The total amount of right of way to be acquired is 1.95 ha (4.83 acres) of which, approximately 1.41 ha (3.4 acres) is in agricultural use. Six partial acquisition-parcels are required for the proposed right of way. Partial acquisition of the four agricultural parcels are referred to as “strip takings” through fenced pastureland and are shown in Table 5 below. These pasturelands would be affected with the actual realignment. Although the US Route 101/Route 200 intersection may be further improved in the future (see Project Alternatives discussion), as proposed, the project results in a minor realignment of an existing four-lane highway and does not include any future expansion of uses that could result in further conversion of farmland to non-agricultural uses.

Table 5 Affected Agricultural Lands

Parcel	Total Parcel Size	Proposed R/W Acquisition	Zoning*
Parcel 1	22ha (54 ac.)	0.639ha (1.58 ac.)	Ag/Ex/60-ac min**
Parcel 2a (west)	2.79ha (6.70 ac.)	0.72ha (1.7 ac.)	Pr/Ag/Ex/60-ac min***
Parcel 2b (east)	5.06ha (12.50ac)	0.008 ha (0.02 ac.)	Pr/Ag/Ex/60-ac min
Parcel 3	8.66ha (21.40ac.)	0.039ha (0.10 ac.)	Pr/Ag/Ex/60-ac min
Total	38.5ha (94.60 ac.)	1.41ha (3.4 ac.)	

*Humboldt County Zone Phone Automated Information

**Agriculture/Exclusive/60-acre minimum parcel size

***Prime/Agriculture/Exclusive/60-acre-minimum parcel size

Realignment of the bridges west may result in excess right of way on the east side of the bridges that is used as the existing right of way. This area totals approximately 0.64ha (1.6 acres) in size. The same property owners are affected by right of way takes for both Alternative 1 and Alternative 2. If this portion of right of way returns to private ownership, it may be possible to return the lands to agricultural use after project completion. In this case, the net loss of agricultural lands would be reduced to 0.44ha (1.1 acre) instead of 1.41ha (3.4 acres). The 0.44ha (1.1-acre) loss of agricultural lands represents approximately one percent of the total 38.5ha (94.6 acres) of agricultural lands adjacent to the bridges. To further mitigate for the loss of agricultural lands to a less than significant level, the contribution of funds to a land trust approximately equal to the market value of agricultural lands displaced shall be made. These funds can be made available to assist in the preservation of agricultural lands. No other mitigation is proposed.

One existing single-family residence, currently used as rental housing, is located within the project limits and is situated on the southwest bank of the river. This residence would be proposed to be removed or relocated to accommodate the realignment. Six other residences are located near the project site; however, none of these homes are within the new proposed right of way and will not require relocation.

Construction of Alternative 2, the eastern realignment, would require one-tenth additional acre of agricultural land over the selected western realignment. Alternative 2 presents a negligible increase of impacts to agricultural lands over the preferred west alternative. If Alternative 2 were constructed, additional mitigation to offset the one-tenth acre would be provided. However, Alternative 2 would not require the removal/relocation of the single-family residence located on the southwest bank of the river.

Project design features that address LCP resource protection policies are discussed in the Aesthetics and Biology/Water Quality sections within this chapter. Since the project is a realignment of the existing highway and spans the river at a right angle, the existing bridges are sited to have the least impact to the riparian corridor. The Aesthetics section more fully discusses project siting and design features to minimize impacts to riparian corridor resources. The Biology/Water Quality section discusses design features to minimize project impacts to environmentally sensitive habitat areas. Chapter VI, Environmental Commitments/Mitigation discusses project features that reduce project impacts to these resources to less than significant levels.

C. AIR QUALITY

Setting. The Federal Clean Air Act includes National Air Quality Standards for six air pollutants, which must not be exceeded more than once per year. In California, the California Air Resources Board and the regional Air Quality Management Districts (AQMD) and Air Pollution Control Districts implement both Federal and State air quality regulations. The Mad River Bridges are located within the North Coastal Unified Air Quality Management District, which includes Del Norte, Humboldt, Trinity, Mendocino and northern Sonoma Counties. This AQMD is in attainment for all Federal and State pollutants except airborne particulate matter, PM¹⁰.

Design Features and Project Effects. This type of project will not change the capacity or composition of the traffic. These “neutral” projects due to their nature will not result in any long term adverse air quality impacts or cause an increase in PM¹⁰ emissions. Construction of the project will result in the generation of suspended particulate matter. The amount of dust generated will result in an impact, which will be temporary, local, and limited to areas of construction. Temporary impacts from dust during construction are regulated in accordance with Section 7-1.01P (Air Pollution Control) and Section 10.1 (Dust Control) of the current Caltrans’ Standard Specifications. These provisions require the contractor to comply with all Unified Air Pollution Control District and other local jurisdictions’ rules, regulations, ordinances and statutes. Therefore, this project will not result in a substantial adverse air quality impact due to the BMP measures taken during construction to reduce the impact.

D. BIOLOGY/WATER QUALITY

Environmental Setting. The Mad River originates in Trinity County and flows through Humboldt County into the Pacific Ocean. The bridges cross the river two miles inland from the ocean. The river and its reaches are a migratory and spawning corridor for three anadromous fish species (fish whose life cycles include both fresh and salt water) listed as threatened under the Federal Endangered Species Act (FESA) by the NOAA Fisheries: Coho salmon, Chinook salmon and steelhead trout. In addition, the Coho salmon is also listed as threatened under the California Endangered Species Act.

The banks of the river support alders and juvenile willow trees as well as other riparian vegetation consisting of Water Birch, Coyote brush, Himalayan blackberry, sedge, horsetail, Plantago, yarrow, sword fern, hemlock, fennel, Salal, velvet grasses and ruderal grasses. Just beyond the riparian corridor is pastureland. Non-special status wildlife species common throughout the project vicinity include deer, songbirds, and small mammals such as skunks, raccoons, and foxes. The bridge structures are used as nesting sites for swallows.

Sensitive habitats and/or species within the project limits include:

- ◆ **Wetlands.** The wetlands within the project area characterized as “emergent wetlands” are located at the culvert inlet and outlet structures and immediate vicinities and consist primarily of cattails. There is approximately 0.056ha (0.14 acres) of jurisdictional wetlands present within the project study limits.
- ◆ **Coastal Wetlands.** The banks of the Mad River consist of a riparian forest which qualifies as a wetland under the California Coastal Act. It does not meet the criteria of the Corps jurisdictional wetland as it does not contain the three necessary parameters of hydrology, wetland (hydrophytic) vegetation and saturated (hydric) soils. Under the California Coastal Act, if one or more of these attributes are present it is considered a wetland.
- ◆ **Federally-Listed Species.** In addition to the three anadromous salmonids, the proposed project is also within the range of three additional listed species including marbled murrelet, western snowy plover, and northern spotted owl. However, no suitable habitat for these species is present within the project limits.
- ◆ **State-Listed Species.** The Coho salmon is listed as a threatened species pursuant to the California Endangered Species Act (CESA).

- ◆ Wildlife Species of Concern. The California Department of Fish and Game includes the potential for the following special status species at the project site: coastal cutthroat trout, southern torrent salamander, northern red-legged frog, foothill yellow-legged frog, and northwestern pond turtle. No known occurrence of these species with the exception of cutthroat trout are within the project limits.
- ◆ Plant Species of Concern. There is no known state and/or federally listed rare, threatened or endangered plants occurring in the vicinity of the project.

Project Features/Project Impacts. As discussed in the project description, there are numerous construction methods and features proposed that would minimize potential impacts to listed fish and would minimize potential for degradation or impacts to water quality and sensitive habitats.

Wetland Impacts. Construction of the culverts will result in unavoidable, permanent impacts to 0.02 ha (0.05 acres) of emergent wetland. An additional 0.0012ha (0.003 acres) of wetlands will be temporarily affected. This minor amount of disturbance is not considered significant. Caltrans proposes to mitigate these impacts at a 3:1 ratio for permanent impacts and 1:1 ratio for temporary impacts.

On-site mitigation consisting of creating additional wetland is proposed. The wetland will be created by enlarging an existing drainage ditch which drains ephemeral flows on the northwest bank and regrading the channel to a more natural configuration including a meander and a slight basin which would retain more water over time and allow more area to become saturated. Riparian vegetation would be supported along the new channel. This created wetland is expected to result in the same habitat function as the wetland to be impacted by the project. To create this reconfigured channel would impact an additional 0.004ha (0.01 acre) of jurisdictional wetland. This conceptual mitigation plan is expected to result in creating approximately 0.12ha (0.30 acres) of riparian (1 parameter coastal wetland) and wetland habitat. A further 0.04 ha (0.10 acres) of riparian habitat would be restored on the south bank when the existing northbound bridge structure is removed.

Riparian and Coastal Wetland Impacts. Realignment of the bridges to the west will require the removal of 0.137ha (0.34 acres) of riparian forest and 0.064ha (0.16 acres) of other coastal wetlands (herbaceous vegetation). In addition, 0.072ha (0.18 acres) of riparian forest would be temporarily affected. To create the reconfigured channel, an additional 0.048ha (0.12 acres) of coastal wetlands would be temporarily impacted.

Clearing and grubbing activities will take place in the fall and winter to minimize the potential for affecting actively nesting birds. The bridges will have exclusionary netting placed in advance of the nesting season for the swallows and the netting will be maintained throughout construction.

To minimize removal of riparian vegetation other than that required for the bridge construction, construction staging areas on both the north and south banks are located 15m (50 ft.) back from the edge of the bank outside the riparian corridor. In addition, both proposed construction access roads are located outside the riparian corridor. Excluding the tree removal needed to construct the new bridges, the overhanging canopy of riparian

vegetation along the river will not be disturbed and shade on the water from riparian plants will not be permanently altered.

Both onsite and offsite mitigation is proposed for this project. Caltrans proposes to mitigate permanent impacts at a 3:1 ratio and temporary impacts at a 1:1 ratio. Approximately 0.16ha (0.40 acres) of riparian/wetland restoration can be accomplished onsite, adjacent to the river within the footprint of the existing northbound bridge to be demolished (includes the 0.30 acres of habitat discussed above by reconfiguring the drainage channel). An additional 0.04ha (0.10 acre) of riparian habitat can be restored on the south bank of the existing northbound bridge, which will be demolished. The restored riparian habitat is expected to result in the same quality of habitat to be affected.

An additional 0.56ha (1.4 acres) of riparian/wetland mitigation will be constructed off-site in McKinleyville, approximately 2.4km (1.5 miles) north of the project. The site is owned by the McKinleyville Services District and Caltrans proposes to enter into a Memorandum of Agreement to create emergent and riparian wetlands for highway mitigation purposes at the site referred to as “Hiller East”. Caltrans proposes to assist in developing four detention basins in upland property, which will attenuate stormwater discharge from city street and residential runoff. With the proposed additional hydrology, soils on site are expected to create a clay pan over time. The site will be planted with wetland and riparian species.

Water Quality Impacts. Temporary direct impacts resulting from construction of the project will require partial diversion of the Mad River over four consecutive construction seasons.

The effluent from dewatering will be pumped into a settling basin, constructed either by digging a hole or building a berm around the basin area using native materials. The settling basin will be located on either the gravel bar above the work area, or outside the river channel. After construction, any residual silt or fine materials within the settling basin will be removed to a disposal site above high water. If the settling basin is within the channel, the gravel will be graded to preclude future impoundment of fish. Water pumped from the work site shall receive appropriate treatment, as required by the Regional Water Quality Control Board, prior to being discharged onto the ground or into the river.

Pile and sheet pile driving vibration impacts and various grading and pumping activities will also temporarily affect the project site. During diversion and pumping, temporary decreases in water quality and alteration of habitat may result from riverbed disturbance and diversion. Filling pools or riffles with gravel, silt discharges smothering benthic organisms, or flooding of previously dry reaches of stream which do not have a developed aquatic food chain or suitable habitat structure would have a short term adverse effect on resident salmonids. Permanent direct impacts are a net increase in river area of approximately 53.8 sq.m (580 sq. ft.) due to a decrease in the size and number of proposed piers over those of the existing piers. Footing extensions are below the riverbed level and do not result in permanent impacts to the available salmonid habitat.

Salmonid Impacts. The bridge structure and footings within the river currently provide a shaded pool-riffle habitat. The proposed project would result in less fill in the river, as there will be fewer in-water piers with the new structures. Construction activity, including diversions and dewatering will alter the pool-riffle habitat present and continuous

construction activity will cause some of the resident fish to leave this portion of the river. Movement of salmonid juveniles into other habitats may cause additional competition with other resident fish for food and habitat and result in additional exposure to predation. Coho adult salmon are not expected to be present during the proposed in-water construction season beginning June 16 and ending on October 14. Coho smolts are likely to have migrated through the project area before any in-water construction but Coho fry may rear in the action area during the in-water construction season. Chinook adult salmon are not expected to be present during the proposed in-water construction season but Chinook juveniles may be present in June during the final stage of their rearing and out-migration period. Steelhead trout adults may be present in the project area at the very end of the in-water construction season and juvenile steelhead are expected in the project area during the entire in-water construction season. The most vulnerable species and life stages will be Coho fry, juvenile steelhead and adult summer-run steelhead. The most numerous life stages will be juveniles, predominantly steelhead. To offset potential impacts to salmonids during installing and removing the water diversion system, a qualified biologist will be onsite to perform fish rescue of any salmonids present in the work area.

Work below ordinary high water before June 16 is necessary to maintain the four-year construction schedule. Work would begin May 1 through October 15 of each year of construction. Work below ordinary high water would occur prior to June 16 only if the chance of precipitation is less than thirty percent. Work that is stopped would resume only if precipitation ceases or the forecast for potential precipitation drops below 30 percent and soils are not saturated as indicated by water pooling and running off the site. In addition, a 3m (10 foot) buffer would be maintained between the work area and the wetted stream channel and erosion control materials would be stockpiled on site for immediate deployment, if necessary.

Project would also result in indirect effects to listed fish including removal of riparian vegetation shading the River, a loss of scour pool habitat associated with removal of the existing bridge piers, and reduction in invertebrate production due to turbidity increases. The existing scour hole from the bridge piers functions as an important adult holding site on the Mad River.

To offset these effects, riparian vegetation will be restored on site and Best Management Practices will be employed to protect water quality. In addition, a new permanent scour feature will be created by placing some large rocks in the River during the first year of construction. Therefore, it is not anticipated that there will be a long-term decrease in quality or quantity of adult salmon habitat.

Consultation on Listed Species. A Biological Assessment (BA) for impacts to anadromous fish was submitted to the NOAA Fisheries. The Biological Assessment requests NOAA concurrence that the proposed project may adversely affect the federally threatened Coho salmon, Chinook salmon, and steelhead trout. The project will have a minimal adverse effect on the Essential Fish Habitat (EFH) for the Coho and Chinook salmon; however, the project is not expected to adversely affect the designated critical habitat for either the Coho or Chinook salmon. On February 2, 2005, NOAA Fisheries issued their biological and conference opinion and Incidental Take Statement and concluded that the proposed project is not likely to jeopardize the continued existence of listed salmonids or destroy or adversely

modify designated and proposed critical habitat. The Department of Fish and Game Section 2080.1 Consistency Determination for the listed Coho salmon was issued on June 14, 2005.

Species of Concern. Coastal cutthroat trout may be present during diversion and dewatering activities. BMP's and the construction window allowing work within the channel during low flow months will minimize impacts to a less than significant level. No other species of concern are expected to be present at the project site.

To minimize the amount and extent of incidental juvenile fish mortality from construction activities, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within the river and to stabilize bare soil over both the short and long term. Caltrans will ensure that applicable BMP's are implemented to minimize adverse effects to water quality, aquatic habitat and listed Pacific salmonids.

Proposed mitigation measures to reduce project impacts to less than significant levels are discussed in Chapter VI, Environmental Commitments/Mitigation.

Negligible differences to these resources would result from the construction of Alternative 2, the east realignment, since this alternative is less than 30m (100 ft.) east from the preferred western realignment and no additional resources are present within the area.

E. CULTURAL AND HISTORIC RESOURCES

Environmental Setting. The project area is located one mile up the Mad River which has a long history of human use associated with the river including Native American and later with European settlers beginning around 1850. The project area has been one of three areas historically used for crossing the Mad River. The project area is within the ethnographic territory of the Wiyot and the general area has high potential for archaeological sites.

Cultural Resources. A Cultural Resources Study was conducted in compliance with state and federal regulations and policies. These regulations and policies require state agencies to identify historic properties within their jurisdiction and to mitigate any adverse effects projects may have on those properties. The study consisted of a records search by the North Coastal Information Center (NCIC) of the California Historical Resources Information System (CHRIS), field surveys of the project area and consultation with the California Office of Historic Preservation as well as the Blue Lake Rancheria and Table Bluff Reservation representatives. Although reference documents indicate a village site is in the vicinity, field surveys conducted October 3-4, 2002 did not result in the observation of any cultural resources within the project limits.

Historic Properties. A Historic Architectural Survey Report (HASR) was prepared to evaluate nine residential structures located near the project site. The HASR is used to identify significant historic and/or architectural resources within the project area. Seven of the structures surveyed consist of late nineteenth century gabled-farm homes and mid-twentieth century homes. Records indicate these seven structures were constructed between 1880 and 1935. The two remaining structures have been determined not to meet the criteria

of being historically significant because one has been so substantially modified and the remaining home does not appear to predate 1957.

The HASR concludes that none of the nine properties appear to meet the criteria for inclusion in the National Register of Historic Places because they lack association with significant historic events or persons, architectural quality or rarity, or integrity. In addition, the bridge structures were determined to be Category 5 structures, not historically significant.

In the event that archaeological materials are encountered during construction activities, Caltrans' policy requires that work be immediately halted in the area of the find until a qualified archaeologist can evaluate it.

F. GEOLOGY/FLOODPLAIN

Setting. The Mad River Bridges are located within the vicinity of the Cascadia Subduction Zone (CSZ) and two local faults, the McKinleyville and Mad River/S (State of California, Department of Transportation, California Seismic Hazard Map 1995 and the State of California, Division of Mines and Geology, Fault Activity Map of California and Adjacent Areas). The two faults are located 0.4 km (0.25 mile) and 2.4 km (1.5 mile) respectively north of the site and both can produce a credible maximum earthquake of 6.75 with a peak acceleration of 0.07g. The CSZ is located approximately 70 km (43.5 miles) west of the site and can produce a credible earthquake of 8.5 with a peak acceleration of 0.02g. No faults are located within the project limits as delineated on the most recent Alquist Priolo Earthquake Zoning Map issued by the State Geologist.

The project site is within recent aged alluvial deposits. These deposits, which are river sediments such as clay and sand, may contain liquefiable soils. Although liquefaction potential for this site is unknown at this time, detailed subsurface investigations to characterize the potential for liquefaction will occur during the design phase of the project.

The area up and downstream of the bridges is currently mapped and designated as a 100-year floodplain by the Federal Emergency Management Agency (FEMA). The new bridges will not increase the 100-year water surface elevation and, therefore, there will be no impact to the base floodplain.

Design Features and Project Effects. The proposed bridges will be designed to withstand the maximum credible seismic event for the project location. The bridges are sized and located so as to not impede or redirect flood flows. Structural foundation design features could include deepened piles that can accommodate extra loads from liquefied soils, pile isolation systems that isolate piles from liquefiable soils or soil densification. Abutments and associated rock slope protection are located above ordinary high water and will not impede or redirect flood flows. The bridge replacement will not expose people or property to geologic or seismic hazards. Public safety will be improved because the new bridges will be constructed to better withstand seismic, scour and flood events.

G. HAZARDS AND HAZARDOUS MATERIALS

Setting. The northbound bridge was sandblasted and painted in 1964 and 1986. Lead-based primer and an alkyd (synthetic resin) green finish coat were applied to the structure. The southbound bridge was sandblasted and painted in 1958, the year of construction, and again in 1964 and 1985. Lead-based primer, aluminum finish coat, vinyl primer and alkyd green finish were applied to this structure. It is anticipated that remnants of lead-based paint and chromium-containing alkyd green paint are present on the bridge steel and as sandblast waste under the bridges. Original construction plans indicate suspected asbestos containing materials (ACM) were used in the construction of both bridges and specify asbestos sheet packing in details for the northbound bridge. Yellow thermoplastic striping is present on the roadway.

Some of the property affected by the proposed project has been used for ranching, and more recently, for automotive repair and for a residence. The existing residential structure proposed for removal/relocation in the selected alternative may contain ACM, lead-based paint and mercury electrical switches. Localized areas in front of the structure are noticeably stained, apparently from solvents or petroleum related to the automotive repair activity. The project location is not listed on the current Hazardous Waste and Substance Site List.

Design Features and Project Effects. A Preliminary Site Investigation (PSI) will be conducted prior to construction. The PSI will include all affected properties proposed for new right of way, and will include information as to the potential for hazardous materials to be present within the horizontal and vertical limits of excavation including excavated quantities. The investigation will take place in two phases. The first phase will determine if contamination is present. If any contamination is present, a second phase of the investigation would determine the extent and severity of the contamination.

All bridge removal and excavation of materials for bridge construction will be temporarily stockpiled at the contractor's staging and work areas to allow for testing. Testing of materials onsite will be conducted and those materials deemed to be hazardous or contaminated wastes will be disposed of properly at an appropriate facility. Contract Special Provisions will require the contractor to disclose the nature of hazardous materials in a site-specific safety plan made available to construction personnel. Results of the PSI may dictate that special provisions also include the methods and procedures to be used during demolition, disposal and new construction. Dust created during pavement grinding will be water dampened and transport vehicles tarped. All notification requirements (and other applicable requirements) of the US Environmental Protection Agency's National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61, Subpart M and/or the North Coast Unified Air Quality Management District will be followed including notifying the AQMD at least 10 days prior to the demolition beginning. Implementation of special provisions and construction methodology will reduce potential impacts to less than significant levels.

Caltrans' project construction Contractor will provide a Health Safety and Work Plan (HSWP) for review and approval by Caltrans. This Plan will describe how the Contractor will address the legal requirements that are part of the contract, including: provisions for

training of State personnel and employees working on the project; safe demolition of the existing bridge members containing lead-based paint; safe excavation and stockpiling of soils; sampling and laboratory testing of soils to determine types and concentrations of contaminants; monitoring and sampling of air quality during excavation or demolition activities; and transportation and disposal of contaminated or hazardous materials.

The HSWP shall include a map indicating areas such as the exclusion zones, contaminant reduction zones, and clear zones. In addition, it will include an air-monitoring plan; spill plan, site clean up procedures, and physical barrier requirements in accordance with California Code of Regulations (CCR), Title 8. The HSWP shall be approved and signed by a Certified Industrial Hygienist registered in the State of California and by a Civil Engineer registered in the State of California.

The decontamination area shall be located outside of the exclusion zone. Water from decontamination procedures shall be collected and disposed of at an appropriate disposal site by the Contractor. Non-reusable protective equipment, once used by any personnel, including State personnel, shall be collected and disposed of at an appropriate disposal site by the Contractor. Temporary 1.8-meter chain link security fencing shall be installed to surround and secure the exclusion zone.

All personnel working in the exclusion zone, including State personnel shall complete a CAL-OSHA 40-hour safety-training program that meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified. The Contractor shall provide the training and shall provide a certification of completion of the Safety Training Program to all personnel.

Caltrans will require its Contractor to provide written notification to the Northcoast Unified Air Quality Management District in Eureka, at least 10 days prior to the beginning of bridge demolition.

Excavated soils will be temporarily stockpiled at the contractor's staging and work area for sampling and lab testing, to quantify the concentration of lead or any other hazardous substances. Any excavated soils found to be contaminated will be stockpiled for up to 90, 180, or 270 days, the period depending on the quantity of excavated soil that is classified as contaminated or hazardous, and depending on the distance to the class of disposal site appropriate to any concentration of contaminants indicated by lab results, as provided in Title 20, CCR. Section 66262.34. Dismantled bridge members containing lead-based paint will be temporarily stockpiled at the Contractor's staging and work area prior to disposal at an appropriately permitted facility.

The Contractor will select the specific disposal facilities appropriate to the type and the concentration of contaminants.

The probable closest Class II disposal site for soils contaminated above State Soluble Threshold Limit Concentration (STLC) levels is Altamont Landfill Waste Management, Inc. at 10840 Altamont Pass Rd., Livermore, CA 94550, (925) 455-7301, approximately 320 miles south of the project site.

The probable closest Class 1 disposal site for soils contaminated above Federal Toxicity Characteristic Leaching Procedure (TCLP) levels is Kettleman Hill Waste Management, Inc., at 35251 Old Skyline Rd., Kettleman City, CA 93239, (866) 386-6160, approximately 490 miles south of the project site.

The Contractor will be required by Caltrans and by the disposal site to provide laboratory test results for stockpiled soils, the pre-construction *in situ* sampling and laboratory results being considered not representative of the material that is actually excavated.

Sampling interval will be one set of samples for each 50 to 300 cubic yards, the number of cubic yards for each sampling dependent upon the total volume of excavation in areas of potential contamination. A minimum of five sets of samples will be collected.

The lab analysis test methods required for disposal site acceptance of soils will be determined by the disposal site themselves. The test methods will probably be as follows:

- ◆ Metals scan (“CAM 17”) – EPA Method 6010, to profile the samples for the entire range of regulated metals.
- ◆ Waste Extraction Test (WET), extraction and analysis for Soluble Threshold Limit Concentration (STLC) – EPA 7000 series.
- ◆ Toxicity Characteristic Leaching Procedure, EPA 1311 (TCLP), extraction and analysis – EPA Method 6010 for metals.

Transportation of contaminated material to disposal sites will be by tractor/trailer using appropriate measures for dust control, under hazardous waste manifest with identification number. No impacts on transportation are expected from the removal of soils excavated for this project.

All notification requirements (and other applicable requirements) of the U.S. Environmental Protection Agency’s National Emission Standards for Hazardous Air Pollutants (NESHGAP) 40 CFR Part 61, Subpart M and/or the North Coast Unified Air Quality Management District will be followed.

H. HYDROLOGY

Setting. Natural hydrological processes and commercially generated gravel extraction operations have contributed to the scoured conditions in the riverbed resulting in the exposure of bridge piers and foundations. The Caltrans 1993 Bridge Report for the northbound bridge indicates a 4.5m (15-ft.) drop in riverbed elevation since bridge construction in 1929 and a 1.8m (6-ft.) drop in riverbed elevation under the southbound bridge since construction in 1958.

A number of existing culverts carry surface drainage flows underneath the roadway system within the project limits. Seven of these culverts are proposed for rehabilitation (Figure 6, Culvert Location Map). Three are located under the roadway prism on US Route 101 and four are located on Route 200.

Design Features and Project Effects. The proposed bridge design reduces piers for each bridge from four sets to three sets resulting in fewer impediments to natural river flow. Project features to minimize impacts to water quality and hydrology are discussed in the Dewatering Methodology found in Chapter IV, Section B-3. Temporary impacts are discussed in this chapter within the Biology/Water Quality section. After project completion, the affected riverbed areas will be returned to preconstruction hydrological contours. Construction methodology and the implementation of BMP's will reduce impacts to less than significant levels and are found in Chapter VI, Environmental Commitments/Mitigation.

Culvert work proposed is necessary to adequately re-route and carry surface water flows underneath the roadway prism. All applicable temporary construction BMP's will be implemented during culvert rehabilitation work. Proposed culvert work is not expected to significantly impact hydrology at the site.

I. NOISE

Setting. Caltrans uses federal guidelines for assessing traffic noise. These guidelines identify decibel thresholds for various land use or activities for purposes of assessing noise impacts. For example, the guidelines define the optimal threshold for residential areas as Leq 67 dBA that is measured in the primary outdoor use area for a residential parcel, e.g., the backyard or patio. The thresholds, known as Noise Abatement Criteria (NAC) are based upon the noise level of the noisiest hour average (peak hour) in a 24-hour period. The NAC uses a scale known as "Equivalent Noise" or Leq. Leq is the average "A-weighted noise level" (dBA) during a given measurement period. The A-weighted factor reflects the fact that human hearing is less sensitive to low frequencies and extreme high frequencies than to frequencies in the mid-range. The Leq scale is used because most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency added together to generate the sound.

The federal guidelines define traffic noise impacts as "impacts, which occur when the predicted traffic noise levels approach or exceed the noise abatement criteria, or when the predicted traffic noise levels substantially exceed the existing noise levels." Caltrans currently defines 66 dBA Leq as "approaching" NAC of 67 dBA Leq for identifying potential significant impacts to sensitive receptors which would include such uses as residential areas, parks, churches, hospitals, schools and libraries.

The Noise Study prepared for the proposed project included seven residences located in close proximity to the project site (Figure 7, Sensitive Noise Receptors). Two residences, "R6" and "R7", have driveway access off of Wymore Road. Wymore Road is proposed as the southerly access road to the construction staging area on the southwest quadrant of the project site. Residence "R6" is set back approximately 46m (150 ft.) from the road and Residence "R7" is set back approximately 61m (200 ft.) from the road. In linear distance, Residence "R6" is approximately 0.3 km (0.19 mile) from the bridges and Residence "R7" is approximately 0.2 km (0.13 mile) from the bridges.

Residences "R2", "R3", and "R4" have driveway access off of Route 200 (North Bank Road). All three residences are set back approximately 55m (180 ft.) from the road. In

addition, these three residences are approximately 170m (560 ft.) from the Central Avenue/Route 200 intersection. In linear distance from the bridges, Residence “R2” is 0.64 km (0.4 mile), Residence “R3” is 0.54 km (0.34 mile), and Residence “R4” is 0.51 km (0.32 mile) distant.

The residence on Central Avenue, “R-1”, is located between the southbound mainline segment and northbound Central Avenue. This residence is about 106m (350 ft.) north of the northern extent of the project limits and about 1.2 km (0.75 mile) from the bridges. The remaining residence, “R5”, would be removed or relocated to accommodate the alignment for the proposed preferred alternative.

Project Features and Project Effects. Based on roadway geometrics of the proposed project and the anticipated future traffic volumes, traffic noise levels were calculated with and without the proposed project using the Sound-32 traffic model. This model takes into consideration such factors as the physical characteristics of how sound travels, atmospheric conditions, potential for sound absorption based on whether the surrounding area contains “hard” or “soft” surfaces, the presence of obstacles and barriers that could deflect or absorb sound, and the potential for the sound to be reflected.

The model uses increased traffic volumes for the year 2025 projections because although the project would not increase capacity and, therefore, construction of either alternative would not directly result in an increase in traffic volume, traffic volumes would be expected to increase as a result of increased population growth with or without the project.

Table 6 shows the results of the traffic noise modeling for the existing noise level and the projections the year 2025 for each alternative including the No Build Alternative. Sound pressure levels are logarithmic units, measuring the change in acoustical energy levels that cannot be added algebraically. A 3 dBA difference is barely perceptible to human hearing. A 5 dBA difference would be readily perceptible and a 10 dBA difference would be perceived as twice (or half) as loud.

Year 2025 No Build. Under the No Build Alternative, 2025 noise levels would be slightly higher than existing due to normal traffic increases resulting from expected population increases. Without the project, three homes (“R1”, “R2”, and “R5”) approach or exceed the NAC.

Year 2025 West Alternative. Under the preferred alternative, 2025 noise levels would be slightly lower or remain the same at the homes to the east of US Route 101 (“R2”, “R3”, “R4”, “R6” and “R7”) as compared to the 2025 No Build Alternative. With the construction of this alternative, one home (“R1”) would approach the NAC.

Year 2025 East Alternative. Under the East Alternative, 2025 noise levels would increase slightly at five homes located near the project as compared to the 2025 No Build Alternative. Table 6 shows the changes in noise levels associated with the proposed project. Three of these homes (“R1”, “R2” and “R5”) would approach or exceed the NAC.

Temporary Impacts. Noise from construction activities will occur with varying intensities and duration during mobilization, clearing and grubbing, earthwork, foundations, base preparation, paving, and cleanup activities. No single location will experience a long-term period of construction noise. Construction activities would typically occur during normal working hours.

Table 6 Modeled Noise Levels

Receptor ID	Existing Noise Level	2025 No Build dBA	2025 West Alignment		NAC Criteria Exceeded*	2025 East Alignment		NAC Criteria Exceeded*
			dBA	Increase		dBA	Increase	
R1	63	66	66	0	Yes	66	0	Yes
R2	63	66	65	-1	No	66	1	Yes
R3	61	64	64	0	No	65	1	No
R4	60	63	62	-1	No	63	1	No
R5**	67	70	N/A	N/A	N/A	70	0	Yes
R6	60	63	63	0	No	64	1	No
R7	58	61	61	0	No	61	0	No

*Note: Mitigation to be considered when predicted noise levels approach or exceed NAC (for residential use mitigation must be considered for 66 dBA Leq and above).

**Note: Residence “R5” is “Not Applicable” because the preferred alternative proposes its removal/relocation.

Construction noise from equipment is unavoidable and is regulated by Caltrans Standard Specifications Section 7-1.011, “Sound Control Requirements.” These requirements state that noise levels generated during construction shall comply with applicable local, state and federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers’ specifications. Additional measures to minimize noise impact levels would include minimizing nighttime, weekend and holiday work; construction staging and storage areas located on the west side of the bridges furthest away from residences; shielding and locating stationary construction equipment (e.g., compressors, generators) as far away as feasible from residences; and holding community meetings to explain to area residents the construction work schedule and control measures to be taken to reduce the impacts of construction work. No other mitigation is proposed for temporary impacts.

Abatement/Mitigation. Noise abatement is only considered where noise impacts exceeding the NAC are predicted to sensitive receptors and where frequent human use occurs and a lowered noise level would be of benefit. Once an impact has been identified, a determination of the feasibility and reasonableness of abatement is considered.

Feasibility is defined as an engineering consideration. A minimum of 5 dBA noise reduction must be achieved at the impacted receiver in order for the proposed noise abatement measure to be considered feasible. Topography, access requirements for driveways, presence of local

cross streets, other noise sources in the area and safety considerations are considered in determining feasibility.

Reasonableness of noise abatement is more subjective than the determination of feasibility. The overall reasonableness of noise abatement is determined by considering several factors that include, but are not limited to: costs; absolute noise levels; change in noise levels; noise abatement benefits; date of development along the highway; life cycle of abatement measures; environmental impacts of abatement construction; views of impacted residents; public and local agencies input; and social, economic, legal and technological factors.

With the construction of the western alternative, the “R1” residence located on Central Avenue would approach the NAC level of Leq 67 dBA. Abatement was analyzed and found not to be feasible because the elevation of the home exceeds the highway elevation rendering a barrier wall ineffective in reducing traffic noise.

With the construction of the eastern alternative, three homes approach or exceed the NAC of Leq 67 dBA. Receptor “R1” is located in the area between Route 101 and the Central Avenue northbound exit ramp. Abatement was analyzed and it was found not to be feasible to construct a barrier at this location due to the topography. Receptor “R2” is located to the east of the existing Route 101 and north of Route 200. Abatement was analyzed and it was found not to be feasible to construct a barrier at this location due to the topography. Receptor “R5” is located to the west of the existing Route 101 south of the Mad River Bridge. It is unreasonable from a cost standpoint to construct a soundwall within the right-of-way to protect only one residence.

J. POPULATION AND HOUSING

Setting. The preferred alternative would affect one existing residential structure situated on the southwest bank of the river. The residence is rental property and was moved to its present location in a previous acquisition required in the late 1950’s by Caltrans to construct the existing southbound bridge. Although the structure was relocated onto the owner’s property, access to this area is over an unpaved road owned by Caltrans. An easement was granted to the property owners for access.

At the time of appraisal/acquisition for the project, Caltrans Right of Way will prepare a cost analysis and negotiate with the property owners to determine if the residence will be relocated again or acquired in place and demolished. The analysis will include costs associated with relocating the residence further west, the re-establishment of utility hook-ups and new septic system. Roadway access would also be included in the analysis.

The eastern realignment alternative would not require the removal or relocation of any residences.

Project Features and Effects. Construction of the proposed project will require the relocation or removal of the residence. If the residence is relocated, the proposed project will not decrease the availability of housing in the area and will only temporarily displace occupants. If it is negotiated with the property owner that the house be removed, the residence would be removed from the housing market and the occupants would be displaced.

Current information indicates the residence is occupied by at least one student. In circumstances where Caltrans displaces housing due to construction, it has developed a relocation assistance program (RAP) for single-family residences used as rentals to college students. The renter(s) may be eligible for RAP benefits at the time of acquisition to assist them in locating replacement housing. The removal of the residence will have negligible impacts on the rental housing market due to the quantity available in Arcata and surrounding areas provided for Humboldt State University students.

K. RECREATION

Setting. The Mad River primarily supports fishing and boating activities; however, in the immediate project area, no public access to the river is available because private property surrounds the project site. A Caltrans' unpaved maintenance road, which doubles as access to the residence on the southwest bank, is used by maintenance crews. No other public roads lead directly to the river at the project site. No park, parking facilities, or restrooms exist. Beneath the bridges, chain link fencing has been cut and minor amounts of refuse indicate trespassing occurs.

Project Effects. Since no opportunity to access the river currently exists at the project site, the proposed project will have no impact on access to the river. However, the proposed project will temporarily impact recreational use of the river during construction. Construction within the river channel would likely occur from June 16 through October 14 for the life of the project. During this time, heavy construction equipment, together with river diversion, would limit the area available for recreational users. However, during the summer low flow season, some of the recreational activities, such as boating and fishing, are already limited due to lower water flows. Since the recreational uses on the river will remain unchanged from the present once construction is complete, the temporary impacts are less than significant. Additionally, after project construction, there would be less barriers in the river and a net increase of 53.8 sq.m (580 sq. ft.) in river area will be available due to the decrease in the number and size of the piers.

L. TRANSPORTATION/TRAFFIC

Setting. The Mad River Bridges are two separate structures carrying two lanes of traffic each northbound and southbound on US Route 101. The project covers a 1.9 km (1.2 mile) length on US Route 101. Within the project limits are the Central Avenue on- and off-ramps to the community of McKinleyville and the northbound Central Avenue off-ramp intersection with Route 200. Table 6 below shows current year, construction year and expected 20-year traffic volumes for the project vicinity.

Design Features and Project Effects. Design features of the Route 101/Route 200 intersection reconfiguration and bridge replacement address geometric, scour and seismic guidelines and are discussed throughout the document. The bridges are designed to handle the projected traffic usage both during construction and post project.

To address temporary construction impacts, a Transportation Management Plan (TMP) will be implemented to facilitate the movement of traffic, including emergency vehicles, through detours, lane and ramp closures. The TMP will also consist of a public awareness campaign and Construction Zone Enhanced Enforcement Program (COZEEP) by the California Highway Patrol during construction. Two traffic lanes in each direction will be available during peak hour use. Any highway closures would occur at night.

No project component is anticipated to cause any permanent change in capacity of the system or any change in existing travel patterns, and therefore, will not result in any growth-inducing impacts. The increase in traffic as noted in Table 7 is a result of increased population as well as anticipating that the average number of trips taken per vehicle will continue to increase.

The proposed project does not conflict with any adopted policies, plans or programs for alternative transportation. The project is designed to accommodate both pedestrians and bicyclists, and is consistent with the Americans With Disabilities Act for handicap access.

Table 7 Traffic Volumes

Annual Average Daily Trips (AADT)	US Rt. 101 (PM 89.4/90.2)	Rt. 200 (PM 0.0/0.83)	Central Ave. NB off-ramp	Central Ave. SB on-ramp	US Rt. 101 on-ramp from Rt. 200/Central Ave.
Year 2003	34,000	2,400	7,600	6,600	175
Year 2006	36,000	2,500	8,000	7,100	190
Year 2026	52,000	3,200	9,500	10,800	300
Peak Hour					
Year 2003	4,265	305	1,060	600	25
Year 2006	4,530	330	1,130	640	30
Year 2026	5,920	425	1,320	980	50

Caltrans D3 Office of Travel Forecasting and Modeling

M. UTILITIES

Setting. The following utilities are located within the proposed new right of way and would require relocation:

- ◆ A PG&E 203mm (8-in.) natural gas pipeline 622m (2,040 linear ft.) of which a portion is attached to the southbound bridge;
- ◆ A PG&E 12.5. kv electrical overhead crossing in the southern portion of the project;
- ◆ A SBC Pacific Bell overhead copper telephone line crossing diagonally across US Route 101 from the southbound Central Avenue on-ramp to north of the Route 200 intersection;
- ◆ An underground cable crossing from the south side of the river to the east side along the shoulder of Route 200; and
- ◆ A Cox Cable overhead line occupying joint poles with Pacific Bell lines.

Design Features and Project Effects. A utility easement may be required for relocation of the gas pipeline and would require acquisition from the adjacent private property owners. The other utilities will be relocated within state right of way. All utility relocation will be made pursuant to the North Region Policy and Procedures for Utility Verification and Relocation (June 7, 2000). Interruptions to existing utilities during construction would be temporary and are not expected to be significant.

VI. ENVIRONMENTAL COMMITMENTS/MITIGATION

The following commitments, design features, and mitigation measures are proposed to reduce project impacts to less than significant levels.

A. Biological Resources.

The following measures are proposed to reduce the effect of potential project impacts to listed species, designated critical habitat and essential fish habitat:

- ◆ All work within the river channel may occur only from June 16 and continue through October 14 of each construction year when the river is at its lowest and the least amount of fish activity occurs.
- ◆ Work below ordinary high water could occur May 1 to June 16 only if the chance of precipitation is less than thirty percent. Work that is stopped would resume only if precipitation ceases or the forecast for potential precipitation drops below 30 percent and soils are not saturated as indicated by water pooling and running off the site. In addition, a 3m (10 foot) buffer would be maintained between the work area and the wetted stream channel and erosion control materials would be stockpiled on site for immediate deployment, if necessary.
- ◆ A demolition plan shall be prepared and implemented including provisions specifying that no blasting will occur and no debris shall be allowed to fall into the river.
- ◆ Wetland and riparian habitat will be created on site. The wetland will be created by enlarging an existing drainage ditch which drains ephemeral flows on the northwest bank and regrading the channel to a more natural configuration including a meander and a slight basin which would retain more water over time and allow more area to become saturated. Riparian vegetation would be supported along the new channel. This created wetland is expected to result in the same habitat function as the wetland to be impacted by the project. This is expected to result in creating approximately 0.12ha (0.30 acres) of riparian and wetland habitat.
- ◆ An additional 0.56ha (1.4 acres) of riparian/wetland mitigation will be constructed off-site in McKinleyville, approximately 2.4km (1.5 miles) north of the project. The site is owned by the McKinleyville Services District and Caltrans proposes to enter into a Memorandum of Agreement to create emergent and riparian wetlands for highway mitigation purposes at the site referred to as "Hiller East". Caltrans proposes to assist in developing four detention basins in upland property, which will attenuate storm water

discharge from city street and residential runoff. With the proposed additional hydrology, soils on site are expected to create a clay pan over time. The site will be planted with wetland and riparian species.

- ◆ Clearing and grubbing activities will take place in the fall and winter prior to the nesting season to minimize the potential for affecting actively nesting birds. The bridges will have exclusionary netting placed in advance of the nesting season for the swallows and the netting will be maintained throughout construction.
- ◆ A new scour feature would be created in the River during the first construction year.
- ◆ Diversion and de-watering will utilize clean gravel, water bladders, or sand bags. Upon completion, all material used for diversion will be removed from the bed and banks of the river. Pump intakes, outside of isolated, subsurface cofferdams will be screened to prevent the pickup of juvenile salmonids. Water pumped from the work site shall receive appropriate treatment, as required by the Regional Water Quality Control Board, prior to being discharged onto the ground or into the river.
- ◆ A qualified biologist will be onsite during installment and removal of any water diversion system to perform fish rescue.
- ◆ Upon project completion, all disturbed gravel bars will be returned to pre-construction conditions to prevent fish impoundment.
- ◆ No concrete washing or water from concrete will be allowed to flow into the Mad River and no concrete will be poured within flowing water.
- ◆ Temporary construction BMP's for the project will be implemented in accordance with the Contractor's approved Storm Water Pollution Prevent Plan (SWPPP). The BMP's may include but are not limited to: mulches, silt fences, fiber rolls, straw bales, and sandbag barriers, stabilized access roads and construction entrances/exits, check dams, sediment basins, and lined concrete washout facilities. The Contractor will prepare a SWPPP in accordance with the Caltrans Storm Water Quality Handbooks specifying which BMP's are proposed for use. The Resident Engineer must approve the SWPPP before it can be implemented.
- ◆ BMP's to control silt and erosion of exposed soils are proposed for use.
- ◆ Construction and staging/storage disturbance will be restricted to the minimum necessary.
- ◆ Access roads and staging areas constructed will be removed upon completion of the project and revegetated to pre-construction conditions.
- ◆ The site will be returned to its pre-construction condition by replanting all affected areas. The Office of Landscape Architecture will recommend suitable replacement planting and revegetation for the riparian corridor, access roads, and staging areas. The Monterey

Pines that must be removed at the southbound Central Avenue on-ramp area will be replaced with native tree species such as Bishop Pine.

B. Agricultural Resources

The project will require 1.41ha (3.4 acres) of new right of way from properties currently in agriculture production. To address the County's policies of no net loss of agricultural lands (revenue) and to reduce project impacts on agricultural resources to less than significant levels, Caltrans proposes two opportunities to mitigate project impacts to these resources. Once the project is complete and the bridges are shifted west, the eastern alignment will also shift west freeing approximately .64ha (1.6 acres) of land. These lands are within the same private ownership as the affected realigned lands and may be returned to agricultural use. If the .64ha (1.6 acre) were returned to agricultural use, the net loss of agricultural land would only be .4ha (1 acre) of agricultural land would be removed from agricultural production. Due to the difficulties of obtaining small parcels of land in the area, Caltrans will contribute funds to a land trust comparable to the market value of .4ha (1 acre) being displaced. Caltrans will work with the County to identify an appropriate organization to receive the funds.

C. Socioeconomic

- ◆ All traffic lanes would be available during peak hour use and any complete highway closures would occur at night.
- ◆ Noise levels generated during construction shall comply with applicable local, state and federal regulations and all equipment shall be fitted with adequate mufflers according to the manufacturer's specifications.
- ◆ Stationary construction equipment will be located and shielded as far away as feasible from residences.
- ◆ An existing billboard located immediately south of the southbound onramp will be removed.

VII. CONSULTATION/COORDINATION

Consultation and coordination has been conducted with the following entities:

- ◆ NOAA Fisheries (US National Marine Fisheries Service)
- ◆ California Department of Fish and Game
- ◆ California Coastal Commission
- ◆ State Office of Historic Preservation
- ◆ Humboldt County Planning Division
- ◆ Native American consultation with Table Bluff Reservation and Blue Lake Rancheria
- ◆ Humboldt County Historical Society
- ◆ Humboldt County Public Works Department

VIII. PUBLIC INVOLVEMENT

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine potential impacts and mitigation measures, level of analysis, and related environmental requirements. Agency consultation and public participation of this project have been accomplished through a variety of formal and informal methods including project development team meetings, interagency coordination meetings, public meetings with interested stakeholders, project information available on the Caltrans website, and review of this CEQA document. This chapter summarizes the results of the Caltrans efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

Public Meetings. Two public meetings were held during the project development process of this project. The first was held at the time as the project was initiated and the second meeting was held during the public circulation of the Initial Study.

The first public meeting was held August 19, 1998 at the time the project was programmed at Azalea Hall in McKinleyville. Caltrans personnel displayed maps and plans of the proposed project alternatives and were available to answer questions.

The project as proposed was shown on a new alignment to facilitate the use of the existing bridges during construction. Alternatives presented included a new alignment west of the existing bridges and a new alignment east of the existing bridges. Improvements to the Central Avenue on- and off-ramps were presented along with a reconfiguration of the northbound Central Avenue intersection with Route 200.

A total of 26 people signed in at the meeting and 13 comment cards and letters were received. Seven comments were received regarding concerns of providing adequate pedestrian and bicycle access on the bridges; seven comments were received preferring the west alternative to allow more room to upgrade the northbound Central Avenue/Route 200 intersection; two comments were received to retain one of the bridges for pedestrian/bicycle/equestrian/farm equipment uses; and one comment was received in favor of the east alternative.

Another public meeting was held in conjunction with the public review and circulation of the Initial Study on December 10, 2003. The meeting was held in McKinleyville and was noticed in the Times Standard, Arcata Eye and McKinleyville Press newspapers. About two dozen people attended to review the exhibits and discuss the project with staff present at the meeting. Issues that were raised at the meeting included concerns about the design of the Route 200/Route 101 intersection, concerns of nearby residents about noise and glare during construction and the potential for erosion control seed mix blowing onto adjacent private property, desire to have bat shelters designed into the proposed project, and concern that the multipurpose access way would concentrate pedestrian traffic adjacent to private property where currently there is no designated public access once off the bridge structure. See the following section for responses to these issues.

Responses to the Initial Study. The Initial Study was available for public review at the Humboldt County Library's Main Branch in Eureka, as well as the Arcata Branch and McKinleyville Branch facilities. The document was available for review on December 2, 2003 and comments on the Initial Study were accepted through January 9, 2004. The Initial Study was also mailed to several state and local agencies as well special interest groups, and individuals known to be interested in the project. Fourteen letters and postcards were received in response to the public meeting and public circulation of the Initial Study. The following section includes the letters and comments received and responses to issues raised.

IX. Response to Comments

State Clearinghouse

- No comment necessary

State Lands Commission

- Comment noted

California Department of Fish and Game

- We concur that the coho warrant special protection and have formally consulted with the California Department of Fish and Game for the purposes of 2080.1 with a Consistency Determination in addition to consulting with NOAA Fisheries.
- A revised mitigation strategy consisting of both on and off site creation of wetlands is now proposed. See Chapter V- Affected Environment/Environmental Evaluation.
- With the implementation of Best Management Practices including seasonal work restrictions and the proposed mitigation the proposed project is not expected to result in significant impacts. The specific measures being proposed are included in the 2080.1 Consistency Determination and California Department of Fish and Game has concurred with the conclusions.
- We will be applying for a Streambed Alteration Agreement from California Department of Fish and Game.

County of Humboldt

- Text has been clarified with regards to the 401 permit.
- The existing text already states this.
- That is correct, the actual rate of fatality collisions is less than the expected rate for fatality collisions. However, the rate of the total number of collisions on Route 101 within the project limits is over twice what the expected rate is for similar facilities.
- Text has been revised. The more accurate number is 50.5 feet. The 47 feet figure did not account for the width of the barrier rail and guard rails on the structures.
- Text has been revised. The numbers won't be exact due to rounding errors.
- Text has been revised.
- The sedimentation basin will likely be located outside the channel. Caltrans proposes either clean-washed gravel or water bladders for use as water diversion.
- Erosion control is an integral part of the project. The specific erosion control measures will be identified in the Stormwater Pollution Prevention Plan as well as other permits.
- The potential for lead paint is addressed in Chapter IV, Affected Environment / Environmental Evaluation under Section G, Hazards/ Hazardous Materials.
- None of the lands affected by the proposed project are under the Williamson Act contract. Concur that there are residences to the west as well, but there would be more residences affected if the bridges and roadway were to be realigned to the east.

- Rehabilitation and retrofitting the existing structures wasn't evaluated as an alternative because structural elements such as the barrier rails and piers would have to be replaced, as they are structurally deficient. It would cost more to rehabilitate/retrofit the overall structures than replacing them especially considering those elements which would have to be replaced in addition to the overall retrofitting that would be necessary. Widening of the southbound bridge was originally proposed but subsequent investigations found additional deficiencies related to scour and seismic standards, which increased the costs substantially over replacing the structure.
- It is anticipated that the Monterey Pines will be replaced with Bishop Pines (*Pinus muricata*). The details of the revegetation plan will be included in various permits, but it is likely that 1 or 5 gallon plants or a combination thereof will be used.
- Text has been revised.
- It is not anticipated that the proposed project will appreciably affect the greenbelt between communities, as it is replacing an existing facility and not adding traffic capacity.
- The text and tables have been revised. Approximately 1.42 ha (3.4 acres) of right of way will be acquired from parcels in agricultural use which would represent a total of 3.6% of these parcels. The total acreage take discussed in the Initial Study included the property, which is in the Mad River channel and is not "agricultural" per se.
- The figures in Table 5 have been revised.
- The text has been revised.
- Text has been revised.
- Text has been revised to include information on non special status species.
- Text has been revised.
- Text has been revised.
- Text has been included about the bridges' historic significance.
- The proposed bridges will have less piers in the river resulting in fewer impediments to flood flows.
- The noise evaluation entails taking actual noise measurements for use in the modeling.
- Disposition of the older, single family residence located within the proposed acquisition area for the selected Westerly Alternative will be determined during the design and acquisition phase of the project. If the residence is found to be in satisfactory condition and it is determined to be economically feasible, Caltrans proposes to relocate the home onto the property owner's remaining parcel. If the structure is unable to be moved due to physical condition or it is determined that relocating the home is more expensive than purchase and demolition, then Caltrans proposes to purchase the home and demolish in place.
- Information has been added to indicate that the clearing and grubbing activities will take place prior to the nesting season.
- BMP require continuous monitoring of erosion control efforts and remediation if efforts are not successful in controlling erosion. Specific details will be called out in the 401 permit and the SWPPP.
- Caltrans cannot dictate land use. It is anticipated that the land which would be available after construction is completed would be put to agricultural use similar to the surrounding land use. Caltrans is committed to providing a contribution for the preservation of ag lands in the county as mitigation for this project. During the design phase, a Memorandum of Agreement or an interagency agreement with the County will be

prepared to formalize this commitment and identify the process for transferring the funds. Caltrans will be working with the County to identify where the funds should be transferred.

- During construction of the project there will be a temporary, localized increase of PM10 emissions. These emissions will be mitigated for, and the emissions will cause a less than significant impact. Ambient air quality standards (AAQS) define clean air and are established to protect even the most sensitive individuals in our communities. An air quality standard defines the maximum amount of a pollutant that can be present in outdoor air without harm to the public's health. Therefore, special accommodations will not need to be made during the project for people with asthma because these sensitive individuals are already considered when the ambient air quality standards have been established.
- BMPs will be employed during construction to maintain water quality.
- Figures have been revised.

Donald and Carol Graham

- We acknowledge that the proposed project has the potential to result in an increase of pedestrian traffic including transients. However, Caltrans has received numerous requests from the community for a pedestrian crossing at this location due to the lack of reasonable options in the vicinity of the bridge. In general, pedestrians are prohibited from being on a freeway, thus the multipurpose access way directs pedestrians to the nearest public facility. Wymore Road is a county road and North Bank Road is a state highway. Both of these roads allow public access currently. There are no plans to construct fencing or walls along North Bank Road. Fencing and walls are generally considered a hazard to vehicles because they reduce the area for a clear recovery zone and/or limit line of sight. Unfortunately, transients are a statewide problem around Caltrans' bridges and structures. If transients trespass onto private property it is considered a police/enforcement matter.
- The project as proposed will improve the existing intersection by including the following features: raising the grade which will result in better sight distance; adding intersection lighting; providing eight foot shoulders; providing a longer merge lane for westbound Rt. 200 to northbound Central Ave; and providing a roadway treatment (open graded asphalt concrete- OGAC) which will increase traction. Caltrans will be working with the County as they undergo planning efforts to expand their bicycle and pedestrian facilities.
- Intersection lighting will be placed in accordance with our standards that focus the light on the roadway to eliminate glare to the surrounding area.
- With regards to accommodating the water line from McKinleyville Community Services District in the new bridge structure, we have been exploring that possibility with the Services District.

Tom Lurtz and Linda Gleye

- The project as proposed will improve the existing intersection by including the following features: raising the grade which will result in better sight distance; adding intersection lighting; providing eight foot shoulders; providing a longer merge lane for westbound Rt. 200 to northbound Central Ave, and providing a roadway treatment (open graded asphalt concrete- OGAC) which will increase traction.

- Wymore Road is a county road and North Bank Road is a state highway. Both of these roads allow public access currently. There are no plans to construct fencing or walls along North Bank Road. Fencing and walls are generally considered a hazard to vehicles because they reduce the area for a clear recovery zone and/or limit line of sight. Unfortunately, transients are a statewide problem around Caltrans' bridges and structures. If transients trespass onto private property it is considered a police/enforcement matter.
- Intersection lighting will be placed in accordance with our standards that focus the light on the roadway to eliminate glare to the surrounding area.
- There will be access to R1, R2, and R3 during construction. The Caltrans Resident Engineer will accommodate desired access as much as possible with the understanding that the roadway in front of their residence will have to be paved.
- There is no standard sign, which would direct traffic successfully to School Road. The proposed project will result in improvements to the intersection.
- Contract specifications will require the Contractor to control dust during construction. Specifications also dictate how reseeding is to be done to ensure that the application is done appropriately. A Caltrans Resident Engineer will be overseeing the construction of the project to ensure that specifications are adhered to.
- Both the Caltrans Resident Engineer and Project Manager are responsible for the project during construction. The public should receive advance notice of expected delays and detours.
- There will be another public meeting held prior to construction beginning on this project. This meeting will provide an opportunity for the residents and interested public to hear details about construction staging and would include such information as access to residences, expected delays and detours to occur. It is also an opportunity for issues and questions about the construction activities to be addressed by the Caltrans Resident Engineer.
- Drivers are required by law to exercise due caution and drive only as fast as conditions allow. The improvements to the intersection should improve the driver's ability to perceive these conditions.
- Caltrans continually monitors collision data on the state highways and statewide quarterly reports are prepared which identify collision concentration locations for highway segments, intersections, and ramps. When collision concentrations are determined to be statistically significant, (e.g, collisions are greater than expected for that type of facility) an investigation is performed to determine the cause and possible solutions. Investigations are also performed at the request of concerned members of the community.

A collision analysis was done as part of the studies performed for this bridge replacement project and includes the intersection of North Bank Road with the Route 101 offramp to Central Avenue. For the five year period of April 1, 1997 through March 31, 2002, eight collisions occurred at the intersection which included no fatalities, but three injury collisions. Reviewing our records for sign replacements where collisions are not reported would provide inconclusive information. We know from experience that reporting of collisions varies over a broad range. It is estimated that while 100% of the collisions resulting in fatalities are reported, only 40% of the collisions resulting in only property damage are reported.

We believe that the improvements to the intersection that are provided with the selected alternative will make the intersection safer.

- Providing bat habitat was considered for this project but it was determined by the biologists that the conditions are not conducive to bats, that there is too much of a coastal influence and the temperatures are too cool. On the existing structures there is no evidence that bats utilize the bridge cavities as a day roost. While bats may occasionally utilize the bridges at night for temporary resting (night roost), loss of this use would not be a substantial adverse effect.

Larry and Doris Mendes

- See responses to comments above.

Charles Wilson

- Alternative 1, the westerly alignment with a multipurpose access way is the selected alternative.
- Figure 5 text will be corrected.
- The designated walkway will terminate northerly of the bridge at North Bank Road. The details of the terminus of the multipurpose access way is still in the design phase. Caltrans will be considering your concerns as design progresses.
- It is proposed to replace the Monterey Pines with Bishop Pines (*Pinus muricata*). The Bishop Pine grows to a height and breadth that will be similar to the Monterey pines. There are groups of large Bishop Pines at a number of locations along Rt. 101 in Arcata.
- We are coordinating with the County of Humboldt to determine the appropriate organization to use to fulfill our agricultural mitigation obligations.

David P. Wilson

- Alternative 1, the westerly alignment is the selected alternative.
- Adequate sight distance was one of the variables that was considered when designing the project and selecting the preferred alternative. The project as proposed will improve the existing intersection by including the following features: raising the grade which will result in better sight distance; adding intersection lighting; providing eight foot shoulders; providing a longer merge lane for westbound Rt. 200 to northbound Central Ave, and providing a roadway treatment (open graded asphalt concrete- OGAC) which will increase traction.

Dwight Winegar

- No comment necessary

Jeff Driver

- No comment necessary

Linda Gleye

- Stop signs at the intersection of North Bank Road to Central are under consideration. Details of the intersection design are currently ongoing and your comments will be considered as design progresses.
- It is Caltrans policy to provide advance notice of ramp closures.

Andy Lane

- Alternative 1, the westerly alignment, is the selected alternative.

Scott Kelly

As designed, the multipurpose access way extends to North Bank Road. The details of the terminus of the multipurpose access way are still in the design phase. Caltrans will be considering your concerns as design progresses. Caltrans will be working with the County as they undergo planning efforts to expand their bicycle and pedestrian facilities. With the life expectancy anticipated for the bridges Caltrans feels it is important to provide for non-motorized access in the current project rather than having the structures becoming a gap in the network in the future.



Arnold
Schwarzenegger
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Jan Boel
Interim Deputy
Director

January 6, 2004

Deborah Harmon
Department of Transportation, District 1
1656 Union Street
Eureka, CA 95501

Subject: Mad River Bridges Replacement Project
SCH#: 2003122015

Dear Deborah Harmon.

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. The review period closed on January 5, 2004, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Terry Roberts
Director, State Clearinghouse

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone 1-800-735-2922
from Voice Phone 1-800-735-2929

Contact Phone: (916) 574-1890

Contact FAX: (916) 574-1885

January 2, 2004

File Ref.: SCH #2003122015

Ms. Deborah Harmon
California Department of Transportation
North Region Environmental Services
1656 Union Street
Eureka, CA 95501

Subject: Proposed Mad River Bridge Replacement Project at the Mad River near
McKinleyville, Humboldt County

Dear Ms. Harmon:

Staff of the State Lands Commission has reviewed the Draft Initial Study for the subject project. According to our records, the existing Mad River Bridge crossing is covered under Lease No. PRC 7919.9. However, a lease amendment will be necessary for the proposed bridge replacement project.

This letter is not intended, nor should it be construed as, a waiver or limitation of any right, title, or interest of the State Lands Commission in any lands under its jurisdiction.

Thank you for the opportunity to comment. If you have any questions regarding the lease amendment process, please contact Bill Young, Public Land Management Specialist, at (916) 574-1867.

Sincerely,



STEPHEN JENKINS
Assistant Division Chief,
Division of Environmental Planning

cc: Bill Young

Memorandum

To: Ms. Deborah Harmon, Chief
Eureka Environmental Management, E1
Department of Transportation
1656 Union Street
Eureka, California 95501-3550

Date: January 9, 2004

From: **DONALD B. KOCH, Regional Manager**
Northern California-North Coast Region
Department of Fish and Game
601 Locust Street, Redding, CA 96001



Subject: Mad River Bridges Replacement Project, US Route 101, Humboldt County

The Department of Fish and Game (DFG) has reviewed the draft initial study/negative declaration (IS) you provided. The California Department of Transportation (Caltrans) proposes to construct on a new alignment, northbound and southbound bridges crossing the Mad River, realign the connecting Central Avenue entrance and exit ramps, and reconfigure the US Route 101/Route 200 intersection. We are pleased to offer the following comments on the project in our role as both a trustee and responsible agency under the California Environmental Quality Act (CEQA).

Under "D. BIOLOGY/WATER QUALITY" (page 20) the IS states that Chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*Oncorhynchus mykiss*), and southern Oregon/northern California coho salmon (*Oncorhynchus kisutch*) are present at the project location and are federally listed as threatened. While coho are not State listed at this time, the Fish and Game Commission has determined that coho salmon north of Punta Gorda warranted protection as a threatened species under the California Endangered Species Act (CESA). The Fish and Game Commission has directed DFG develop a coho salmon recovery strategy plan. Once the coho recovery plan is completed, coho salmon will be listed under the CESA. Coho currently meet the definition of an "Endangered, Rare, or Threatened Species" under Section 15380 of the CEQA Guidelines and are thus protected.

Under "Riparian Impacts" the IS states that 0.28 acre of riparian vegetation will be removed on the southwest bank and 0.33 acre will be removed on the northwest bank for a total impact of 0.61 acre. From the description provided, this appears to be a permanent loss. For mitigation the document states that 0.14 acre would be available for revegetation on the

Ms. Deborah Harmon
January 9, 2004
Page Two

northeast and southeast sides of the bridge after the bridge removal. This calculates to a ratio of 0.23 to 1 restored to lost habitat. The standard State and Federal mitigation ratios for the loss of riparian habitat range from 3 to 1 up to 10 to 1 depending on the quality of the habitat and whether the loss is permanent or temporary. For this project, the mitigation ratio proposed does not meet this standard.

According to the IS, the instream construction season will begin June 16 and end on October 14. The document correctly states that coho fry, juvenile steelhead, and adult summer-run steelhead may be present in the project area during this time period. In the "Salmonid Impacts" section (page 21), the document addresses potential displacement impacts to these species due to construction activities but does not provide details regarding the potential direct and indirect impacts caused from loss of riparian vegetation or the potential for direct take during dewatering of cofferdams or from vibration impacts during pile and sheet driving activities. The IS does state that "A Biological Assessment for impacts to anadromous fish was submitted to the NOAA Fisheries" (National Oceanic and Atmospheric Administration Fisheries Service) with a request for "concurrence that the proposed project may adversely affect" these species (page 22). CEQA Guidelines Section 15064 (a)(1) states "If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, the agency shall prepare a draft EIR" (environmental impact report). As this project may result in take of an "Endangered, Rare, or Threatened Species" (coho), pursuant to Section 15064, an EIR should be prepared and should include a discussion of all potential direct and indirect impacts to coho along with appropriate mitigation measures to reduce those impacts.

As project activities will result in modification to streambeds or banks, may use material from one or more streambeds, or divert or obstruct streamflow, Caltrans will need to notify us pursuant to Section 1602 of the Fish and Game Code prior to undertaking any of these activities. In issuing a streambed alteration agreement, DFG will be acting as a "Responsible Agency" under CEQA. The DFG is required by Guidelines Section 15096 to review the CEQA document certified by the lead agency approving the project and, from that review, make certain findings concerning the activities potential to cause significant, adverse environmental effects. This is another reason why it is important for the CEQA document to address and include all of the potential biological streambed alteration impacts and propose feasible mitigation.

Ms. Deborah Harmon
January 9, 2004
Page Three

The IS states that a Fish and Game Code 2080.1 Consistency Determination for coho is in progress. The request for a Consistency Determination may be made once Caltrans has received the "Incidental Take Permit" from the NOAA Fisheries. The request should be sent directly to the DFG Director. Please include a copy of the Federal Biological Opinion and Federal Take Permit. For the Department to find the Federal Incidental Take Permit consistent with CESA, it must meet the requirements of Fish and Game Code Section 2081 which, in part, states "The impacts of the authorized take shall be minimized and fully mitigated" and "The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species." It also states that no permit may be issued "if the issuance of the permit would jeopardize the continued existence of the species." If we find that the Federal take authorization is consistent with State law, Caltrans would then operate under the conditions of the Federal permit. Please note that DFG may not add any additional conditions to this permit. If it is determined to not be consistent, Caltrans would then need to request a take permit under Fish and Game Code 2081. If the biological assessment for impacts to anadromous fish submitted to NOAA Fisheries does not currently meet all the requirements of Section 2081, we are available to assist in this process.

Thank you for the opportunity to comment on these documents. If you have any questions or concerns regarding this information, please contact Environmental Scientist Bob Williams at the above address or by telephone at (530) 225-2365.

cc: Mss. Vicki Frey and Melissa Bukosky
Mr. Larry Preston
Fish and Game Lieutenant Supervisor Rick Banko
Department of Fish and Game
619 Second Street
Eureka, California 95501

Messrs. Craig Martz and Bob Williams
Region 1 1600 Office
Department of Fish and Game
601 Locust Street
Redding, California 96001



DEPARTMENT OF PUBLIC WORKS
COUNTY OF HUMBOLDT

MAILING ADDRESS: 1106 SECOND STREET, EUREKA, CA 95501-0579
AREA CODE 707 / FAX 445-7409

ARCATA-EUREKA AIRPORT TERMINAL
McKINLEYVILLE

PUBLIC WORKS BUILDING
SECOND & L ST., EUREKA

CLARK COMPLEX
HARRIS & H ST., EUREKA

AVIATION 839-5401

ADMINISTRATION	445-7491	NATURAL RESOURCES	445-7741
BUSINESS	445-7652	PARKS	445-7651
ENGINEERING	445-7377	ROADS & EQUIPMENT MAINT.	445-7421
	ARCHITECT	445-7493	

LAND USE 445-7205

January 8, 2004

Deborah L. Harmon, Chief
Department of Transportation
District 1
1656 Union Street
Eureka, CA 95501

Dear Ms. Harmon,

Please find the attached comments on the Draft Initial Study Mad River Bridges Replacement Project. Please let me know if you require additional information or have any questions in this matter (707) 268-2680.

Sincerely,

Adam Forbes
Environmental Services Manager

COMMENTS TO : DRAFT INITIAL STUDY
MAD RIVER BRIDGES REPLACEMENT PROJECT

- 1.) Page 1, Section I. Summary, last paragraph, The following permits are required: fifth bullet statement – add Water Quality Certification?
- 2.) Page 2, Section III. Purpose & Need, fourth paragraph - B. Seismic Improvements, second sentence. Change to: No retrofitting of the northbound bridge has ever occurred.
- 3.) Page 3, Table 1 Collision Rate. Data for Actual-Fatal column is lower than Average-Fatal column.
- 4.) Page 5, paragraph 6, third sentence. If the widths presented in the first sentence are added together the total is 47-ft. This does not agree with the width of 50.5-ft presented in the 5th paragraph on page 5.
- 5.) Page 5, paragraph 7, second sentence. Change 33.5m to 33m. $180\text{m} - 147\text{m} = 33\text{m}$ not 33.5.
- 6.) Page 8, paragraph 2, 1. Staging Area/Access Roads., second sentence. $0.68\text{ha} = 1.68\text{ac}$ & $0.9\text{ha} = 2.22\text{ac}$. Check metric standard conversion.
- 7.) Page 9, paragraph 6, third sentence. The settling basin needs to be outside river channel. Not enough filtering in river run. Berm gravel must be imported (per A.C.O.E.)
- 10.) Page 9, paragraph 7. Construction Schedule. Comment: Should mention appropriate erosion control measures?
- 11.) Page 11, paragraph 4, Year Four. Comment: It seems as though lead paint should be addressed? Last sentence, comment: revegetation & replanting are redundant, recommend omitting one of these words.
- 12.) Page 11, C. Other Alternatives Considered., 1. Alternative 1, East Alternative. First bullet statement. Comment: Are any of these lands under Williamson Act contract. Fourth bullet statement. Comment: There are homes to west also.
- 13.) Page 12, paragraph 2. Alternative 2, No Build. Comment: Should Rehab./Retrofit be considered as an alternative?
- 14.) Page 15, paragraph 5. Fourth sentence: $.24\text{ha} = 0.59\text{ac}$ (Check metric standard conversion). Sixth sentence: Which and what age at planting? i.e. seedlings or 10yr olds. What species?
- 15.) Page 16, paragraph 1, sentence 3. $.24\text{ha} = 0.59\text{ac}$ (Check metric standard conversion).
- 16.) Page 18, paragraph 2. Comment: Permanent effect on greenbelt between communities.
- 17.) Page 18, paragraph 3, second sentence. Comment: $2640\text{ft.} \times 125 = 330,000\text{ft}^2 = 3.07\text{ha} = 7.6\text{ac}$. These dimensions of the new ROW do not match the values presented in Table 5. If the value of 3.07ha is correct it would represent approximately 6% of the agricultural lands adjacent to the project site not 3.3%.
- 18.) Page 18, Table 5 – Affected Agricultural Lands. *Comment 1:* Parcel 3, the sum of column 2 (Total Parcel Size) = 50ha not 50.5. *Comment 2:* Total for

column 3 (Proposed R/W acquisition) = 1.068ha not 1.08? *Comment 3.* Total for column 3 (Proposed R/W acquisition) does not agree with total of 1.09ha presented in paragraph 3 on page 18. Check rounding errors. *Comment 4:* Prime ag-land- how much is there in total & is 70 acres “infinitesimal”?

- 19.) Page 19, paragraph 1, Sentence 1, Comment: 3.07 ha (refer to # 18 above). Sentence 2, comment: 1.1acre = .88% of 125 ac not 1.37%. Will be different if 3.07ha of ROW.
- 20.) Page 20, paragraph 1, sentence 2 – no substantial adverse air quality...Comment: It will increase PM₁₀ in an area already exceeding PM₁₀ limits!
- 21.) Page 20, Environmental Setting, Fourth bullet-Wildlife Species of Concern. Comment: No mention of MBTA, swallows on bridge, birds nesting in riparian zone, potential for bats under bridge. Fifth bullet-Plant Species of Concern. Comment: While it is true that CNDDDB has no records for sensitive plant species in the project area it does not mean that potential habitat for sensitive species does not occur within the project area. Recommend expanded discussion regarding potential rare plant habitat within the project area.
- 22.) Page 21, last paragraph, sentence 7. Change to: ...construction season and juvenile steelhead **are** expected in...
- 23.) Page 22, paragraph 1. Comment: Allowing area to “naturally revegetate” invites invasive species. Area should be immediately revegetated with native plants.
- 24.) Page 23, paragraph 1, Historic Properties. Comment: What about the bridges? Although the bridges are on List 5 (of the Caltrans bridge inventory) they should be discussed in some detail.
- 25.) Page 23, last paragraph, Design Features and Project Effects., sentence 2. Comment: This inherently redirects and restricts flood flows.
- 26.) Page 27, top of page, Year 2025 West Alternative. Comment: Did they measure actual current sound and compare to what model says should be to determine error range in projections?
- 27.) Page 29, paragraph 4. Project Features and Effects. Comment: Is this a “low cost” rental that will be removed? It has been extensively documented that enough low cost housing does not exist. How will this be replaced?
- 28.) Page 31, VI. ENVIRONMENTLA COMMITMENTS/MITIGATION, A. Biological Resources. Bullet 1 comment: What about birds nesting in riparian vegetation. Bullet 2 comment: Contingency plan for when it does?
- 29.) Page 32, top of page, cont. from VI. ENVIRONMENTAL COMMITMENTS/MITIGATION, A. Biological Resources. Comment: How will erosion be monitored and what steps will be taken if controls are not working.
- 30.) Page 32, B. Agricultural Resources. Comment: The mitigation measures offered in this section are not acceptable. Stating that .64 ha “...may be returned to agricultural use” and that “...the contribution of funds to a land trust comparable to the market value of 0.4ha being displaced may be possible” is **not** mitigation. These statements are a good start but really don’t assure that any action will be taken. Recommend including detailed mitigation measures to ensure no net loss of agricultural lands.

- 33.) Environmental Significance Checklist. III. a), b), & c) Comment: add PM₁₀. d) Comment: Do any of the neighbors have asthma? How will they be accommodated during the project?
- 34.) Environmental Significance Checklist. VIII. f) Comment: Erosion?
- 35.) Figure 3, sheet 1. Insert North arrow. Add road label for Wymore Road?
Figure 3, sheet 2 & Figure 5. Insert North arrow.

Donald and Carol Graham
1706 Guintoli Lane
Arcata, CA 95521
Phone: (707) 822-1060

January 5, 2004

CALTRANS
Attn: Deborah L Harmon
P.O. Box 3700
Eureka, CA 95502-3700

Dear Deborah,

Thank you for the invitation to the Public Open House for the Mad River Bridges Replacement Project on US Route 101 on December 10, 2003. We were able to attend the meeting and speak with your staff, but still have a few comments and concerns.

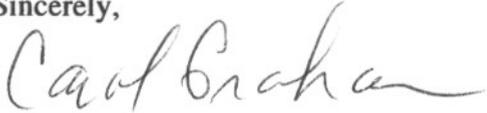
First, we are concerned with routing of bike and pedestrian traffic onto Wymore Lane, a rural/dead end road, which is bordered by the freeway on one side and ag exclusive land on the other. Our main concern is with the increased traffic. We feel this will increase the number of transists traveling down the road looking for a place to sleep or set up camp and the number of people looking for access to the river. In both cases, we are concerned with people trespassing onto our property. Transits are already a problem is this area. We consistently have one to four people panhandling in the Guintoli Lane/Valley West area. Have you thought about whom will patrol the path or who will pick up trash? We would like you to focus on mitigating impact on adjacent landowners.

Our second concern is with the number of lanes the multi use path will need to cross and the fact that the path will be dumping onto a relativity narrow section of Central Ave. With several accidents involving cars and non-vehicle traffic (i.e. Cars hitting kids on bikes) over the past few years, we are weary of increasing the bike and pedestrian traffic in this area. We suggest you don't significantly increase the non-vehicle traffic until you have working with the county to improve this area by widening the bike/pedestrian path.

Finally, we would like to reiterate a few issues we discussed with you staff at the December 10th meeting: (1) Signage and Lighting – We have been assured that there would be minimal, yet similar signage and lighting to what exists now. As landowners of property on North Bank, we are specifically concerned with any impact to the residents R-4. (2) Emergency Water Line – We are in favor of the emergency water line attached to the bridge by McKinleyville Community Water District to provide emergency water in case the main line fails.

We appreciated the invitation to the meeting and would like to continue to be involved in the planning of this project. We also would like to thank you for the offer to walk the areas of the planned change. We would like to take you up on your offer and will be calling you after the first of the year.

Sincerely,

A handwritten signature in cursive script, appearing to read "Carol Graham". The signature is written in dark ink and is positioned below the word "Sincerely,".

Donald and Carol Graham

CALTRANS
Environmental Management
Deborah Harmon
PO BOX 3700
Eureka, CA 95502-3700

The following are comments regarding the Mad River Replacement Project.

The West alternative appears to be the best of the options.

The project is too narrow in scope; the intersection of RT 200 and HWY 101 remains too dangerous in your proposal. A controlled intersection should be re-considered and additional funds sought to fulfill your responsibility to provide safe roads.

The proposed walkway will end on the north side at the foot of R2 and R3 on RT 200. As the occupants/owners of R2 and R3, there are concerns about increased trespassing, vandalism or loss of property. Will fencing, a wall or some other security measures be installed along the north right of way to prevent easy access to our properties?

What type of lighting will be installed at the Central/Rt200 intersection and how will its placement affect R2 and R3?

Will there be guaranteed access to R1, R2, R3 during construction? There are multiple trips made daily and at varying hours for these households including in-house rehabilitation therapy for R2.

Instead of promoting the Central exit as the most desired entry into McKinleyville, why not try to move some traffic north to School Rd through your Blue Services signage? This may provide some relief to the traffic trying to enter Central from RT200, the traffic trying to cross the Central exit either to enter northbound 101 or those trying to go east on RT200 from the end of southbound Central.

There is reference (page 13) to a May 8, 2003 Issue Paper on a separate project for the northbound Central Ave off-ramp. Would it be possible to obtain a copy of that report to review?

R2 regularly uses a clothes line to dry clothes. There are concerns regarding dust during construction. What recourse will there be for issues with airborne materials settling on clothes, vehicles and structures at greater levels than normal? Similarly, if there is over spray when reseeded or windborne dispersal of any materials, what options do these residents have?

Is there a contact person/project director that will be available to R1, R2, and R3 throughout the project and will we be given advance notice of expected delays, detours to plan for work, school, etc?

Will there be another public meeting once the final project option is decided to review any changes CALTRANS may have made in the plans and to provide another comment period?

What speed limit are you proposing for the northbound Central off-ramp? Currently you have a posted 15 mph for ramp, which is certainly vague. It's all an exit ramp to the ordinary citizen. As you noted in your report, there is high speed exiting at this location. What measures will you take to control that? Many drivers accelerate to prepare for the Central Ave grade. Giving these drivers a straighter path and clear line of vision on the redesigned exit would only provide greater opportunity to accelerate.

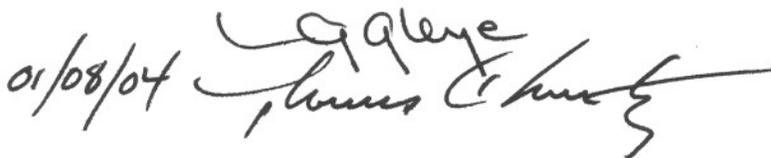
In assessing your accident data, did you look at the amount of signage that has been destroyed apart from your injury accident data? As you don't track minor collisions or this type of accident, it seems you are underestimating the risk factor at the RT200/ HWY 101/ Central Ave intersection. As you state this is a greater than average accident site and the amount of traffic will increase with growth, what additional monitoring are you doing between now and the beginning of construction to evaluate if more will be done?

Can design consideration be given in bridge construction to providing bat habitat on the bridges? This area is prime bat habitat.

As everyone at the public meeting felt there was little the Eureka office could do to seek more funding and a better solution for the RT 200/HWY 101/Central Ave intersection, where do concerned citizens go to address this issue?

Thank you for your time and attention to these concerns. Please contact R2, Tom Lurtz and Linda Gleye, at PO BOX 705, Bayside, CA 95524-0705 or by phone at 839-2671. Contact R3, Larry and Doris Mendez at 1891 Reserve Rd, McKinleyville, CA 95519 or by phone at 839-0282.

Sincerely,

01/08/04


Tom Lurtz/Linda Gleye, owner/resident
1869 Northbank Rd

Larry and Doris Mendes, owner/resident
1891 Reserve Rd.

CALTRANS
Environmental Management
Deborah Harmon
PO BOX 3700
Eureka, CA 95502-3700

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In assessing your accident data, did you look at the amount of signage that has been destroyed apart from your injury accident data? As you don't track minor collisions or this type of accident, it seems you are underestimating the risk factor at the RT200/ HWY 101/ Central Ave intersection. As you state this is a greater than average accident site and the amount of traffic will increase with growth, what additional monitoring are you doing between now and the beginning of construction to evaluate if more will be done?

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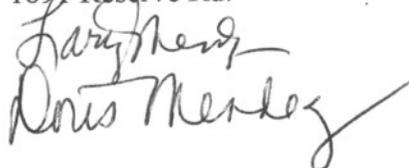
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Sincerely,

Tom Lurtz/Linda Gleye, owner/resident
1869 Northbank Rd

Larry and Doris Mendez, owner/resident
1891 Reserve Rd.

Handwritten signatures of Larry and Doris Mendez in black ink. The signature for Larry Mendez is written above the signature for Doris Mendez.

12-13-03

Deborah L. Harmon
Caltrans
P.O. Box 3700
Eureka, CA 95502

Re: Draft Initial Study, Mad River Bridges Replacement Project, US Route 101

Thank you for the copy of the Draft Initial Study. The project is good and should be built. Here are my comments.

The No-Build would result in significant socio-economic environmental impacts. **Caltrans has always had an obligation to comply with State laws requiring the maintenance of historical ingress and egress to the community as well as the provision of safe pedestrian access, and these legal obligations are not being fulfilled.** Caltrans is exposing the State to significant liability if the community or individuals challenged Caltrans' physical severing of safe pedestrian ingress and egress and also if pedestrians were injured crossing the existing bridges where no pedestrian safety was provided. The State is "deep pockets" for lawyers. Although the bridges are daunting for bicyclists, the use by bicyclists has never been severed.

Communities in Humboldt County are like a string of pearls tied together by the State highways. Caltrans District 1 has had a de-facto policy of severing pedestrian access between communities by not providing safe pedestrian features on its bridges and highways and then posting "Pedestrians Prohibited" signs in an attempt to reduce its liability. The first wood bridge across the Mad River that was built in the early 1900's provided pedestrian access probably before there were any motor vehicles crossing it. **The 1929 steel truss bridge for many years had pedestrian access.** When the separate southbound bridge was constructed in 1958 it provided an 18 inch walkway. **The existing 1929 steel truss bridge, although used as part of the freeway, existed prior to the freeway and was not built with the freeway.** At some time later, "Pedestrians Prohibited" signs were erected because of the increase in motor vehicle traffic. The only present physical pedestrian alternative, the Hammond Bridge, was not available until about 1985, 27 years after the southbound bridge was built. The Hammond Bridge cannot be considered a viable alternative for pedestrians because it is 4 miles out of the way (including return distance), and most pedestrians do not have that large a walking range. The SR 200-299 interchange likewise blocks pedestrians. Bicyclists are not as restricted range-wise, but they were never blocked from using the Mad River Bridge. There is an \$85 fine if the CHP catches pedestrians. Despite this potential fine, many more pedestrians cross the Mad River Bridge illegally than bicyclists cross legally.

There are a number of laws and policies which require the provision of pedestrian safety on bridges and highways. State real estate laws have long spelled out severance damages when access rights are confiscated. Streets and Highways Code Section 157 requires

maintaining pedestrian access. FHWA and Sacramento Caltrans policies are clear in requiring that pedestrian access or alternative routes be provided. ADA regulations are newer but add more access requirements. There is even a new State law requirement.

Both Alternative 1 and Alternative 2 are preferable to the No-Build Alternative because they both provide an 8-foot wide multi-purpose walkway across the bridge.

Alternative 2, the western alignment, is the best Alternative and is better than Alternative 1. Alternative 2 provides more area to improve the geometrics at Route 200. It is just as important to avoid accidents at on- and off-ramps as it is on the freeway itself, and the improved geometry will be safer. Noise levels for nearby residents would also be reduced.

Either the outside shoulders or the multi-use walkway can accommodate bicyclists. **Figure 5, however, labels the "multi-purpose walkway" as a "two-way bike path", which is incorrect.** Bicyclists are allowed to use pedestrian walkways unless prohibited by local jurisdictions. Pedestrians have a right of way perpendicular to the roadway at intersections or where posted, but they do not have a right of way longitudinally on roadways, and a "bike path" might be construed as a portion of a roadway. If the walkway is labeled a "bike path", it appears that bicyclists would have the right of way over pedestrians. Also, Caltrans' Bicycle Route Design Manual points out that Class I Bike Routes (bike paths) should not encourage bicyclists to drive on the incorrect, illegal side of the road. Bicyclists are notorious for ignoring both pedestrian and vehicle regulations, and dumping any bike path onto northbound Central Avenue will encourage illegal driving and accidents. If the "bike path" were to have any usefulness, there would also have to be a southbound Central Avenue bike lane or bike route, something that would increase the complexity of the intersection and increase Caltrans' liability.

Caltrans recently improved Central Avenue northbound from the SR 200 intersection by providing shoulders for emergencies. The shoulders were a good improvement. Pedestrians, however, do not have any right of way on shoulders, even where there is a fog stripe, because a fog stripe does not designate a pedestrian walkway. Between the SR 200 intersection with Central Avenue and the northern end of the project half of the pedestrians would be walking with their back to traffic. They cannot safely cross to the other side to face traffic, and there is no shoulder on the opposite side anyway. **Some sort of designated walkway should be constructed between the intersection and the northerly end of the project.** Perhaps a gutter with a rolled curb would sufficiently designate the walkway while still allowing emergency use by disabled vehicles. The County will have to continue the designated walkway beyond that end point.

Monterey pine trees, although native to the States of California and Baja California del Norte, are not indigenous to Humboldt County. The nearest natural stands of these trees are 400 miles to the south, and **they should be replaced by native species.** Monterey pines grow quickly but are relatively short-lived and have higher maintenance costs.

Page 19 and page 32 indicate that a contribution of funds may be made to a land trust approximately equal to the market value of agricultural lands displaced in order to mitigate for the loss of agricultural lands to a less than significant value. California Proposition 209 and the US Constitution prohibit racial discrimination, and some land trusts specify in their by-laws that they shall discriminate against non-Indians, even though they are not compelled by any court order to discriminate in this manner. In particular, the closest local land trust, the one most likely to receive this contribution, has this discrimination clause in their by-laws. **Any such mitigating contribution should not be made unless the involved land trust agrees that it will not racially discriminate and will change its by-laws if needed.**

Page 29 mentions rentals to college students. Humboldt State University recently stated it proposes to double its enrollment from about 6,000 students to about 12,000 students by the year 2040. Page 30 indicates traffic volumes are anticipated to increase about 53 percent by 2026, and by year 2040 it would be even higher. Although the State's population projections are higher than the County's projections, the traffic volumes will no doubt increase significantly, resulting in increased accidents and a decrease in the level of service. It is desirable to reduce traffic. HSU is relatively close to McKinleyville, and able students could easily walk to school if they were not prevented by Caltrans' "Pedestrians Prohibited" signs and the existing unsafe bridge crossing. After construction of the new multi-use walkway, however, students will be able to better access the lower cost McKinleyville rental housing market.

Thank you for the opportunity to comment.



Charles Wilson
P.O. Box 127
Orick, CA 95555-0127

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)
PUBLIC MEETING
MAD RIVER BRIDGES REPLACEMENT PROJECT

NAME: David P. Wilson
ADDRESS (home) CITY STATE ZIP
PO Box 3082 Eureka Ca 95502
REPRESENTING (name of organization or agency)
Taxpayer

I would like to make the following comments regarding the Mad River Bridges Replacement Project.

A much needed project, long overdue. ALT # 2 offers more advantages than ALT # 1 or NO BUILD.

Will there be adequate stopping sight distance (V & H) between north end of NB bridge and offramp / Rte 200 intersection?

NOTE: Please submit comments by: January 9, 2004

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)
PUBLIC MEETING McKintyville 10 DEC 2003
MAD RIVER BRIDGES REPLACEMENT PROJECT

NAME: DWIGHT WINEGAR
ADDRESS (home) CITY STATE ZIP
PO Box 672 Arcata CA 95518-0672
REPRESENTING (name of organization or agency)
HCAOS - CAC

I would like to make the following comments regarding the Mad River Bridges Replacement Project.

Looks great! I really like the proposal in the latest form it has taken and fully endorse what was presented at AZALEA HALL.

NOTE: Please submit comments by: January 9, 2004

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)
PUBLIC MEETING
MAD RIVER BRIDGES REPLACEMENT PROJECT

NAME:

JEFF DRIVEN

ADDRESS (home)

1443 HORRELL

CITY

McKINLEYVILLE

STATE

CA

ZIP

95519

REPRESENTING (name of organization or agency)

I would like to make the following comments regarding the Mad River Bridges Replacement Project.

LOOKS VERY GOOD, HOPE YOU CAN GET STARTED
RIGHT AWAY

NOTE: Please submit comments by: January 9, 2004

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)
PUBLIC MEETING
MAD RIVER BRIDGES REPLACEMENT PROJECT

NAME:

LINDA GLEYE

ADDRESS (home)

1809 North Bank Rd

CITY

McKinleyville

STATE

ZIP

95519

REPRESENTING (name of organization or agency)

I would like to make the following comments regarding the Mad River Bridges Replacement Project.

1) Please make all intersections from
North Bank to Central with STOP
signs. The YIELD currently there
is frequently ignored & therefore
dangerous.

2) make sure road^{exit} closures are
posted more than 1 exit prior
This did NOT happen during last
project & was very frustrating.

NOTE: Please submit comments by: January 9, 2004

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)
PUBLIC MEETING
MAD RIVER BRIDGES REPLACEMENT PROJECT

NAME: Andy Lane
ADDRESS (home) 690 Hunts Dr. CITY McKinleyville STATE CA ZIP 95519
REPRESENTING (name of organization or agency)

I would like to make the following comments regarding the Mad River Bridges Replacement Project.
Thank you for your work - it looks very thorough.
I like the Alternative #2, moving the new bridges to the West
That should help with the now dangerous intersection of North Bank Road & Central Ave.

NOTE: Please submit comments by: January 9, 2004

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)
PUBLIC MEETING
MAD RIVER BRIDGES REPLACEMENT PROJECT

NAME: Scott Kelly
ADDRESS (home) 2111 Crystal Way CITY McKinleyville STATE CA ZIP 95519
REPRESENTING (name of organization or agency) Humboldt Bay Bicycle Commuters Association

I would like to make the following comments regarding the Mad River Bridges Replacement Project.
Recommend the Multipurpose Walkway connect to a new sidewalk up the hill of northbound Central Avenue.
If a sidewalk is not constructed, pedestrians will be using the shoulder of the road - not a good situation.

NOTE: Please submit comments by: January 9, 2004

X. LIST OF PREPARERS

The following personnel were primarily responsible for the preparation of the Draft Initial Study and Negative Declaration:

Lena Ashley	North Region Environmental Services Office Chief
Deborah L. Harmon	Environmental Management Chief
Linda Pirola	Environmental Coordinator
Melinda Molnar	Biology
Kelley Garrett	Biology
Chris Holm	NPDES – Water Quality
Laura Lazzarotto	Landscape Architecture
Andrea Galvin	Architectural History
Sara Atchley	Cultural Resources
Isaac Leyva	Geology
Jon Hedlund	Hazardous Waste/Materials
Sebastian Cohen, P.E.	Hydrology
Donald D. Jones, P.E.	Floodplain Report, PSOMAS Consultants
Keith Pommerenck, P.E.	Noise
Eric Wong, P.E.	Design

Attachment A Environmental Significance Checklist

Environmental Significance Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VII. HAZARDS AND HAZARDOUS MATERIALS –

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XI. NOISE –

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XII. POPULATION AND HOUSING -- Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	--	------------------------------	-----------

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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XIII. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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XIV. RECREATION –

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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XV. TRANSPORTATION/TRAFFIC -- Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVI. UTILITIES AND SERVICE SYSTEMS –

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVII. MANDATORY FINDINGS OF SIGNIFICANCE –

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Attachment B Figures 1 through 7

Figure 1. Location Map

Figure 2. Northbound Bridge Photo

Figure 3. Project Layout Plan, Sheets 1 and 2

Figure 4. Bridge Cross Section

Figure 5. Culvert Location Map

Figure 6. North and Southbound Guardrails

Figure 7. Sensitive Noise Receptors

**Mad River Bridges Replacement
On-Site Wetland and Riparian
Mitigation and Monitoring Plan**



**Mad River Bridges Replacement, Humboldt County
Between Arcata and McKinleyville
On State Route 101
01-HUM-101-PM 89.1/90.4
Township 6N, Range 1E, W ½ of Section 8
01-296101**

November, 2007



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Attachments

- Attachment 1. Mad River Bridges Replacement Project Planting Palette
- Attachment 2. Baseline Datasheets

PURPOSE OF COMPENSATORY MITIGATION PROJECT

Proposed construction of the Mad River Bridges Replacement Project is anticipated to require a four-year construction scenario and will result in permanent impacts to approximately 0.04 acre of United States Army Corps of Engineers (USACE) vegetation at the Mad River Bridges site, as well as temporary impacts of approximately 0.02 acre. Also, up to 2.1 acre of temporary impacts to USACE jurisdictional other waters of the United States are anticipated to occur in each construction year. In the spring of 2007, a re-evaluation of less-than-three-parameter coastal wetlands was performed; temporary and permanent impacts to additional coastal wetlands (less-than-three-parameter wetland) of up to 1.82 acre, as a result of project construction, are now anticipated.

While all USACE jurisdictional impacts are proposed to be fully mitigated on site, off-site mitigation is proposed to satisfy the recommendations of the California Coastal Commission staff for a 4:1 mitigation ratio for the proposed project¹. A conceptual off-site wetland mitigation plan has been prepared. (See Old Samoa Conceptual Mitigation Plan, November 2007.)

This report fully describes the on-site portion of the Mad River Bridges wetland mitigation package. The proposed wetland creation design will utilize an area of 0.34 acres to create a minimum 0.04-acre USACE wetland and 0.28-acre less-than-three parameter (coastal) wetland. Also, up to 1.72 acres of riparian restoration will be accomplished on site post project construction. See On-Site Wetland and Riparian Mitigation mapping, attached.

The proposed habitat restoration has been modeled from a pre-construction baseline vegetation sampling of existing wetland and riparian areas within the project area. Vegetation sampling was conducted in the spring of 2007. Habitat types consist of Freshwater Marsh² and Red Alder/Black Cottonwood Riparian Forest. (Vegetation types are based on the California Department of Fish and Game, Natural Diversity Database Natural Communities List, 2003.) Under the existing bridges, riparian

¹ An additional, approximate 5.4 acres of off-site coastal wetland credits are anticipated to be necessary. Of the anticipated 5.4 acres of coastal wetland mitigation needed, 0.24 acre is proposed as a 4:1 mitigation for the combined permanent and temporary impacts to approximately 0.06 acre of less-than-three parameter wetland that cannot be mitigated on-site. The remaining 5.16 acres of off-site mitigation (in combination with the 1.72 acres of riparian restoration to be accomplished on-site at Mad River bridges) will facilitate a 4:1 mitigation ratio for the combined total permanent and temporary impacts to riparian vegetation of 1.72 acres. It is proposed to utilize the Old Samoa Parcel on SR 255, to satisfy all off-site coastal wetland mitigation necessary for the proposed project.

² Freshwater Marsh is designated within the California Department of Fish and Game, Natural Diversity Database as a sensitive vegetation type. However, the area of Freshwater Marsh to be affected by the project is neither extensive nor of high quality due to disturbance from roadway development and on-going maintenance, as well as other human induced factors.

vegetation is comprised almost exclusively riparian understory species due to height restrictions and past bridge construction clearing. Further, within the project area's less-than-three parameter wetlands, non-native wetland species are predominant as a result of on-going agricultural and rural residential development.

PROJECT REQUIRING MITIGATION

Location

The Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans) are proposing replacement of the Mad River Bridges on State Route 101 in Humboldt County. The proposed project is located between the towns of Arcata and McKinleyville on State Route (SR) 101, between postmiles (PM) 89.1/90.4 (see Exhibits 1 and 2, pages 19 and 20).

As described in the Summary Wetland Report prepared for the project (September 2005), Caltrans performed wetland delineation within the project study area. Verification of the Caltrans mapped jurisdictional boundaries was received from the USACE (File #283960N). Additionally, a supplemental delineation of less-than-three parameter wetlands has been performed (Mad River Bridges Supplemental Coastal Wetland Delineation, July 2007). See attached Vegetation Mapping and USACE Verification Mapping.

Project Summary

Caltrans has determined that the Mad River Bridges are structurally deficient in that neither the northbound nor southbound bridge meet current scour, seismic or geometric guidelines. Replacement of the structures is proposed to prevent further degradation of the bridges and to increase highway safety in the area. In addition to replacement of the bridges, modifications will be required to on-ramps and off-ramps. The project site is an area of approximately 20 acres. The project is expected to begin construction in 2008; a four-year construction scenario is anticipated.

The project requires construction within the Mad River itself, as well as adjacent riparian areas, wetlands and uplands. Because of the project's anticipated four-year construction scenario, impacts have been tabulated by year of construction impact, in an effort to articulate the extent of temporal impacts to jurisdictional resources due to project construction. See tables 1 and 2 (pages 7-8).

Site Characteristics

The project site is within the coastal floodplain, adjacent to the marine terraces of McKinleyville. The Mad River bridges span the Mad River approximately two miles

upstream of the river's terminus at the Pacific Ocean. In this section of rural highway, much of the landscape has been developed for agriculture and rural residential housing, with inclusions of commercial land use. The greater project vicinity has been extensively manipulated such that natural vegetation and habitat types have become extirpated or fragmented. Within the project area, the predominate vegetation type is Non-native Grassland which is actively managed for livestock grazing and haying. There are secondary vegetation types of Red Alder Riparian Forest interfacing with Black Cottonwood Riparian Forest along the Mad River riparian corridor, and Coastal Freshwater Marsh in low-gradient areas (such as ditches and swales).

Natural waters, which occur on-site, outside the Mad River itself, originate in the northeast project quadrant, in the McKinleyville bluff. These waters seep out of the hill slope and are then picked up in roadside ditches running along Central Avenue and Route 200. The waters are then carried via corrugated metal pipes (CMP's) under Central Avenue and Route 200, to outlet south of the Route 101/Route 200 intersection. Since the topography is flat, emergent wetlands have formed within engineered ditches at the CMP outlets. (Emergent wetlands at the site are classified by the Cowardin system as Riverine Lower Perennial Emergent Persistent.)

The emergent wetlands are dominated by Pacific water-parsley (*Oenanthe sarmentosa*) and small-flowered bulrush (*Scirpus microcarpus*). Adjacent to the ditches is a less-than-three-parameter coastal wetland that exhibits exotic vegetation as the dominant species such as velvet grass (*Holcus lanatus*), creeping buttercup (*Ranunculus repens*), and Himalayan blackberry (*Rubus armeniacus*, formerly *discolor*). Waters exiting the emergent wetland are conveyed in a straight u-shaped ditch to outlet onto the north bank of the Mad River.

Because the wetlands are situated within the working highway right-of-way, the majority of emergent wetland (Freshwater Marsh) and less-than-three-parameter wetland within the project footprint are subject to a mowing maintenance regime. However, the extant wetlands do provide for the following functions and values: flood flow attenuation and storage; sediment retention and water filtration benefits; ground water replenishment, and beneficial habitats for birds and small mammals.

A well-developed riparian corridor exists adjacent to the river, which is predominately vegetated by red alder (*Alnus rubra*), Hooker's willow (*Salix hookeriana*), and Pacific willow (*Salix lucida* ssp. *lasiandra*). A few mature black cottonwood trees (*Populus balsamifera* ssp. *trichocarpa*) and Oregon ash (*Fraxinus latifolia*) exist up and downstream of the existing bridges. The majority of riparian vegetation underneath the existing bridges is comprised of low-growing, shade-tolerant shrubs and herbs. Native species predominate under the existing bridges at the south bank (thimbleberry, [*Rubus parviflorus*], figwort [*Scrophularia californica*], stinging nettle [*Urtica dioica*]), while non-native species are predominate under the existing bridges on the north bank (velvet grass, Himalayan blackberry). The riparian corridor is a component of designated

critical habitat for the Southern Oregon/Northern California Coast ESU coho (*Oncorhynchus kisutch*), as well as the California Coastal ESU Chinook (*O. tshawytscha*) and Northern California ESU steelhead (*O. mykiss*).

MITIGATION DESIGN

As mitigation for impacts to USACE wetlands and additional coastal wetlands affected in Year 4 of project construction, the project proposes to restore self-sustaining wetland within the project footprint, at the northeast project quadrant, adjacent to existing waters mapped as Water A (see Vegetation Mapping and Exhibit 5, Wetland Layout and Typical Cross Section). Construction of the new bridges will be just west of the existing bridge structures, requiring a new alignment of roadway at the bridge on and off-ramps. In the northeast project quadrant, portions of the old alignment will be obliterated and approximately 11,000 cubic yards of fill material will be excavated and removed. The existing fill slope is dominated by non-native and non-regional native species (Himalayan blackberry and Monterey pine [*Pinus radiata*] respectively). Excavation of the fill slope will facilitate a footprint of up to 0.34 acres available for wetland creation.

Natural hydrology for the constructed wetlands is available on-site by realigning the waters currently conveyed in the straight u-shaped ditch (Water A) into a much wider channel area of approximately 0.34 acres. Design elevation for the newly constructed outlet of waters (conveyed under the proposed pedestrian path) will mimic the flow line of the adjacent, u-shaped ditch. In an effort to increase wetland habitat diversity, over a distance of a 100' run, elevation will gradually drop 12", creating a low-gradient ponded area. Wetland design will allow Water A to function as an overflow channel.

Wetland design will allow waters to remain on site longer, increasing wetland area, as well as the function and value of existing waters. These waters (originating in the bluffs above the site, but also including some roadside runoff) are mostly ephemeral, but some water does flow year-round. It is anticipated that a minimum 0.04 acres of emergent wetland will form in the creation area, as well as a minimum 0.28 acres of additional less-than-three-parameter coastal wetland. The first 16 inches of wetland topsoils (wetland soil profiles indicate a topsoil layer of greater than 12 inches) will be salvaged from the area at the north end of the proposed pedestrian path and stockpiled for use in the restored area.

The project proposes to restore 1.72 acres of riparian vegetation, both under, as well as adjacent to, the new bridge structures. Low growing and shade tolerant species that can tolerate a slight rain shadow effect from the overhead bridge decks will be utilized in revegetation under the new bridge structures. See Exhibit 6, On-Site Wetland and Riparian Restoration Mapping.

**Table 1.) Years One to Three: Mad River Bridges Project Construction
Adverse Impacts to Jurisdictional Wetlands/Waters and Proposed Mitigation
(Units given in acres).**

Identifier (See attached Impact Mapping and Surface Water Flow Diversion)	Temporary Impact	Permanent Impact	Proposed Mitigation
USACE Jurisdictional Wetlands and other Waters of the US			
Water C (scour pool at existing pier footing)		0.02	New scour feature will be constructed downstream of existing.
Various Impacts to River Channel in Every Year	2.1		None.
Total	2.1	0.0³	Construct new scour feature⁴.
Additional Coastal (<3 parameter) Wetlands			
Polygon 1, 21 and 24 (riparian)		0.35	Restoration on-site 1:1 post impact, and mitigate off-site 3:1.
Polygon 2 (<3 parameter wetland)		0.01	Mitigate off-site at 4:1.
Polygon 34, 35 and 16 (<3 parameter wetland)	0.05 ⁵		“
Polygon 17, 18, 22, 23, 27, 36, 37 and 38 (riparian)	0.55		Restoration on-site 1:1 post impact, and mitigate off-site 3:1.
Polygon 19 and 26 (non-woody riparian)	0.22		”
Polygon 20 and 25 (non-woody riparian)		0.11	”
Polygon 28, 29, 30, 31, 32 and 33 (riparian)		0.43	”
Total	0.82	0.90	<Three parameter wetland mitigation OFF-SITE = 0.24 acre; Riparian restoration ON-SITE = 1.72 acres, and Riparian mitigation OFF-SITE = 5.16 acres.

³ The proposed new bridge structures will result in a decrease of permanent fill within the river of 0.06 acre (versus the existing structures). Therefore, the project will result in no permanent loss to waters of the US.

⁴ No mitigation is proposed for temporary impacts to Waters of the US, or for 0.01 acres permanent impact to Waters of the US.

⁵ Coastal Commission staff has stated that temporary impacts lasting greater than one year should be mitigated at the same rate as permanent impacts (a 4:1 ratio).

Table 2.) Year Four: Mad River Bridges Project Construction Adverse Impacts to Jurisdictional Wetlands/Waters and Proposed Mitigation
(Units given in acres).

Identifier (See attached Impact Mapping)	Temporary Impact	Permanent Impact	Proposed Mitigation
USACE Jurisdictional Wetlands and other Waters			
Polygon 4 (emergent persistent)		0.04	On-site USACE wetland creation at 1:1, and on-site less-than-three-parameter wetland creation at 3:1. ⁶
Polygon 3 and 7 (emergent persistent)	0.02		Restore on-site 1:1 (one season impact; area will immediately re-establish).
Various Impacts to River Channel in Every Year	2.1		None. ⁷
Total	2.12	0.04	USACE On-site wetland creation = 0.04 acre And <three parameter wetland creation = 0.12 acre
Additional Coastal (<3 parameter) Wetlands			
Polygon 5 and 6 (<three parameter wetland)		0.03	On-site wetland creation at 4:1 (see footnote 5).
Polygon 8 (riparian)	0.01		Restore on-site 1:1 (one season impact; area will immediately re-establish).
Polygon 9 and 11 (non-woody riparian)	0.05		“
Polygon 10 (non-woody riparian)		0.01	Restoration on-site 1:1 post impact, and mitigate off-site 3:1.
Total	0.06	0.04	Additional Coastal On-site wetland creation = 0.16 acre.

⁶ Wetland impacts associated with Year Four construction could be fully mitigated on-site at a 1:1 ratio (USACE has approved this), however Caltrans anticipates a total 4:1 ratio will be required per Coastal Commission staff review.

⁷ No mitigation is proposed for temporary impacts to Waters of the US.

No mitigation is proposed for temporary project impacts to other waters of the US. Impacts to waters of the US, of up to 2.1 acres, are likely to occur in each year of project construction (See Surface Water Flow Diversion Mapping). These impacts are associated with channel dewatering for construction (within cofferdams), temporary construction access within the river bar, construction of bridge false work, a possible low-water crossing and a proposed sediment basin.

Proposed Compensation Ratios for Created and Restored Habitats

Tables 1 and 2 (pages 7 and 8) identify proposed compensation ratios for both on-site and off-site mitigation for impacts to jurisdictional resources associated with the construction of the Mad River Bridges Replacement.

IMPLEMENTATION PLAN

Site Preparation

Wetland Creation

As part of the demolition of the existing northbound bridge, the old roadway conveying northbound traffic off the structure and onto Central Avenue/Route 200 will be abandoned and obliterated. Fill material will be removed to facilitate wetland creation. The extant riparian vegetation, along the u-shaped ditch, adjacent to the wetland creation area, will continue to be protected in place through the period of site preparation. Stockpiled wetland soils from the area of the proposed pedestrian path will be evenly distributed within the creation area and the wetland basin will be top-dressed with native compost and/or other commercially available, weed-free, organic material.

The area immediately surrounding the wetland basin will be seeded and mulched for erosion control and fenced to exclude cattle. The seed mix will be specified to be weed-free and comprised of regionally appropriate native grasses and/or ephemeral non-native grasses (e.g. cereal grasses). The contractor for the bridges replacement project will be responsible for the erosion control and preparing the wetland creation area for planting.

Riparian Restoration

The ground under the existing, to-be-demolished bridges and the area under the proposed bridges will be ripped to a depth of 18 inches (the areas are likely to be compacted post-project construction). Soil ripping will not occur within 30' landward from the river's top-of-bank. Native compost and/or other commercially available, weed-free, organic material will then be incorporated into the soil as an amendment in preparation for planting. The area will be seeded and mulched for erosion control and fenced to exclude cattle. The seed mix will be specified to be weed-free and comprised of regionally appropriate grasses and/or ephemeral non-native grasses. The contractor

for the bridges replacement project will be responsible for the erosion control and preparing the riparian restoration area for planting.

Restoration Plan

After the proposed bridgework, roadway, and necessary slope excavation have been completed, the new wetland area will be planted and all disturbed riparian areas will be revegetated. Plantings in the wetland creation area will transition by species, as dictated by topography, from emergent wetland species to mesic riparian species. Plantings within the riparian area will transition by species, as dictated by both topography (willows just above the annual high water channel and larger riparian trees further up on the banks) and site specific conditions (e.g. under new bridge deck). The larger riparian trees such as red alder, black cottonwood and Oregon ash will be companion planted with riparian shrubs to ameliorate the open exposure and facilitate development of mature riparian vegetation structure.

Native vascular plant species identified for revegetation use were observed growing in or adjacent to the project site within their respective vegetation types. (See attached *Mad River Bridges Replacement Project Planting Palette*).

In an effort to blend with the surrounding landscape, the planting design will consist of species grouped in a natural manner that mimics adjacent native vegetative types and cover. Plantings will be spaced an average of 14 feet on-center for large trees, ten to eight feet on-center for small trees and shrubs, and four feet-on-center for areas planted with herbaceous plants. Container plant material will be specified to have been purchased from native plant nurseries and propagated from coastal and regional appropriate stock. Willows cuttings will be taken in or adjacent to the project area and harvesting will be well dispersed across the population for genetic and sexual diversity with no more than 20% of stems removed from any individual willow.

Following installation, plants will immediately be deep watered (soils will be saturated beyond the first several inches). Watering will then occur twice a month during the period June through September, in the first and second years post-planting. Supplemental watering (water truck or hand watering) after two years post-planting may be performed as needed based on site specific conditions or yearly climatic variations. However, it is anticipated that after the second full year, plants should have established and be self-sustaining. Supplemental watering, post-plant establishment is not recommended for native plants that need to acclimate to natural site conditions. Replaced plant material will be labeled with the month and year of replanting so that replaced plantings will have their watering start at year one in accordance with their planting date.

The majority of water for use during the plant establishment period is proposed to be drafted from the Mad River via a small fire pump (66.0 gal/min.) and hoses. Water

drafting for plant watering will occur between June 15 to October 15 and will include the following conditions:

1. No more than 1 cubic yard of stream gravel and/or cobble will be displaced with hand tools, in order to deepen an area in the active channel for drafting. The pool will be back-filled immediately when either there is the possibility of trapping fish during low flows or at the conclusion of yearly drafting operations.
2. Bypass flows in the Mad River shall remain at 2.0 cubic feet per second (CFS).
3. Diversion rate shall not exceed 10 percent of the above surface flow or pool volume. A pump rate of 66.0 gal/min would require less than 0.22 CFS flow to exceed 10 percent of the above surface flow from the Mad River (unlikely impact).
4. The intake hose will be wire mesh screened with round/square openings not to exceed 3/32 inches in diameter.
5. A screen area of at least 1.8 square feet will be utilized to prevent the intake approach velocity from exceeding 0.33 FPS. This would be accomplished by a custom screen on the intake or by utilizing a screened spring box from which drafting would occur.

The water drafting activity and proposed conditions will be included in the project's DFG notification for a Lake or Streambed Alteration Agreement (Fish and Game Code Section 1600 et. seq.).

Invasive Species Eradication

In coordination with the planting effort, invasive non-native species⁸ will be eradicated and/or controlled, as feasible. Himalayan blackberry was found widely distributed on the project site. California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory has assigned Himalayan blackberry a threat category of high with "A" (severe) ratings in its invasiveness, environmental impact and California distribution. Consultation with the Humboldt County Agricultural Commission has determined that it would be impracticable to attempt to eradicate Himalayan blackberry at this site, as the species is widespread in the greater project area. However, effort will be made to control the presence of Himalayan blackberry within both the wetland creation and the restored riparian areas.

Site preparation (removal of fill and grading) will eliminate most of the Himalayan blackberry in the project area. Physical removal methods (hand pulling and/or use of hand tools) and monitoring will be utilized throughout the mitigation monitoring period to control the spread of Himalayan blackberry into the planted areas.

⁸ Taxa rated as a High or Moderate threat (List A/List B) in California Invasive Plant Council's California Invasive Plant Inventory.

Small populations of periwinkle (*Vinca major*), yellow water iris (*Iris pseudacorus*) and English ivy (*Hedera helix*) were also found within the project limits. Cal-IPC has assigned English ivy a threat category of high with “A” (severe) ratings in its invasiveness, environmental impact and California distribution. Periwinkle has a Cal-IPC threat category of moderate with “B” (moderate) ratings in its invasiveness, environmental impact and California distribution. Yellow water iris has a Cal-IPC threat category of limited with “B” (moderate) rating in its invasiveness, and “C” (limited) rating in its environmental impact and California distribution. Periwinkle was found adjacent to Route 200 and along Central Avenue. Yellow iris was found within the wetland at the northeast project quadrant, while English ivy was found within a coast redwood (*Sequoia sempervirens*) stand adjacent to the same wetland area.

Portions of this iris population will be destroyed when the north end of the pedestrian path is constructed. Some invasive plant root or seed material may be present in the salvaged wetland topsoils. During the monitoring period, physical removal methods will be employed to eradicate any remaining or subsequently expressed iris, as well as the periwinkle and ivy.

Planted areas will be weeded in the fall and spring for the first two years post-planting, and as needed thereafter until the final revegetation success criteria have been achieved. Physical control methods will be utilized and no application of chemicals will be authorized.

Implementation Schedule

Site restoration planting will begin after completion of all bridgework, drainage work and roadway work, in early 2012⁹ (depending on potential winter weather delays, mechanical breakdowns, etc...). Proposed plantings are likely to be completed within several weeks; planting will occur in early spring (February or March) to avoid impacts from potential winter flood events. Monitoring of the success of the planting and weed eradication will begin one year after the site restoration is implemented.

Initial site planting, watering, and invasive plant eradication/control is likely to be conducted under contract with the California Conservation Corps, and will be overseen by qualified Caltrans personnel (either a Caltrans Biologist and/or Landscape Architect and/or Revegetation Specialist).

QUALITATIVE MONITORING/SUCCESS CRITERIA

The monitoring goal is to ensure that wetland creation and riparian restoration goals and management objectives are met, and to provide a mechanism for corrective action if the goals and objectives are not being met. This goal will be evaluated through census or

⁹ Note: site plantings will occur after the close of the main construction contract due to potential safety and liability concerns.

quantitative sampling monitoring. Census monitoring will be used for small and/or distinct areas that lend themselves to complete censusing, for example areas equal to or less than 0.25 acre. Quantitative sampling monitoring will be used for larger areas that do not lend themselves to a complete census and require sampling. Monitoring will characterize extant conditions in the field, and data collection will be reproducible and collected in a consistent manner (e.g. field sampling forms and cover percent visual charts).

Success criteria for monitoring have been developed for the vegetation types impacted by project activities. Success criteria are based on vegetation baseline data and revegetation management objectives. The objectives utilized vegetation baseline data to determine native plant diversity, distribution, and cover of the impacted vegetation types. Vegetation baseline data was collected within the project area in 2007. (Baseline datasheets are attached.)

Revegetation Goals and Monitoring Objectives

The project revegetation goal is to restore a self-sustaining native vegetation cover, appropriate to the vegetation type, in sensitive habitat areas that have been disturbed by project construction. It is likely given the adjacent pasture and rural development that a non-native component will always be present at some level, so revegetation goals will be for a dominant native vegetation cover. The monitoring objectives are:

- 1.) Ensure that revegetation goals are met (monitor and provide a mechanism for corrective action if the objectives are not being met).
- 2.) Conditions extant in the field are represented by the data; such that the monitoring effort results in representative, accurate, and complete data.
- 3.) Data collection is reproducible and collected in a consistent manner (such as field sampling forms and vegetation cover percent visual charts).

Success Criteria

Success criteria will differ based on revegetation objectives as well as vegetation type and stratum due to natural variation in species composition, cover and diversity. Revegetation objectives and success criteria were developed for existing stratum covers greater or equal to 10 percent for all targeted vegetation types. See Table 3, page 15.

Revegetation Objective (change/trend): Increase relative canopy cover of viable¹⁰ native plants in all vegetation types to target cover percentages as listed in Table 3, by year five, in areas disturbed by project activities. Relative canopycover (proportional cover of one species to total vegetation cover) will be

¹⁰ In this circumstance, viable will be defined as greater than 50% green (live) material.

utilized due to the extended time (10 to 20 years) needed to meet pre-project absolute canopy cover of a well established vegetation type. Initially, revegetated areas will be more open in absolute canopy cover (vertical projection of perimeter of species canopy including gaps relative to ground surface) until the plant material matures and fills in, and relative cover will facilitate an assessment of vegetation cover under these conditions. In addition, establish specific levels of species composition and richness in each vegetation type stratum where applicable.

Sample Objective: 90% confidence to detect increase in native plant cover by vegetation type accepting a 10% false-change error rate.

Monitoring Methods

Monitoring methods will be census or quantitative sampling monitoring, each coupled with a qualitative component of permanent landscape photo points.

Census monitoring will assess relative canopy cover of individual or discrete mats of each species utilizing cover percent visual charts. A grid may be applied to the project area and each cell averaged to facilitate coverage estimates and ensure complete coverage.

Quantitative Sampling Design will utilize a systematic sampling design, and independent-sample one-tailed t-test statistical analysis. The sampling unit will be independently placed quadrats, or point or line intercepts along transects positioned without bias (random start and systematic placement) off of a baseline transect (based on pages 121-126, Elzinga, Salzer and Willoughby 1998).¹¹ Sampling unit will record relative canopy cover of individual or discrete mats of each species. Sampling unit size and shape will be dependent on species of interest, spatial distribution of species, and variability detected between plots. Sampling unit size/shape, and number will be determined through pilot study data collected at the start of initial monitoring activities. Pilot study data will be used to calculate the coefficient of variation (relative measure of variability), and the design with the smallest value will be chosen and if similar the easiest to implement (pages 459-461, Elzinga, Salzer and Willoughby 1998).

At least one reproducible landscape photo point will be established within each distinct revegetation area in year one, three and five to document as-built conditions and vegetation cover changes.

¹¹ Elzinga, C.L., D. W. Salzer, and J.W. Willoughby. 1998. *Measuring and Monitoring Plant Populations*. U.S. Bureau of Land Management. Denver, CO.

Table 3.) Success Criteria by Vegetation Type and Stratum.

Vegetation Type/Stratum	Baseline Cover¹²	Target Cover¹³	Species Richness	Species Composition
Red Alder/Black Cottonwood Riparian				
Tree	71%	>60%	At least 4 of the 6 species representative of the vegetation type and stratum.	No single species will constitute >80% of the total coverage. Several tree species dominate and naturally constitute a high percent of composition.
Shrub	78%	>60%	At least 4 of the 6 species representative of the vegetation type and stratum.	No single species will constitute >60% of the total coverage. Several shrub species dominate and naturally constitute a high percent of composition.
Herb	<10%	N/A	N/A	N/A
Riparian Under Bridge Decks				
Shrub	60 – 80 %	>50%	At least 4 of the 6 species representative of the vegetation type and stratum.	No single species will constitute >60% of the total coverage. Several shrub species dominate and naturally constitute a high percent of composition.
Herb	10%	10%	At least 4 of the 6 species representative of the vegetation type and stratum.	No single species will constitute >60% of the total coverage. Several herbaceous species dominate and naturally constitute a high percent of composition.
Coastal Freshwater Marsh				
Herb	95%	>80%	At least 4 of the 7 species representative of the vegetation type and stratum.	No single species will constitute >40% of the total coverage.

¹² Absolute canopy cover.

¹³ Relative canopy cover.

Monitoring Schedule

Census and/or quantitative sampling will be conducted in year one, three and five after the site restoration is implemented. Monitoring will start the first year after revegetation activities.

REMEDIAL ACTIONS/ADAPTIVE MANAGEMENT

If the restoration site is not meeting its success criteria due to low plant survival and/or coverage, plants will be added or replaced during the early spring. Natural recruitment or transplanting of materials collected on-site, but outside the restoration effort, may be utilized to facilitate native vegetation recovery. Some level of natural recruitment is likely to occur on site, and planting efforts will work in conjunction with any volunteer native plant expression and colonization.

If any particular planted species within the restoration areas demonstrates a failure-to-thrive trend (less than 50% green material) then other appropriate native species, as deemed appropriate by a Caltrans Biologist or Revegetation Specialist, may be substituted within the planted area.

MONITORING REPORTS

As-Built Report

Within 30 days of the completed installation of the mitigation planting and revegetation, a report will be sent to the USACE, the California Coastal Commission and the California Department of Fish and Game (collectively Agencies). This report will describe field implementation of the proposed plantings, including any installation problems encountered and resolutions. The as-built report will describe what species were planted, where they were planted, what type of material was planted and to what specifications. Landscape photos of the planting implementation (by vegetation type) will be included in the report.

Remedial or adaptive management measures may become evident and necessary during monitoring. If these measures modify the initial species planted or coverage then the as-built plan will be revised to reflect the new baseline. As-built plans will be revised to show specifically how the revegetation plan was modified, and then submitted within 60 days of any adaptive management measures initiated.

Interim Monitoring Reports

Interim monitoring reports will be prepared by the Caltrans Biologist or Revegetation Specialist for review by the Agencies in year one and three post restoration implementation. Interim monitoring reports will be submitted to the Agencies by

December 31st in the monitoring year. Submissions will include the following: Jurisdictional Agency file number(s); name(s) of person who prepared report and who performed the monitoring; monitoring dates, methodology and a data summary.

The interim monitoring report will describe the previous years monitoring results and any corrective actions that were taken, and will evaluate and summarize the data for the current year compared to previous years. The report will specify if the success criteria are being achieved, and if not, any recommended remedial/adaptive management measures. Photo documentation will be included. The first interim monitoring report will be submitted after the restoration area has experienced one full growing season.

A wetland delineation will be conducted by Caltrans prior to the final year's monitoring report to evaluate the success of the on-site wetland creation goal. To be deemed successful a minimum 0.04 acres USACE jurisdiction wetland and a further minimum 0.28 of additional coastal wetland must be present in the creation area. Results of the delineation will be submitted to the Agencies.

FINAL REPORT

A final report will be submitted to the Agencies at the end of the final performance-monitoring period (five years). The report will evaluate how successful the restoration was with regard to riparian revegetation and wetland creation success criteria and objectives. The report will include a compilation of all monitoring data, the as-built report (including revisions) and photo point documentation.

POTENTIAL CONTINGENCY MEASURES

If the final report indicates that the mitigation and revegetation plan has failed to achieve its goals, in part or wholly, based on the plan's defined goals, objectives and success criteria then the cause of the mitigation failure will be identified. This may require re-evaluation of the site conditions as well as development of remedial/adaptive management measures in consultation with the Agencies.

MAINTENANCE

In addition to the proposed monitoring schedule, the overall project site will be inspected by Caltrans staff at least twice annually during the growing season for the period of the mitigation monitoring to assess the following: presence/absence of invasive species; erosion; general plant population health, vandalism, and browse damage.

COMPLETION OF MITIGATION RESPONSIBILITIES

Completion of the on-site mitigation will be demonstrated upon submittal of the final report to the Agencies, documenting achievement of the plan's success criteria. It is anticipated that the final report will be produced in December of 2017. Final compliance will not be accomplished until the Agencies are satisfied, per relevant conditions and requirements.

LONG-TERM MANAGEMENT

Caltrans will maintain the wetland creation area as an Environmentally Sensitive Area in perpetuity. The area will be designated as an Environmentally Sensitive Area and added to the District 1 Caltrans Maintenance Environmentally Sensitive Area (ESA) database. This database is utilized by the Caltrans Maintenance Department to guide activities within sensitive resource areas. The wetland mitigation area will be identified as to location and resource type and prescribed to have no disturbance activities allowed. The mitigation area will be added to the District 1 ESA database at time of wetland construction. Fencing to exclude cattle will be maintained by Caltrans in working condition.

The planted riparian areas within state right-of-way, outside the wetland creation area, will continue to be subject to management under the guidance of the California Environmental Quality Act. Fencing to exclude cattle will be maintained by Caltrans in working condition.

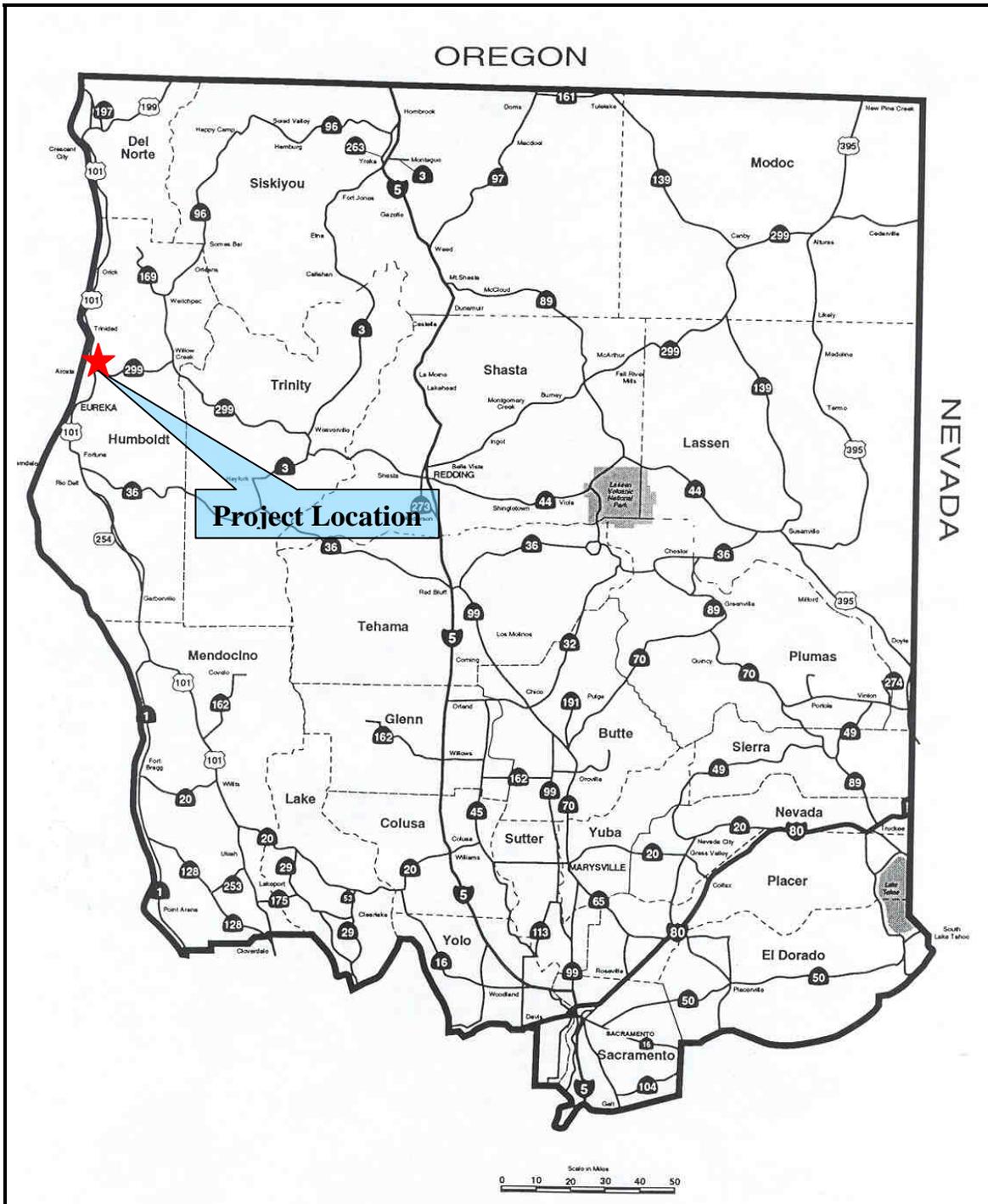


Exhibit 1.
PROJECT VICINITY
 State Route 101, Humboldt County
 PM 89.1/90.4

State of California
 Department of Transportation
 PROJECT #01-296100



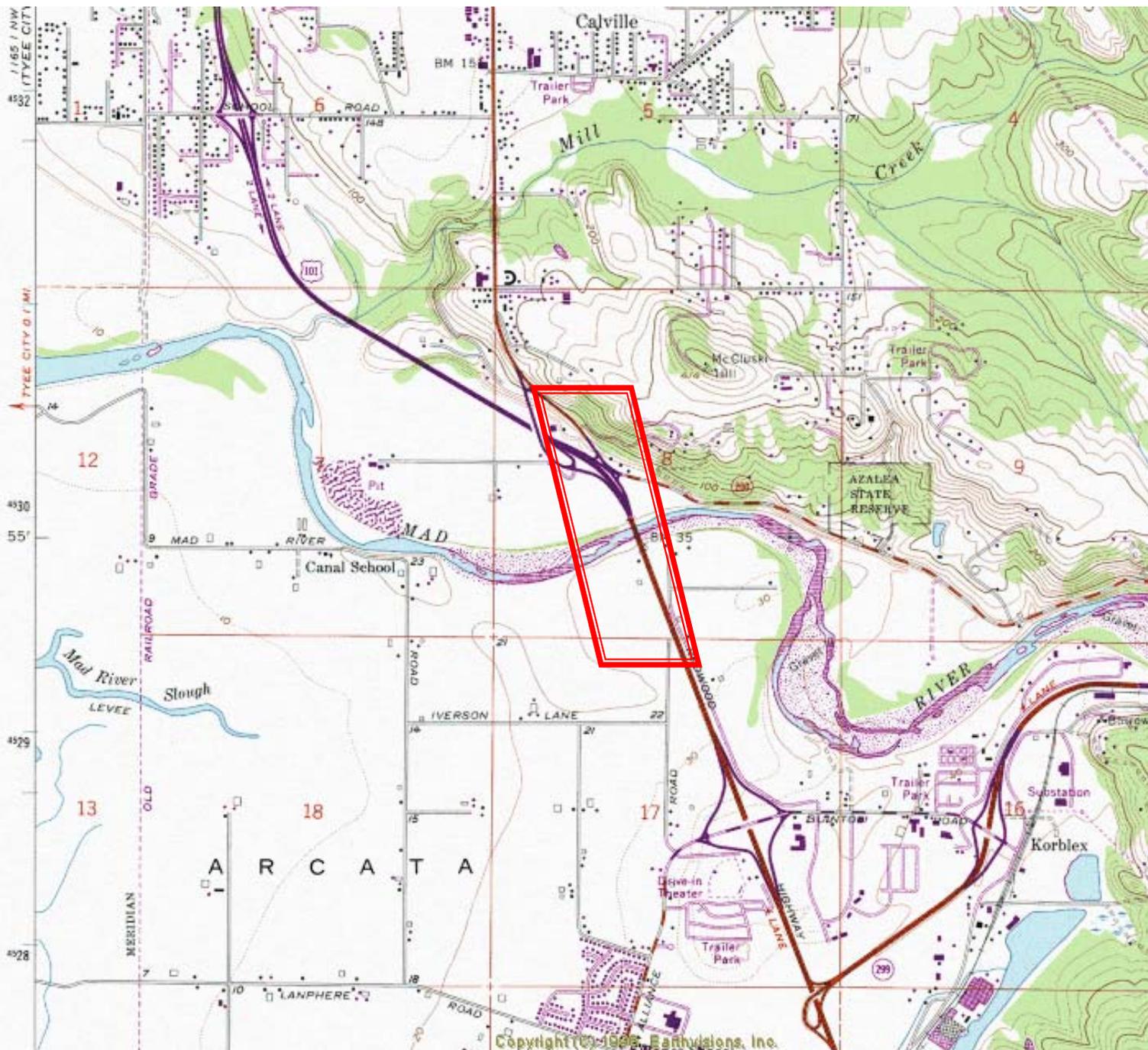


Exhibit 2. PROJECT SITE, portion of the USGS Arcata North quadsheet

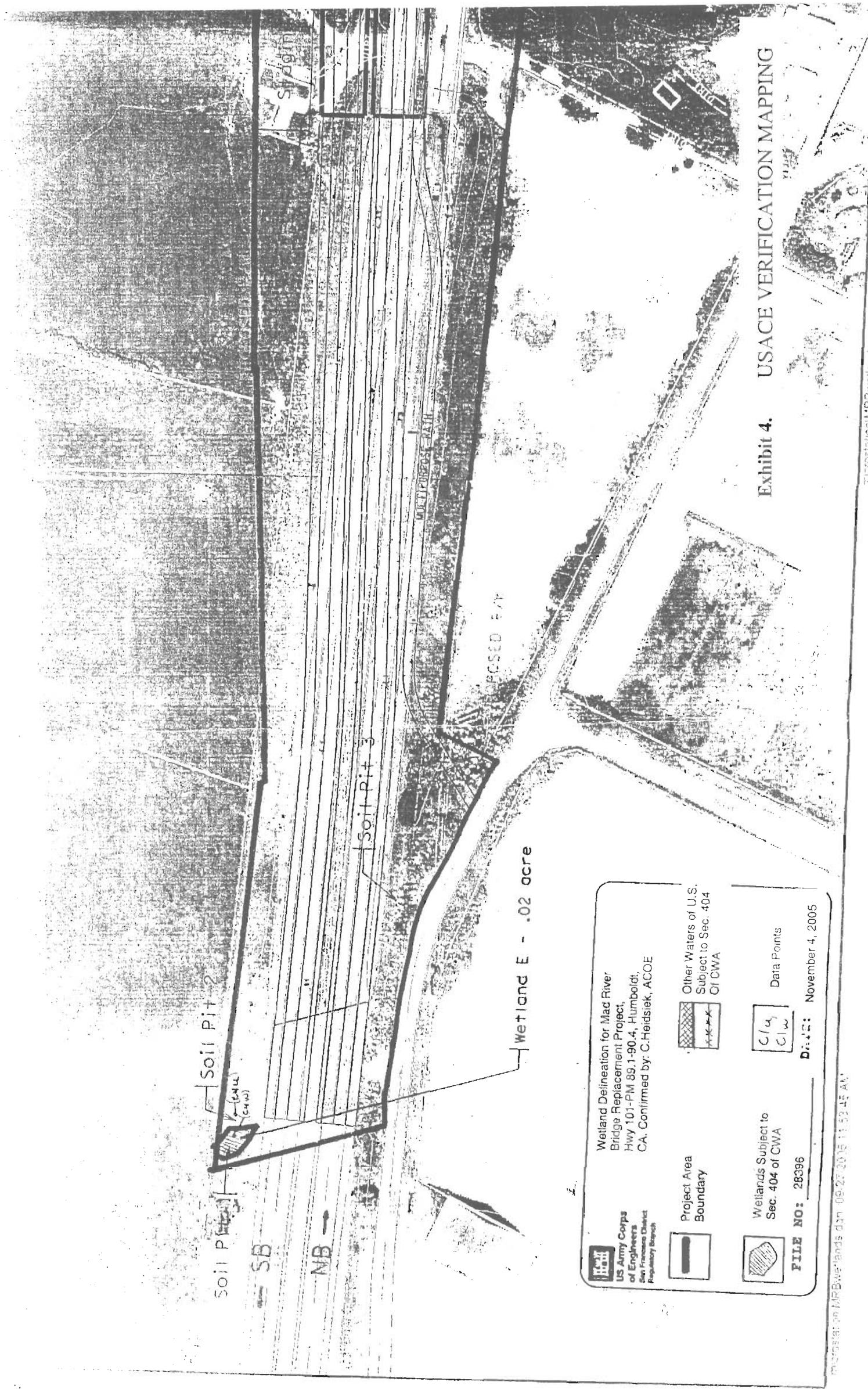


Exhibit 4. USACE VERIFICATION MAPPING


US Army Corps of Engineers
 San Francisco District
 Regulatory Branch

Wetland Delineation for Mad River Bridges Replacement Project, Hwy 101-PM 89,1-90.4, Humboldt, CA. Confirmed by: C. Heidstiek, ACOE

 Project Area Boundary

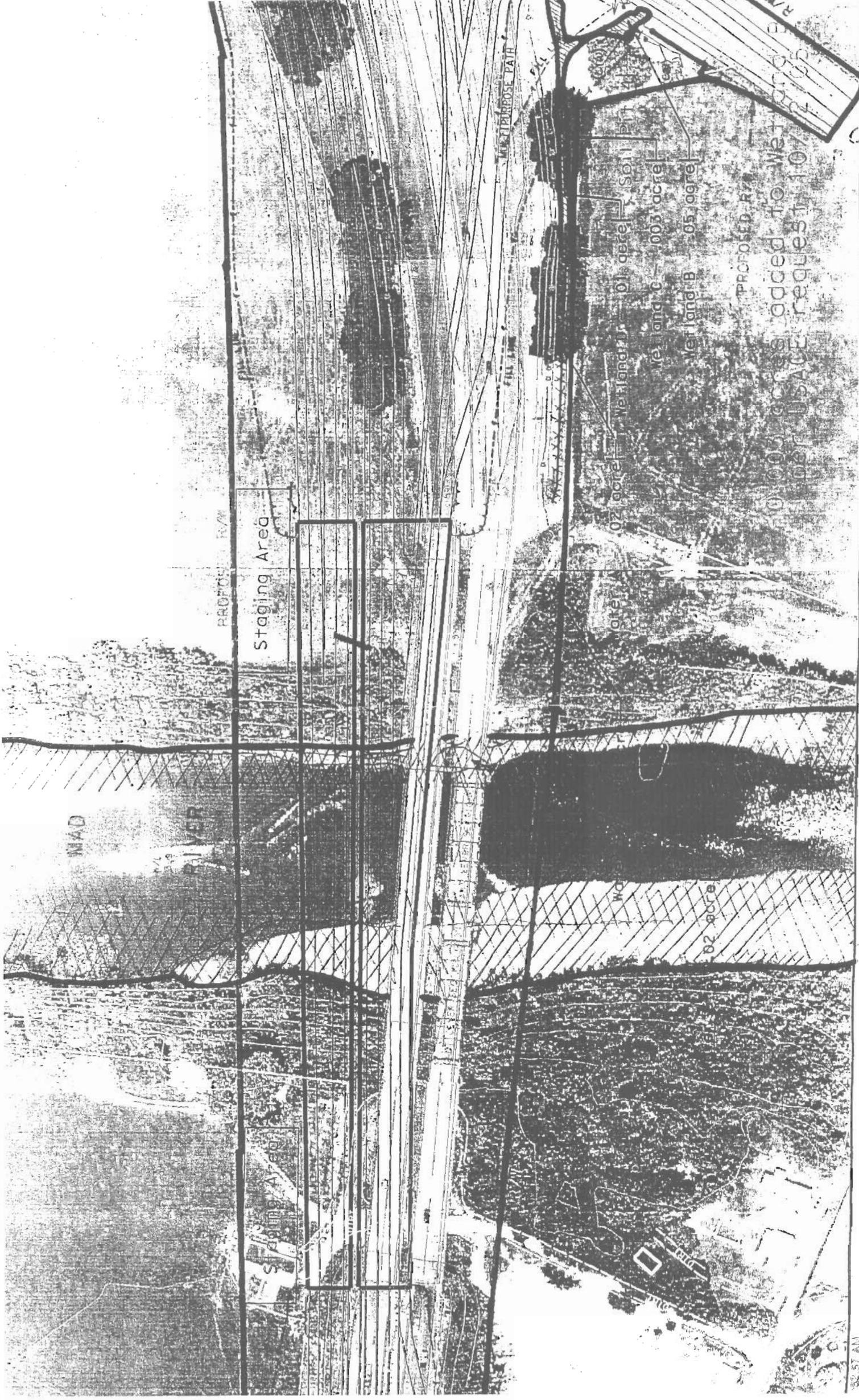
 Wetlands Subject to Sec. 404 of CWA

 Other Waters of U.S. Subject to Sec. 404 of CWA

 Data Points

FILE NO: 28396

Date: November 4, 2005



MAD RIVER

PROPOSED ROAD

Staging Area

Staging Area

MULTIPURPOSE PATH

Wetland A 0.02 acre

Wetland C 0.003 acre

Wetland B 0.05 acre

0.02 acre

PROPOSED R/W

0.009 acre added to Wetland A per USACE request 10/7/05

02:57 AM

microstation\MR\Wetlands.dgn 10/18/2005 09:16:28 AM



Welland Demonstration for Mad River
 Bridge Replacement Project
 Hwy 101-PM 89.1-90.4, Humboldt,
 CA. Confirmed by: C Heidsiek, ACOE



Project Area
 Boundary



Other Waters of U.S.
 Subject to Sec. 404
 of CWA



Wetlands Subject to
 Sec. 404 of CWA



Data Points

FILE NO: 28396

DATE: November 4, 2005

SCALE
 1" = 500'

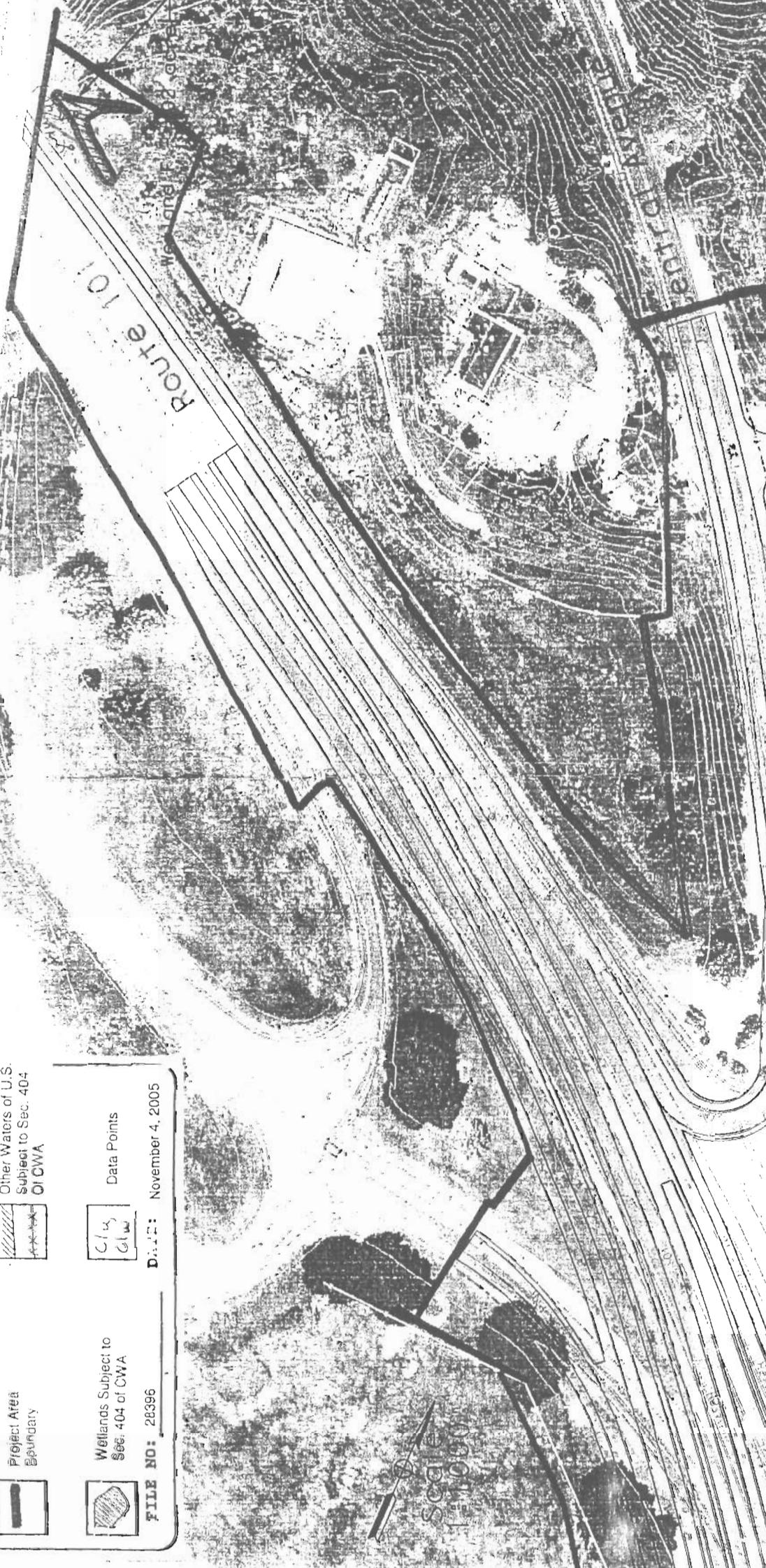
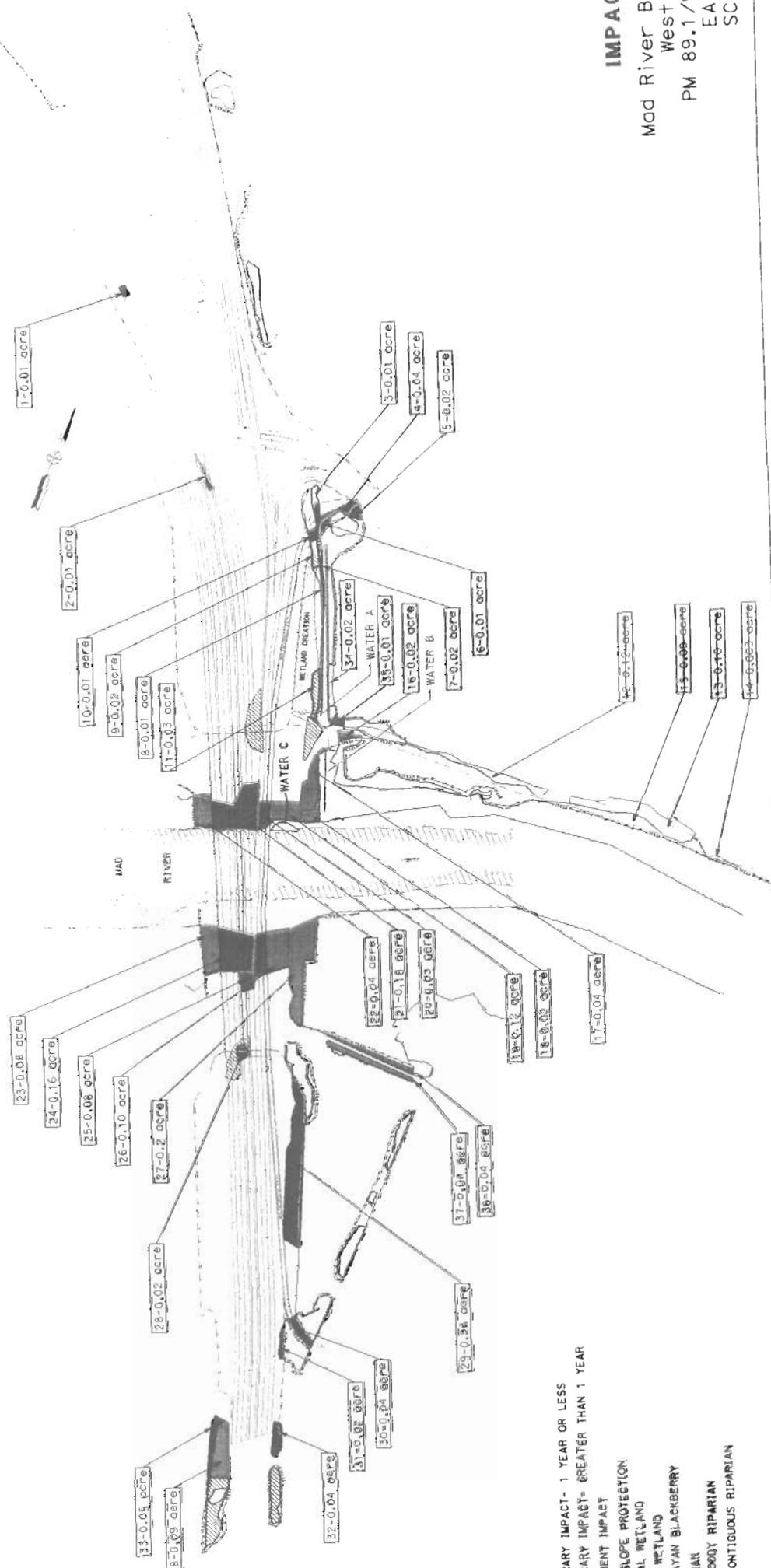


Exhibit 10

IMPACT MAPPING

Mad River Bridges Replacement
 West Alternative
 PM 89.1/90.4 01-HUM-101
 EA 01-296101
 SCALE 1:2000



- LEGEND:**
- TEMPORARY IMPACT- 1 YEAR OR LESS
 - TEMPORARY IMPACT- GREATER THAN 1 YEAR
 - PERMANENT IMPACT
 - ROCK SLOPE PROTECTION
 - CONSTAL WETLAND
 - USACE WETLAND
 - HIMALAYAN BLACKBERRY
 - RIPARIAN
 - NON-WOODY RIPARIAN
 - NON-CONTIGUOUS RIPARIAN

CONSTRUCTION DETAILS
 NO SCALE
C-10

ALL DIMENSIONS ARE IN METERS
 UNLESS OTHERWISE SHOWN

RELATIVE BORDER SCALE: 0 20 40 60 80 100
 USERNAME: ***USER
 DGN FILE: ***PROJECT

EA 296107

CU 0325F

DATE: 00-00-00

WSSR

PROJECT NO: 00-00-00

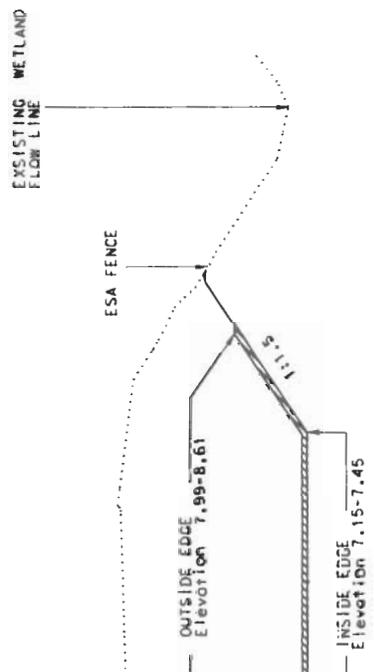
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 NORTH REGION
 OFFICE OF DESIGN, WEST
 DESIGN BRANCH 81

PROJECT ENGINEER
 ERIC W. WONG

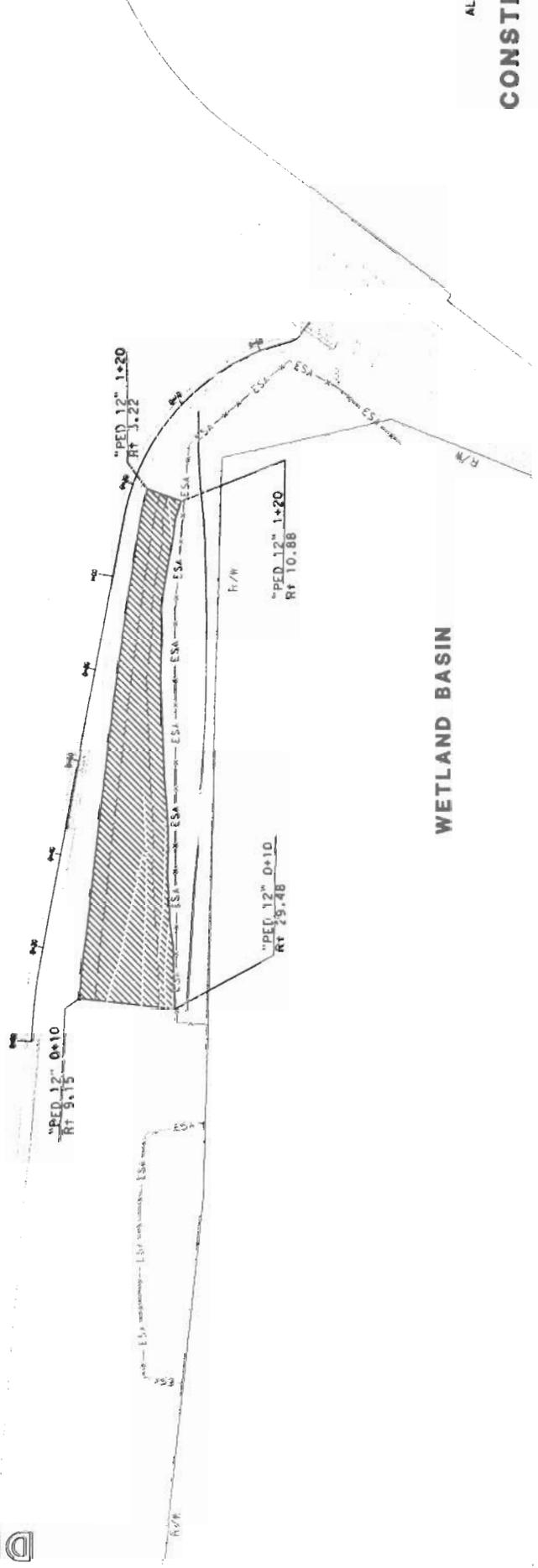
CHECKED BY
 DEST. CHECKED BY

DATE REVISID BY
 DATE REVISID

DRAFT



WETLAND BASIN TYPICAL X- SECTION
"PED 12" 0+10 TO 1+20



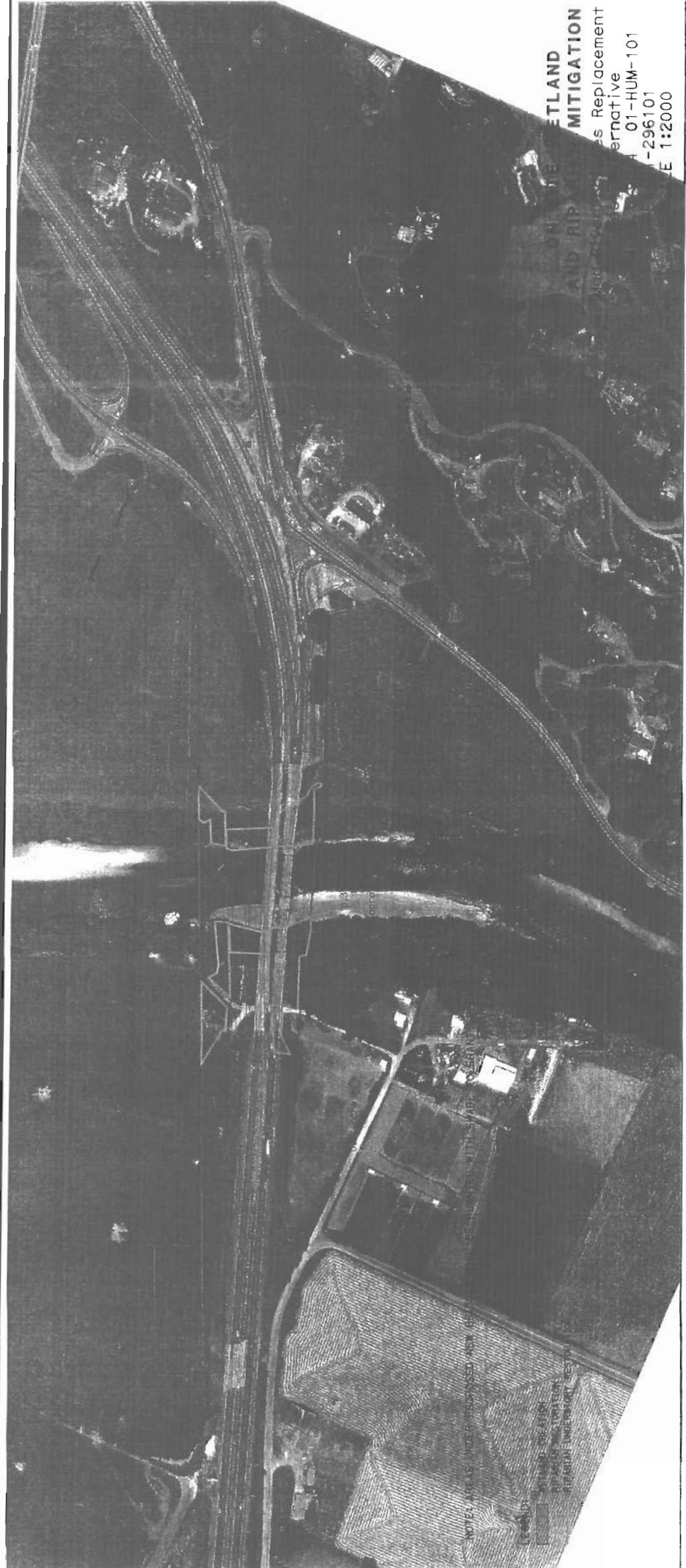
REGISTERED CIVIL ENGINEER
 00-00-00

PLANS APPROVAL DATE
 00-00-00

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To get to the Callouts web site, go to <http://www.dtd.ca.gov>

DIST	COUNTY	ROUTE	STATION PER POST MILE	TOTAL SHEETS
01	Hum	101,200	KP 0+0.00	125

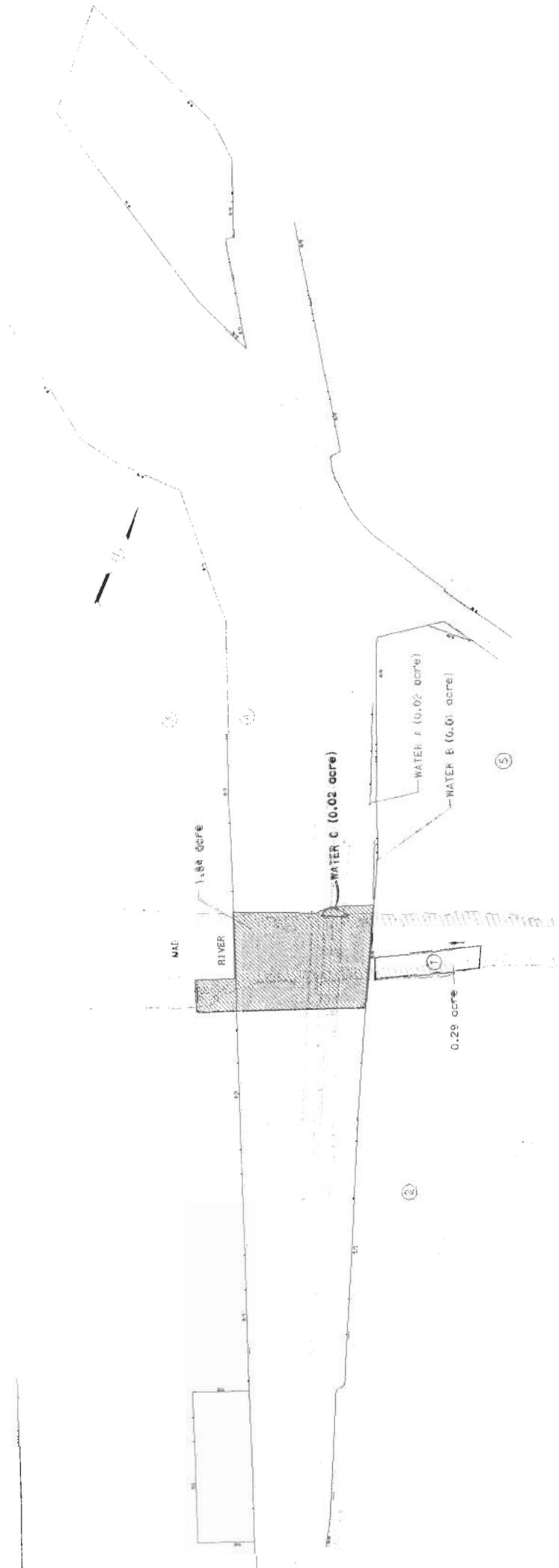


WETLAND
MITIGATION
Wetland Replacement
Alternative
01-HUM-101
-296101
E 1:2000

**SURFACE WATER FLOW
DIVERSION**

Mad River Bridges Replacement
West Alternative
PM 89.1/90.4 01-HUM-101
EA 01-296101
SCALE 1:2000

- LEGEND:
-  CLEARWATER DIVERSION
 -  INFILTRATION BASIN
 -  UPLAND DISCHARGE OF WATER FROM BEWATERING ACTIVITIES



Mad River Bridges Plant Palettes and Prototypes

Please Note: Plant quantities based on fixed unit area due to current unknown final impact and mitigation area.

Red Alder/Black Cottonwood Riparian

Stratum w/ Area Coverage Factor	Scientific Name Common Name	Quantity*	Spacing On-Center	Minimum Container Size
Tree 60%				
40%	<i>Alnus rubra</i> red alder	213	14'	Treepot
5%	<i>Fraxinus latifolia</i> Oregon ash	27	14'	Treepot
10%	<i>Populus balsmifera</i> ssp. <i>trichocarpa</i> black cottonwood	53	14'	Treepot
5%	<i>Sequoia sempervirens</i> coast redwood	27	14'	Treepot
30%	<i>Salix hookeriana</i> Hooker's willow	314	10'	N/A (cuttings)
5%	<i>Salix lucida</i> shining willow	52	10'	N/A (cuttings)
5%	<i>Salix sitchensis</i> Sitka willow	52	10'	N/A (cuttings)
Shrub 35%		0		
15%	<i>Baccharis pilularis</i> coyote brush	143	8'	1 Gallon
15%	<i>Lonicera involucrata</i> var. <i>ledebourii</i> black twinberry	143	8'	1 Gallon
40%	<i>Rubus parviflorus</i> thimbleberry	381	8'	1 Gallon
15%	<i>Rubus spectabilis</i> salmonberry	143	8'	1 Gallon
15%	<i>Sambucus racemosa</i> var. <i>racemosa</i> red elderberry	143	8'	1 Gallon
Herb 5%		0		
15%	<i>Athyrium filix-femina</i> lady fern	82	4'	1 Gallon
15%	<i>Juncus effusus</i> var. <i>pacificus</i> Pacific rush	82	4'	1 Gallon
15%	<i>Juncus patens</i> spreading rush	82	4'	1 Gallon
20%	<i>Polystichum munitum</i> sword fern	109	4'	1 Gallon
20%	<i>Scrophularia californica</i> California figwort	109	4'	4" Square
15%	<i>Stachys ajugoides</i> var. <i>rigida</i> hedge nettle	82	4'	4" Square
Total Plants		2,237		

*Quantities based on 1 acre: to develop final project quantities will require recalculation with the appropriate acreage multiplier (e.g. if mitigation area is 2.4 acres then multiply quantities by 2.4)

Container Dimensions:

Treepot = 3"sq. x 14" deep

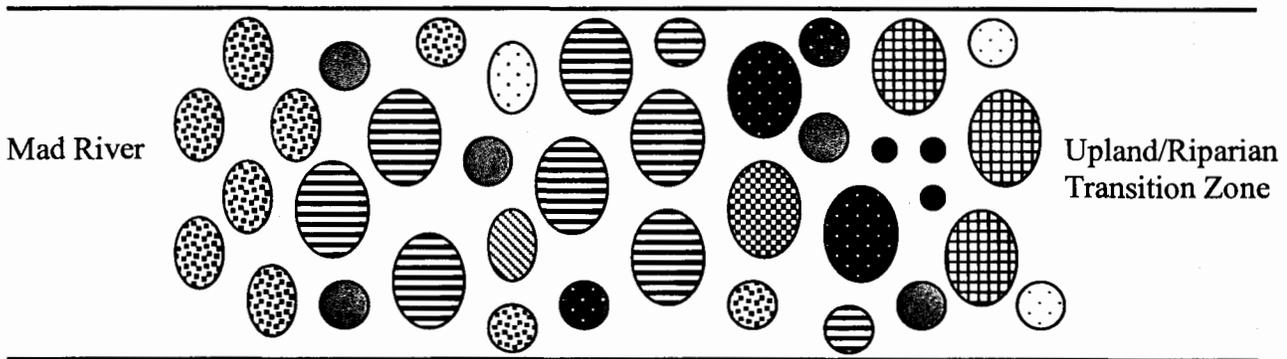
Tree Band = 2.25" sq. x 5" deep

1 Gallon = 6" wide x 7" deep

4" square = 4"sq. x 3" deep

Red Alder/Black Cottonwood Riparian Planting Prototype (not to scale)

Planting prototype modeled on a cross section perpendicular to the Mad River vegetated bank (annual high water vegetation scour line), and on a proportional sample of 30 plants (18 trees, 11 shrubs and 3 herbs) except coast redwood (non-proportional to reflect group planting).



- | | | | | | | | |
|-----------------|--|------------------|--|-----------------|--|---------------|--|
| red alder | | black cottonwood | | Oregon ash | | Coast Redwood | |
| Hooker's willow | | Sitka willow | | shining willow | | | |
| thimbleberry | | coyote brush | | black twinberry | | | |
| red elderberry | | salmonberry | | | | | |
| herbaceous taxa | | | | | | | |

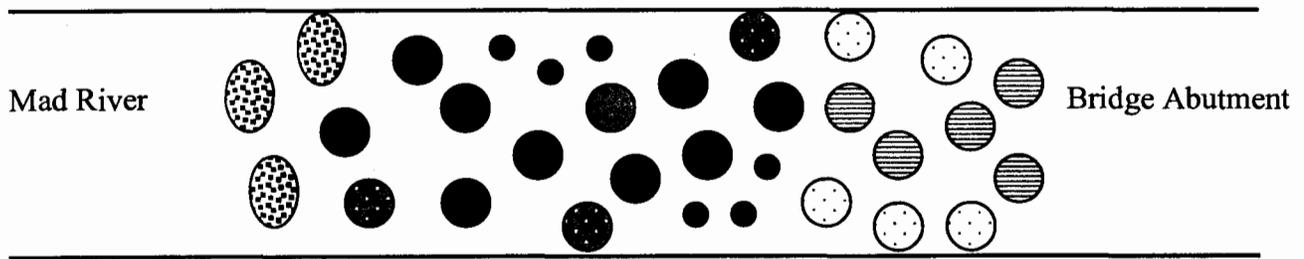
Red Alder/Black Cottonwood Riparian Understory (under bridge decks)

Stratum w/ Area Coverage Factor	Scientific Name Common Name	Quantity*	Spacing On-Center	Minimum Container Size
Sm. Tree/Shrub 80%				
10	<i>Salix hookeriana</i> Hooker's willow	70	10'	N/A (cuttings)
20	<i>Baccharis pilularis</i> coyote brush	218	8'	1 Gallon
40	<i>Rubus parviflorus</i> thimbleberry	436	8'	1 Gallon
10	<i>Rubus spectabilis</i> salmonberry	109	8'	1 Gallon
20	<i>Rubus ursinus</i> Pacific bramble	218	8'	1 Gallon
Herb 20%		0		
15	<i>Athyrium filix-femina</i> lady fern	163	4'	1 Gallon
20	<i>Juncus effusus</i> var. <i>pacificus</i> Pacific rush	218	4'	1 Gallon
15	<i>Juncus patens</i> spreading rush	163	4'	1 Gallon
20	<i>Polystichum munitum</i> sword fern	218	4'	1 Gallon
15	<i>Scrophularia californica</i> California figwort	163	4'	4" Square
15	<i>Stachys ajugoides</i> var. <i>rigida</i> hedge nettle	163	4'	4" Square
Total Plants		2,139		

*Quantities based on 0.5 acre due to current unknown impact/mitigation area, to develop final project quantities will require recalculation with the appropriate acreage multiplier (e.g. if mitigation area is 0.4 acres then multiply quantities by 0.8)

Red Alder Riparian Understory Under Bridge Decks Prototype (not to scale)

Planting prototype modeled on a cross section perpendicular to the Mad River vegetated bank (annual high water vegetation scour line), and on a proportional sample of 30 plants (24 shrubs and 6 herbs).



- Hooker's willow 
- thimbleberry 
- coyote brush 
- salmonberry 
- Pacific bramble 
- herbaceous taxa 

Freshwater Marsh

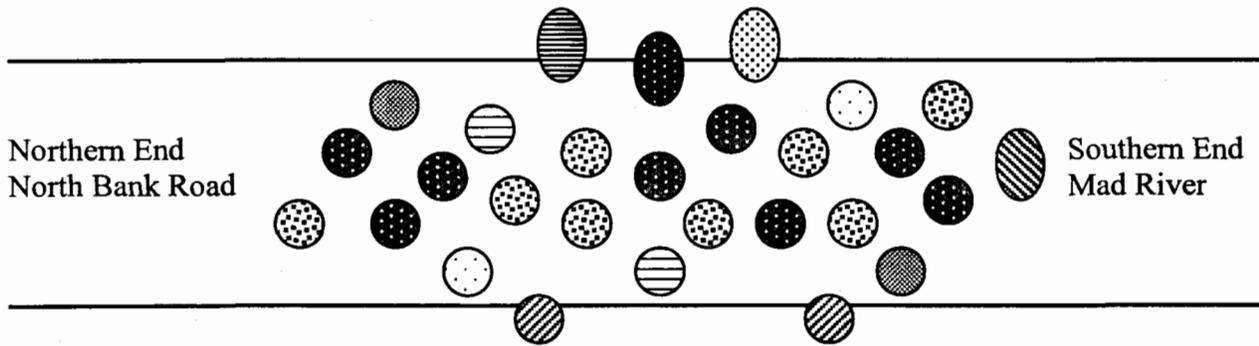
Stratum	Scientific Name Common Name	Quantity*	Spacing On-Center	Minimum Container Size
Shrub¹ 10%				
25	<i>Physocarpus capitatus</i> Pacific ninebark	34	8'	1 Gallon
25	<i>Rhododendron occidentale</i> western azalea	34	8'	1 Gallon
25	<i>Ribes sanguinuem</i> var. <i>glutinosum</i> pink-flowering currant	34	8'	1 Gallon
25	<i>Spiraea douglasii</i> western spiraea	34	8'	1 Gallon
Herb 90%		0		
10	<i>Athyrium filix-femina</i> lady fern	490	4'	1 Gallon
10	<i>Cyperus eragrostis</i> nut-grass	490	4'	4" Square
30	<i>Oenanthe sarmentosa</i> Pacific water-parsley	1,470	4'	1 Gallon
30	<i>Scirpus microcarpus</i> small-flowered bulrush	1,470	4'	1 Gallon
10	<i>Stachys ajugoides</i> var. <i>rigida</i> hedge nettle	490	4'	4" Square
10	<i>Symphotrichum chilense</i> (<i>Aster chilensis</i>) common California aster	490	4'	4" Square
Total Plants		5,036		

*Quantities based on 0.5 acre due to current unknown impact/mitigation area, to develop final project quantities will require recalculation with the appropriate acreage multiplier (e.g. if mitigation area is 0.34 acres then multiply quantities by 0.68)

¹ Showy mesic and regional appropriate native species for openings in the wetland transitional area along northern and/or eastern border, which have public interface and views associated with highway and bikeway/parking lot design feature.

Freshwater Marsh Prototype (not to scale)

Planting prototype modeled on a cross section parallel to the length of the created wetland ditch, and on a proportional sample of 30 plants (4 shrubs and 26 herbs).



- | | | | | | | | |
|------------------|--|-----------------------|--|-------------------------|--|-----------|--|
| Pacific ninebark | | western azalea | | pink-flowering currant | | | |
| western spiraea | | Pacific water-parsley | | small-flowered bulrush | | | |
| nut-grass | | hedge nettle | | common California aster | | lady fern | |

Mad River Bridges Vegetation Baseline Field Data Form

(version 04-24-2007)

Location (attach map): Mad River Bridges, north end
of project area on N side 101 just E of Central Ave acrossUSGS 7.5' Quad(s): Aracata NorthLegal Description: _____ UTM Coordinates: 10 407625E 4530389N (NAD27)Investigator(s): K. Garrett, K. Hayler, C. Gales Date(s): 1-26-07Vegetation Type: Freshwater Marsh Total Acreage: ~ 0.25Sampling Unit (circle one): Transect Transect/Points Transect/Plots PlotsNo. Sampling Units: N/A Sample Unit Placement¹: full census

Transect Dimensions (meters): _____ Transect No.: _____

Plot Dimensions (meters): _____ Plot No.: _____

Photopoint (location/bearing): N/AAspect: SW Slope (%): 0-5 Elevation (ft.): ~ 30Parent Material/Soil Type: sedimentary Soil Texture: clay loamSlope Position (circle one): ridge upper middle lower bottomSite Moisture (circle one): xeric mesic wetHabitat Quality² (circle one): excellent good fair poorSite History/Notes: sm. drainage/swale between start of slope &
State Route 101, perennial wetland dominated
by native vegetation. Project wetland to be impacted
was degraded, hence this nearby wetland was
sampled for baseline wetland vegetation reference.Total Percent Absolute Cover³ of Vegetation Layers & Other Site Factors

Tree Layer (>5 m)	Shrub Layer (<5 ->1 m)	Herbaceous Layer	Organic Layer	Mineral Soil
0	0	95	100	0

¹ For example systematic with random start.² Habitat Quality based on disturbance and intactness, plant species composition (native vs. non-native), and native plant species richness (in relation to known character of vegetation type).³ Ocular estimate utilizing comparison cover charts. Cover definitions: absolute plant cover is relative to ground surface, relative plant cover is proportional contribution of one species cover to total vegetation cover, canopy cover is a vertical projection of perimeter of species canopy with gaps, foliar cover is the canopy cover minus gaps, and basal cover is area of species at or near the ground surface.

Bold Text Species - native species, for region and/or vegetation type

* - listed and/or sensitive species/community

Distribution - adjacency distribution within the vegetation stratum (how species are arranged on the landscape): S = species scattered, SC = species in small clumps of 2 - 5 plants, MC = species in medium clumps of >5 - 10 plants, and LC = species in large clumps of > 10 plants

Density - number of individuals/counting unit encountered per sample unit area. Counting unit can be individual stem bases or localized basal clumps (i.e. multiple stems emerging from central area), but need to identify.

Cover Classes - <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%, specify type of cover(s) measured absolute, relative, canopy, foliar and/or basal.

Addition notes:

Wetland transition to upland is herbaceous dominated with a shrub & tree layer

Tree: 57% canopy cover (relative)

- Rhamnus purshiana cascade - 1-2%
- Sequoia sempervirens redwood - 15%
- Alnus rubra red alder - 25%
- Salix lucida shining willow - 15%

Shrub: 10% canopy cover

- laniceta involuta var. ledebovii black twinberry 2%
- Rubus parviflorus thimbleberry 2%
- Sambucus racemosa var. racemosa Red elderberry 2%
- Rubus spectabilis salmonberry 2%
- Malus fusca Oregon crabapple 2%

Herb:

- Rubus ursinus Calif. blackberry 40%
- Juncus Patens spreading rush > 5%
- Juncus effusus common rush
- Epilobium ciliatum northern willow herb 5%
- Stachys ajacoides var. fiada hedge nettle 5%
- Atthysium filix-femina lady fern 5%

Mad River Bridges Vegetation Baseline Field Data Form
(version 04-24-2007)

Location (attach map): Mad River Bridges - NW riparian area

USGS 7.5' Quad(s): Arcata North

Legal Description: _____ UTM Coordinates: 10 408006E 4529947N (NAD 24)

Investigator(s): K. Garrett + K. Bayler Date(s): 5-17-07

Vegetation Type: Red Alder Riparian Forest
red alder overstory w/ Rubus ursinus understory Total Acreage: N/A

Sampling Unit (circle one): Transect Transect/Points Transect/Plots Plots

No. Sampling Units: 4 plots Sample Unit Placement¹: systematic w/ random start @ 7 ft N of break in slope

Transect Dimensions (meters): ~70 ft long Transect No.: only 1 because riparian area = very homogeneous

Plot Dimensions (meters): 10 ft x 10 ft Plot No.: 1 facing N, standing @ break in slope that leads to N bank (we're @ top of bank of Mad River)

Photopoint (location/bearing): _____

Aspect: none (flat) Slope (%): ~5 Elevation (ft.): _____

Parent Material/Soil Type: river alluvium (sandy) Soil Texture: Sandy silt loam

Slope Position (circle one): ridge upper middle lower bottom

Site Moisture (circle one): xeric mesic wet

Habitat Quality² (circle one): excellent good fair poor

Site History/Notes: Animal trail through 1st plot; 1 strand invasive Convolvulus; couple of stems of rhizomatous vegetation, grass; no herb layer; (Plot 2 + 3) - trail through plots; (Plot 3) - bit of moss on ground

Transect followed animal trail, which mimics/captures % cover across alder forest since there are multiple animal trails through the forest. A straight transect would come up w/ similar % cover.
Transect direction: plot 1 had NSE bearing, turned NW for plot 3; turned W for plot 4; plots 10 ft apart.

Total Percent Absolute Cover³ of Vegetation Layers & Other Site Factors - Averaged plot data

Tree Layer (>5 m)	Shrub Layer (<5 - >1 m)	Herbaceous Layer	Organic Layer	Mineral Soil
71	78	< 5	(not taken)	(not taken)

% cover above referenced = Munsell soil color % cover chart

¹ For example systematic with random start.
² Habitat Quality based on disturbance and intactness, plant species composition (native vs. non-native), and native plant species richness (in relation to known character of vegetation type).
³ Ocular estimate utilizing comparison cover charts. Cover definitions: absolute plant cover is relative to ground surface, relative plant cover is proportional contribution of one species cover to total vegetation cover, canopy cover is a vertical projection of perimeter of species canopy with gaps, foliar cover is the canopy cover minus gaps, and basal cover is area of species at or near the ground surface.

Bold Text Species- native species for region and/or vegetation type

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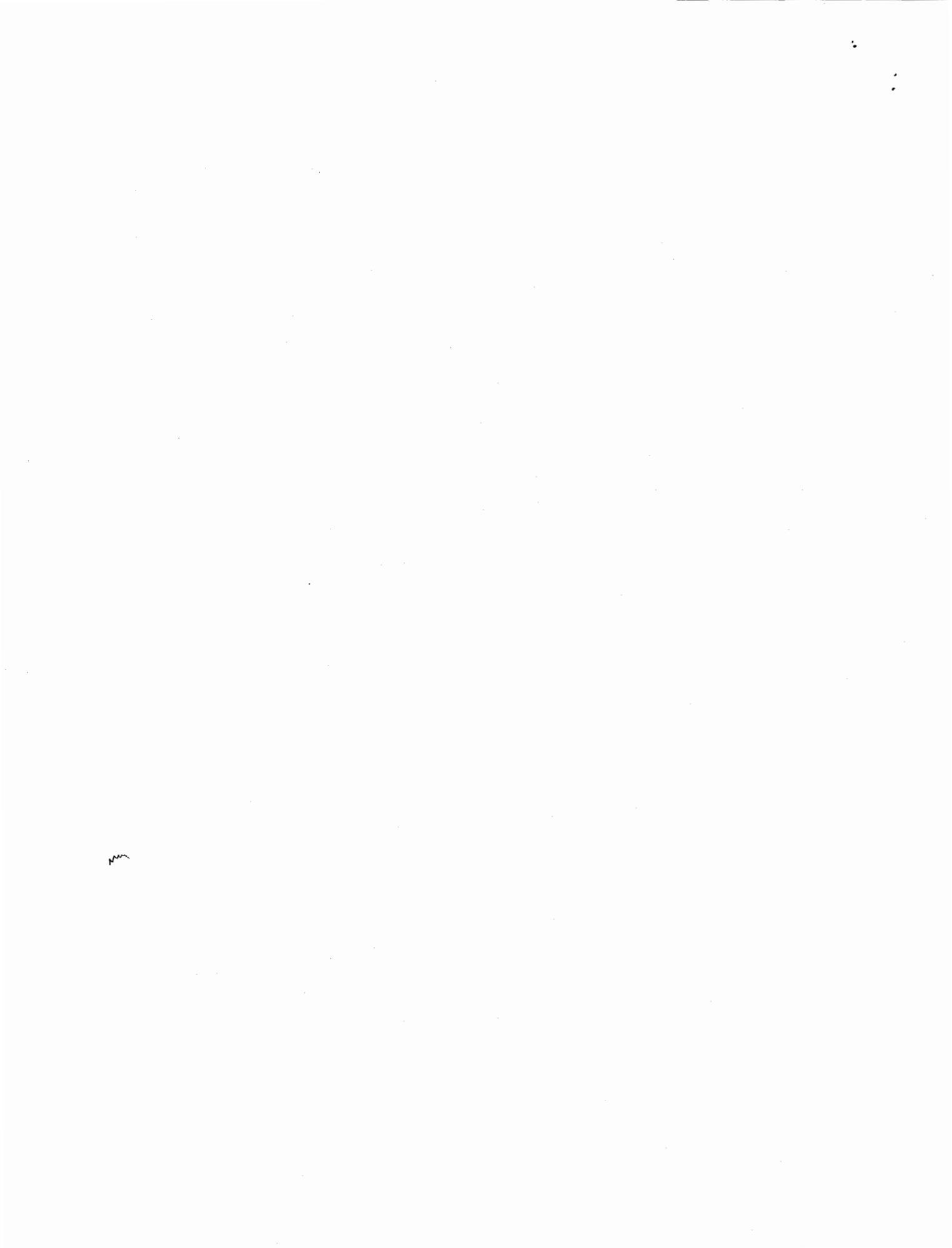
Distribution - adjacency distribution within the vegetation stratum (how species are arranged on the landscape): **S** = species scattered, **SC** = species in small clumps of 2 - 5 plants, **MC** = species in medium clumps of >5 - 10 plants, and **LC** = species in large clumps of > 10 plants

Density - number of individuals/counting unit encountered per sample unit area. Counting unit can be individual stem bases or localized basal clumps (i.e. multiple stems emerging from central area), but need to identify.

Cover Classes - <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%, specify type of cover(s) measured absolute, relative, canopy, foliar and/or basal.

*Clare - define tree vs. shrub

* Distribution → "diversity"



Mad River Bridges Vegetation Baseline Field Data Form
(version 04-24-2007)

Location (attach map): Mad River Bridges - ^{Southern} ~~SW~~ riparian area

USGS 7.5' Quad(s): Arcata North

Legal Description: _____ UTM Coordinates: 10 408052E 4529850N (NAD24)

Investigator(s): K. Garrett & K. Hayler Date(s): 5-30-07

Vegetation Type: Red alder / Salix lucida ssp. lasiandra overstory w/ shrubs; Rubus parviflorus, R. spectabilis, S. sitchensis + Total Acreage: N/A

Sampling Unit (circle one): Transect Transect/Points Transect/Plots Plots → N/A
 No. Sampling Units: _____ Sample Unit Placement¹: plant palette
 ↳ area not sampled; Notes section provides anecdotal spp. list to augment

Transect Dimensions (meters): _____ Transect No.: _____

Plot Dimensions (meters): _____ Plot No.: _____

Photopoint (location/bearing): _____

Aspect: _____ Slope (%): _____ Elevation (ft.): _____

Parent Material/Soil Type: _____ Soil Texture: _____

Slope Position (circle one): ridge upper middle lower bottom

Site Moisture (circle one): xeric mesic wet

Habitat Quality² (circle one): excellent good fair poor

Site History/Notes: Lonicera involucrata ssp. ledebourii, Rubus parviflorus, R. spectabilis, Sambucus racemosa ssp. racemosa, Salix lucida ssp. lasiandra, Alnus rubra, Rubus ursinus, Salix sitchensis, Symphoricarpos alba (vsp.), Fraxinus sp., Potentilla anserina, Equisetum telmateia ssp. braunii, E. arvense, Sequoia sempervirens (single specimen on SE side), Populus balsamifera ssp. trichocarpa, Ribes sanguineum (burned patches)

Total Percent Absolute Cover³ of Vegetation Layers & Other Site Factors

Tree Layer (≥5 m)	Shrub Layer (<5 - >1 m)	Herbaceous Layer	Organic Layer	Mineral Soil

Pedicularis munitum, Athyrium filix-femina

Baccharis pilularis (w/late early successional)

¹ For example systematic with random start.

² Habitat Quality based on disturbance and intactness, plant species composition (native vs. non-native), and native plant species richness (in relation to known character of vegetation type).

³ Ocular estimate utilizing comparison cover charts. Cover definitions: absolute plant cover is relative to ground surface, relative plant cover is proportional contribution of one species cover to total vegetation cover, canopy cover is a vertical projection of perimeter of species canopy with gaps, foliar cover is the canopy cover minus gaps, and basal cover is area of species at or near the ground surface.

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Density - number of individuals/counting unit encountered per sample unit area . Counting unit can be individual stem bases or localized basal clumps (i.e. multiple stems emerging from central area), but need to identify.

Cover Classes - <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%, specify type of cover(s) measured absolute, relative, canopy, foliar and/or basal.

Mad River Bridges Vegetation Baseline Field Data Form
(version 04-24-2007)

Location (attach map): Mad River Bridges
(under existing bridge in riparian corridor)

USGS 7.5' Quad(s): Accata Nook

Legal Description: _____ UTM Coordinates: 10 408063E 4529860N (NAD 27)

Investigator(s): Kelley Garrett & Clare Golee Date(s): 8-17-07

Vegetation Type: Red Alder / Black Cottonwood Total Acreage: N/A

Sampling Unit (circle one): Transect Transect/Points Transect/Plots Plots Full census

No. Sampling Units: N/A Sample Unit Placement¹: N/A

Transect Dimensions (meters): NA Transect No.: _____

Plot Dimensions (meters): N/A Plot No.: _____

Photopoint (location/bearing): N/A

Aspect: NE Slope (%): 5-10 Elevation (ft.): _____

Parent Material/Soil Type: soft sediments w/ river rock Soil Texture: compact silty loam

Slope Position (circle one): ridge upper middle lower bottom

Site Moisture (circle one): xeric mesic wet

Habitat Quality² (circle one): excellent good fair poor

Site History/Notes: Due bridge deck no developed overstory & sampled less disturbed S side

Total Percent Absolute Cover³ of Vegetation Layers & Other Site Factors

Tree Layer (>5 m)	Shrub Layer (<5 - >1 m)	Herbaceous Layer	Organic Layer	Mineral Soil
0	60-80	10	> 5	10

¹ For example systematic with random start.
² Habitat Quality based on disturbance and intactness, plant species composition (native vs. non-native), and native plant species richness (in relation to known character of vegetation type).
³ Ocular estimate utilizing comparison cover charts. Cover definitions: absolute plant cover is relative to ground surface, relative plant cover is proportional contribution of one species cover to total vegetation cover, canopy cover is a vertical projection of perimeter of species canopy with gaps, foliar cover is the canopy cover minus gaps, and basal cover is area of species at or near the ground surface.

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Density - number of individuals/counting unit encountered per sample unit area. Counting unit can be individual stem bases or localized basal clumps (i.e. multiple stems emerging from central area), but need to identify.

Cover Classes - 1-5%, 5-15%, 15-25%, 25-50%, 50-75%, >75%; specify type of cover(s) measured absolute, relative, canopy, foliar and/or basal.

Non - native components (>10% cover):

- Brassica nigra* / black mustard
- Agrostis stolonifera* / creeping bent-grass
- Plantago lanceolata* / English Plantain
- Cynodon dactylon* / dactyl grass
- Trifolium repens* / white clover
- Ranunculus repens* / creeping buttercup
- Daucus carota* / Queen Anne's lace
- Erodium* sp / stork's bill
- Holcus lanatus* / velvet grass
- Bromus diandrus* / ripgut grass
- Dactylis glomerata* / orchard grass
- Dipsacus* sp / teasel
- Melilotus alba* / white sweetclover
- Phragmites australis* / common reed
- Prunus* sp / plum

Adjacent Native Species:

- Lonicera involucrata* sp. ledebourii / black twinberry
- Sambucus racemosa* var. T. / red elderberry
- Baccharis pilularis* / coyote brush