

CALIFORNIA COASTAL COMMISSION

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49th Day: April 26, 2004
180th Day: September 4, 2004
Staff Report: September 30, 2004
Staff: MKF
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-04-014**

APPLICANT: **California Dept. of Transportation
(CALTRANS), District 1**

PROJECT LOCATION: Highway 101 bridge over the Van Duzen
River, 5 miles south of Fortuna, Humboldt
Co.

PROJECT DESCRIPTION: Replace the southbound Highway 101 bridge.

RECOMMENDATION: Approval with Conditions.

MOTION & RESOLUTION: Page 3

LOCAL APPROVALS RECEIVED: None required.

OTHER APPROVALS RECEIVED: Regional Water Quality Control Board
Certification; California Department of Fish
and Game Stream Alteration Agreement;
U.S. Fish & Wildlife Service & National
Marine Fisheries Service Section 7

Consultations under the Endangered Species Act.

OTHER APPROVALS REQUIRED: State Lands Commission; Army Corps of Engineers

SUBSTANTIVE FILE DOCUMENTS: CDP 1-93-05 (CALTRANS, northbound Highway 101 bridge replacement, Van Duzen River); CDP 1-01-67 (CALTRANS, geotechnical borings for southbound bridge replacement, Van Duzen River); Conceptual Storm Water Pollution Prevention Plan for Van Duzen River Bridge Replacement, dated June 30, 2004; Clean Water Act Section 401 Certification for Highway 101 – Van Duzen River Southbound Bridge Replacement, prepared by North Coast Region, California Regional Water Quality Control Board, dated May 5, 2004; California Department of Fish and Game Stream Alteration Agreement (04-0097), dated September 13, 2004; Wild and Scenic Rivers Act Section 7 Consultation Determination for Van Duzen River Bridge Replacement, prepared by National Park Service, dated October 16, 2002; Biological Opinion (Snowy Plover), U.S. Fish and Wildlife Service, Formal Consultation, Section 7 of Endangered Species Act, dated March 12, 2003; Biological Opinion (Chinook Salmon, Coho Salmon, Steelhead), National Marine Fisheries Service, Formal Consultation, Section 7 of Endangered Species Act, dated March 11, 2002; Negative Declaration (CEQA), 01-HUM-101/01-31440, prepared by State Department of Transportation (CALTRANS), June 2003.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval of the proposed project with conditions for the coastal development permit application submitted by the California Department of Transportation (CALTRANS) for replacement of the State Route 101 southbound bridge over the Van Duzen River, south of Fortuna, in Humboldt County. The Commission approved a Coastal Development Permit for the northbound bridge component of this project in 1993, and the project was completed in 1995 (Exhibit 3). The present proposal is to construct the southbound bridge along the same alignment as the existing southbound bridge, in the "mirror image" of the northbound bridge, with the same configuration, width, length, etc. The southbound bridge will include a new, highly transparent bridge rail (Type ST-20) that is currently undergoing final technical approval at CALTRANS.

Staff believes that the project, as conditioned by the sixteen (16) special conditions set forth below, is the preferred project alternative and is fully consistent with the Chapter 3 policies of the Coastal Act. The project has the potential to adversely impact riverine wetland habitat; however, the National Marine Fisheries Service and U.S. Fish and Wildlife have reviewed the project extensively and determined that if applicable

conditions (incorporated into the recommended special conditions below) are imposed, the project's significant adverse impacts on riverine wetland habitat will be minimized.

STAFF NOTES:

1. **Standard of Review**

The proposed project is located within the Commission's area of retained permit jurisdiction. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

2. **Commission Action Required at October, 2004 Meeting.**

Due to Permit Streamlining Act considerations, the Commission must act at the October hearing.

I. **MOTION and RESOLUTION**

The staff recommends that the Commission adopt the following resolution:

<u>Motion:</u>	I move that the Commission approve Coastal Development Permit 1-04-014, with conditions, pursuant to the staff recommendation.
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Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT

The Commission hereby approves the Coastal Development Permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

- 1. Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
- 2. Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
- 3. Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
- 4. Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
- 5. Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. State Lands Commission Review

PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall provide to the Executive Director a copy of a permit issued by the California State Lands Commission, or letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the California State Lands Commission. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

2. Army Corps of Engineers Approval

PRIOR TO COMMENCEMENT OF CONSTRUCTION, the permittee shall submit to the Executive Director written evidence that all necessary approvals from the Army Corps of Engineers have been obtained.

3. Final Construction Clearance

NOT LESS THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF ANY PROJECT-RELATED PHYSICAL ACTIVITIES, including but not limited to preliminary vegetation removal, temporary access improvements, equipment staging, or any other project-related activity, the applicant shall obtain written confirmation from the Executive Director that the applicant has fully complied with all prior-to-commencement conditions set forth in Coastal Development Permit 1-04-014. Project-related physical activities shall not commence until the Executive Director is satisfied that the applicant has fully complied with all prior-to-construction conditions, and has issued the subject written confirmation. This condition shall be prominently stated on the final project plans provided by CALTRANS for final approval by the Executive Director pursuant to Special Condition 5.

4. (Note: this condition was deleted)

5. Final Plans: Amendments: On Site Briefings

- A. PRIOR TO ISSUANCE of Coastal Development Permit 1-04-014, the applicant shall provide two complete sets of the final project plans, drawn to scale, reflecting the final approved project description and conditions of approval as set forth in this permit, including the specific Terms and Conditions and related measures set forth in other agency requirements and herein incorporated by reference in Special Conditions 6, 7, 8 and 9. The final plans shall include site plans, grading plans, cross sections and elevation views, and landscape and erosion control plans, including planting plans. The plans shall include final designs and notations of seasonal placement and removal restrictions for temporary construction ("falsework") and temporary crossings. The conditions of approval of CDP 1-04-014 shall be set forth on the cover sheet of the subject plans and one original set of the approved plans, executed by the Executive Director or his designated representative, shall be present on the construction site at all times while project-related activities are in progress. The proposed project shall be constructed strictly in accordance with the approved plans. Any future modification of the approved development, including but not limited to the bridge, railings, sidewalks, shoulders, traffic lanes or median area shall require a Commission amendment to this coastal development permit.
- B. Prior to commencement of construction, the permittee shall ensure that all construction personnel are fully familiarized with the terms and conditions of this coastal development permit and that a qualified biologist briefs the construction personnel on the measures necessary to protect resources as all applicable restrictions and obligations relevant to their activities. Continuous briefings

throughout the term of the construction activities authorized by this permit shall be qualified biologists, site monitors, and construction managers to ensure that all personnel remain current on the applicable requirements.

6. Measures to Minimize Impacts to Chinook & Coho Salmon and Steelhead

A. The permittee shall comply with the "Terms and Conditions," "Reporting Requirements," and "Conservation Recommendations" specified in the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service's Biological Opinion letter of March 11, 2002, and as amended November 5, 2002, attached as Exhibit 4 of the staff report for Coastal Development Permit 1-04-014. The applicant shall also submit copies of all required notifications and/or reports to the Executive Director.

B. Should stream diversion or dewatering methods proposed for the subject project fail to ensure a dry environment for pile-driving and other construction activities in the manner anticipated, the permittee shall immediately contact the nearest field office of the National Marine Fisheries Service to develop a construction plan that will avoid "barotrauma" (damage to fish due to propagation of acoustic waves due to percussion) to potentially affected fish. Any subsequent construction activities, in addition to other measures that may be required by NMFS, shall at a minimum include the following provisions:

(1) A qualified biologist shall be on-site at all times during all in-water construction work including installation of cofferdams, excavation around bridge footings, and pile driving to monitor behavior of and disturbance to fish in the project area. The biologist shall capture any salmonids that may become stranded in the residual wetted areas as a result of project activities, and relocate the individuals to areas of the bay outside the project vicinity. Only NMFS approved methods shall be used to capture covered salmonids.

(2) If lethal take occurs, other than that expected during handling of entrapped fish, FHWA/CALTRANS shall immediately notify the National Marine Fisheries Service to review the circumstances surrounding the lethal take and develop modification to project activities necessary to prevent further lethal take. If modification to project activities is necessary to prevent further lethal take, all in-water construction shall cease and shall not recommence except as provided in subsection (3) below.

(3) A permittee seeking to recommence in-water construction following notification to NMFS of lethal take and determination that modification to project activities is necessary to prevent further lethal take, shall submit a supplementary construction and work plan for the review and approval of the Executive Director.

(a) If the Executive Director reviews the Supplementary Construction and Work Plan and determines that the supplementary plan's recommended changes to the proposed development or mitigation measures are *de minimis* in nature and scope, construction may recommence after this determination is made by the Executive Director.

(b) If the Executive Director reviews the Supplementary Construction and Work Plan, but determines that the changes therein are not *de minimis*, construction may not recommence until after an amendment to this permit is approved by the Commission.

7. Measures to Minimize Impacts to Snowy Plover

The permittee shall comply with the "Terms and Conditions," "Reporting Requirements," and "Conservation Recommendations" specified in the U.S. Fish and Wildlife Service Biological Opinion letter of March 12, 2003, attached as Exhibit 5 of the staff report for Coastal Development Permit 1-04-014. The applicant shall also submit copies of all required notifications and/or reports to the Executive Director.

8. Measures to Minimize Impacts to Van Duzen River riparian corridor

The permittee shall comply with the "Work Conditions" specified in the California Department of Fish and Game Stream Alteration Agreement, dated September 13, 2004, attached as Exhibit 6 of the staff report for Coastal Development Permit 1-04-014. The applicant shall also submit copies of all required notifications and/or reports to the Executive Director.

9. Measures to Protect Quality of the Waters of the Van Duzen River

A. The permittee shall comply with the conditions specified in the Clean Water Act Section 401 Certification (Water Quality Certification) of the California Regional Water Quality Control Board, North Coast Region, dated May 5, 2004, attached as Exhibit 7 of the staff report for Coastal Development Permit 1-04-014. The applicant shall also submit copies of all required notifications and/or reports to the Executive Director.

B. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the permittee shall submit, for the review and approval of the Executive Director, a Final Storm Water Pollution Prevention Plan that is consistent with the requirements of Special Condition Nos. 10, 11, and 12 and the draft Plan, dated June 30, 2004. The applicant shall also submit copies of all required notifications and/or reports to the Executive Director.

- C. The permittee shall conduct all project activities in accordance with the requirements of the Section 401 Certification and the final Storm Water Pollution Prevention Plan (SWPPP). Any proposed changes to the Section 401 Certification or to the final SWPPP shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

10. Temporary Structures

Where temporary structures such as "falsework" and temporary crossings may contact the waters of the Van Duzen River, such structures shall not include creosote-treated members. Only concrete, steel, composite, untreated timber, or timber treated with a wood preservative approved by the Department of Fish and Game for use in marine waters may be used. All temporary structures shall be completely removed upon project completion. Any piles shall be pulled up and completely removed without digging them out or cutting them off at the mudline.

11. Construction Responsibilities, Material Containment, Demolition, and Disposal of Debris

- A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the permittee shall submit for the review and approval of the Executive Director a plan for the demolition and capture of the old bridge and related components, and for the identification (testing) and disposal of construction-related debris and contaminated sediments. The plan shall be consistent with the requirements of Special Condition No. 12 and shall include (but not be limited to) the following elements:
- (1) Detailed description of the means and method of all demolition activities required to remove the existing bridge and associated structures, including measures to ensure full removal of all associated piers and footings;
 - (2) Outline of all protective measures to insure the integrity of the northbound bridge and the safety of pedestrians, bicyclists and drivers using the northbound bridge and any affected areas beneath and adjacent to the bridge (such as for recreational fishing, hiking);
 - (3) Prohibition of the use of any explosives for any aspect of project construction or demolition;
 - (4) Measures to prevent debris and waste from falling into the riverbed or adjacent areas;
 - (5) Identification on final project plans required pursuant to Special Condition 5 of all temporary storage sites for debris, graded spoils, contaminated sediments, construction materials, waste materials, etc., including any temporary stockpiling sites for any materials;

(6) Evidence that all locations identified in the plan for stockpiling, staging, or storage of materials, equipment or wastes is located upland of the Van Duzen River corridor and that berming, cleanup materials or other measures have been designed and set forth on final construction plans to ensure that such locations do not drain into coastal waters;

(7) Final disposal locations for all forms of debris, waste, and grading spoils, contaminated sediments and evidence that these locations are either a) licensed to accept such wastes and located outside of the coastal zone or b) licensed to accept such wastes and hold valid Coastal Development Permit to accept such materials.

B. In addition, the permittee shall comply with the following construction-related requirements:

(1) No construction debris or waste shall be placed or stored where it may enter coastal waters;

(2) Any and all debris resulting from construction activities shall be removed from the project site within 10 days of project completion and in accordance with the construction debris removal and disposal plan required herein;

(3) No machinery or construction materials not essential for project construction shall be allowed at any time within the Van Duzen River corridor;

(4) Debris discharged into coastal waters shall be recovered as soon as possible after loss and a permanent record of such incidents and resolution shall be kept and at all times made available for on-the-job inspection and the log shall be submitted to the Executive Director upon project completion;

(5) Silt curtains appropriate for use in riverine waters shall be installed around the areas to be excavated;

(6) No contaminated sediments shall be returned to the Van Duzen River. Any contaminated sediments shall be legally disposed of at an appropriate upland facility in accordance with the final plan authorized pursuant to Special Condition 12 and in accordance with other specific requirements set forth herein and in the final approved plan required pursuant to this special condition;

(7) Particular care shall be exercised to prevent foreign materials (for example, construction scraps, wood preservatives, other chemicals, etc.) from entering the Van Duzen River corridor, or areas that drain into the river. Where additional wood preservatives must be applied to cut wood surfaces, the materials, wherever feasible, shall be treated at an upland area to preclude the possibility of spills into the river or other state waters. A designated staging area shall be used for all refueling equipment and vehicles, mixing and storing materials, debris collection and disposal, and containing runoff from any materials that may be used or stockpiled during the project. A floating containment boom shall be placed around all active portions of a construction site where wood scraps or other floatable debris could enter the water. For any work on or beneath fixed bridge decks, heavy-duty mesh containment netting shall be maintained below all work areas where construction discards or other

material could fall into the water. The floating boom and net shall be cleared daily or as often as necessary to prevent accumulation of debris. Contractors shall insure that work crews are carefully briefed on the importance of observing the appropriate precautions and reporting any accidental spills. Construction contracts shall contain appropriate penalty provisions, sufficient to offset the cost of retrieving or clean up of foreign materials not properly contained.

- C. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

12. Hazardous Materials Management Plan

- A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the permittee shall submit, for the review and written approval of the Executive Director, a plan for the use and management of hazardous materials on the site to reduce impacts to water quality. The plan shall be prepared by a licensed engineer with experience in hazardous material management.

- 1. The plan, at a minimum, shall incorporate all applicable requirements of the special conditions of Coastal Development Permit 1-04-014, and in addition shall provide for the following:

- (a) Equipment fueling shall occur only during daylight hours in designated fueling areas;
- (b) Oil absorbent booms and/or pads shall be on site at all times during project construction. All equipment used during construction shall be free of oil and fuel leaks at all times;
- (c) Provisions for preparing and pouring cement in a manner that will prevent discharges of wet cement into coastal waters including, but not limited to, placement of measures such as catch basins, mats or tarps beneath the construction area to prevent spills or overpours from entering coastal waters;
- (d) Provisions for the testing, handling, cleanup, temporary storage and containment, interim identification (such that contaminated materials or debris, including sediments, may be so identified at any time by site inspectors, and that such materials cannot be inadvertently mingled with or confused with non-contaminated stored materials) and disposal of any hazardous or non-hazardous materials used during the construction

project including, but not limited to, cement, equipment fuel and oil, and contaminated sediments (including lead-contaminated sediments);

- (e) A schedule for maintenance of containment measures on a regular basis throughout the duration of the project;
- (f) Provisions for the containment of rinsate from the cleaning of equipment, including cement mixing equipment, and methods and locations for disposal off- site. Containment and handling shall be in upland areas and otherwise outside of any environmentally sensitive habitat area;
- (g) A site map detailing the location(s) for hazardous material storage, equipment fueling and maintenance, and concrete wash-out facilities;
- (h) Reporting protocols to the appropriate public and emergency services/agencies in the event of a spill;
- (i) Record-keeping measures to insure consistent, complete accounting for identification, handling, storage (both short- and long-term), and disposal of contaminated materials and wastes in a manner that can be immediately audited by site inspectors.

- B. The applicant shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

13. Erosion Control and Revegetation Plan

- A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the permittee shall submit, for the review and approval of the Executive Director, an erosion control and revegetation plan for all areas disturbed by construction of temporary access roads. The plan shall provide for (1) the use of geotextile fabric and gravel to cover temporary access roads and newly placed fill slopes, and adjacent disturbed areas during construction, (2) the replanting with appropriate locally native species of any disturbed areas sufficient to prevent erosion at maturity and including short-term plantings to prevent erosion until slower growing species mature, (3) subsequent complete removal of all geotextile fabric and gravel in coordination with the replanting plan, (4) placement of erosion control measures such as mulch or rice straw, (5) placement of straw bales or other sediment control measures to protect against sediment loss if other erosion control measures fail, (6) monitoring, weed control, maintenance, and adaptive management measures designed to ensure successful establishment of native species and full control of erosion in the previously

disturbed areas, and (7) annual reports and photographic documentation of erosion control and revegetation measures implemented, to be submitted annually to the Executive Director for a minimum of five (5) years following commencement of construction.

- B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required. To the extent that the measures required in the final approved plan do not achieve permanent erosion control (for example, if plantings fail to thrive), the applicant shall pursue adaptive management, replanting, and further monitoring and reporting to the Executive Director's satisfaction until successful compliance is achieved.

14. Public Access and Safety

During construction, the applicant shall maintain existing public access to the Van Duzen River to the extent that such access is ordinarily available, consistent with the protection of public safety and the provisions of Special Conditions 6, 7, and 8 protective of sensitive resources. Where project activities would pose significant public safety hazards within the active project construction area, pedestrian detour routes shall be made available where feasible, and temporary signage shall be placed at public access closure points to indicate the nature and timing of any restrictions on access that may be necessary. Such signage shall additionally include directions to detour routes where detours are feasible, and directions to the nearest alternative public accessways. Where construction activities pose temporary safety risks to the public, associated access points shall be clearly barricaded and posted with warnings and to the extent necessary to protect the public, a construction monitor shall be posted to protect the public from hazards posed by heavy equipment in operation and other potential construction hazards. Following project construction, or immediately after temporary closures while construction proceeds, previously existing public accessways shall be fully restored, consistent with necessary erosion control measures.

15. Nesting Birds

- A. PRIOR TO COMMENCEMENT of construction, and in accordance with the applicant's proposal, the applicant shall submit for the review and approval of the Executive Director, a final plan prepared by a qualified biologist or resource specialist with appropriate experience, to provide equivalent replacement nesting site(s) for migratory birds presently utilizing the southbound bridge, in an alternative location or a combination of locations either attached to or suspended from the adjacent northbound bridge, or on a separate but adjacent structure as close as practicable to the southbound bridge site but outside of the area of anticipated construction disturbance. The permittee shall provide

documentation, including photographic evidence, of the habitat installation prior to commencement of construction and prior to implementing nesting enclosure techniques on the bridge proposed for demolition.

- B. By July 1 of the first calendar year following project completion, the permittee shall submit a written report supplemented by photographic evidence, prepared by a qualified biologist or resource specialist, documenting the success of the nesting habitat alternatives and, if the timing of nesting season allows, evidence of whether nesting on the new bridge is occurring. If nesting has not occurred successfully, the report shall include recommendations for adaptive management that may better ensure successful use of the nesting sites by migratory birds. Upon implementation of these measures, the applicant will undertake follow-up monitoring and reporting to the Executive Director annually for three (3) consecutive years thereafter. At the end of the third year, the final report shall include a summary of measures that have proven successful and recommendations for implementation of similar, or potentially improved measures in other project locations where similar nesting habitat impacts may arise.

16. Timing of Construction

Consistent with the proposed project description and the requirements of the National Marine Fisheries Service protective of salmonid species (Exhibit 4), project activities in the Van Duzen River channel outside the low flow channel are prohibited before June 1 or after October 15 of a given calendar year. Project activities in the Van Duzen River low flow channel, including temporary stream crossing and dike construction shall be prohibited before June 15 or after October 15 of a given calendar year.

IV. FINDINGS AND DECLARATIONS

1. Site & Project Description

The Highway 101 Van Duzen River bridge is located approximately five miles south of Fortuna and approximately one-half mile upstream, or east, of the confluence of the Van Duzen and Eel Rivers in Humboldt County. The rural area surrounding the site is mainly flat agricultural land used for grazing and open space. (Exhibit Nos. 1 & 1A; see also Exhibit 8)

The proposed project includes removal of the existing bridge piers and abutments, and construction of new piers, abutments and bridge superstructure. Other associated work includes construction of sedimentation basins, cofferdams, falsework and replacement of rock slope protection at abutments.

The northbound bridge was replaced in 1993 under CDP No. 1-93-05; construction was completed in 1995 (Exhibit 3). CALTRANS proposes to replace the southbound

bridge because foundation investigations established that the Van Duzen River channel has degraded and scour is occurring at the piers, thereby posing an eventual threat to the structural integrity of the bridge. In addition, CALTRANS has determined that the bridge requires extensive repairs and has reached the end of its useful life.

The existing bridge consists of two separate bridges located side by side, one carrying northbound traffic and the other southbound traffic. An historic railroad bridge carrying the main line of the North Coast Railroad also crosses the Van Duzen in this location, in an alignment parallel to and less than 50 feet east of the northbound highway bridge. From bank to bank, the bridges are both approximately 800 feet long. However, the width of the river channel in this location is only about 400 feet at ordinary high water and less than 50 feet during low flow conditions in the summer.

The proposed project is located in an area commonly known as the Van Duzen River 'gravel extraction reach.' This reach is composed of broad, flat aggraded alluvial deposits with a stream gradient of 1% or less. Extensive riparian woodlands exist along the north bank of the river, extending several hundred feet back from the shoreline and a much narrower band of riparian woodland, approximately 50 feet wide, flanks the south bank of the river. Federally listed anadromous salmonid species within the Van Duzen River watershed include Chinook salmon, Coho salmon, and steelhead trout. The northbound segment of the bridge was completed before local Ecologically Significant Units (ESUs) of Pacific salmonids were proposed for Endangered Species Act listing. In addition, the U.S. Fish & Wildlife Service states that the nearby gravel bars may be used by the Western Snowy Plover. CALTRANS also indicates that surveys conducted during the past three years indicate that migratory cliff swallows (*Hirundo pyrrhonoto*) nest on the existing southbound bridge, and proposes to construct equivalent alternative nesting habitat on site for migratory bridge-nesting birds.

CALTRANS does not propose to remove any riparian habitat, including trees, to access the proposed project site. CALTRANS will utilize existing access roads and will grade temporary accessways within the gravel bars in the construction area. These accessways will be regraded to natural contours seasonally and at the end of the project, as applicable.

Proposed Project Details

CALTRANS proposes to replace the existing 809-ft. long southbound bridge across the Van Duzen River and elevate the profile grade by a maximum of eight feet on Highway 101 at post mile 56.3 to 57.4, approximately 5 miles south of Fortuna, in unincorporated Humboldt County. The new bridge will be a cast-in-place concrete box girder bridge, 809-ft. long, and 42-ft. wide. The centerline of the new bridge will match the centerline of the existing bridge. The elevation will be raised to match the northbound structure. The bridge will have three piers (replacing five older piers), with a net reduction in permanent wetland fill. Each pier will have a six-foot thick, 78-sq.-ft.

spread footing with 36 sheet piles (similar to the northbound bridge). The abutments will also be constructed on spread footings with 50 sheet piles for each abutment. There will be no change in the number of lanes or highway capacity as the result of the bridge replacement. The elevation of the bridge takeoffs to match that of the northbound bridge requires placement of 20,000 cubic yards of fill, which will be placed in the same location as the existing roadbed, outside of the wetland and riparian upland areas.

The proposed bridge replacement will have fewer, narrower, and more rounded support piers and the abutments will be setback. The piers and deck of the replacement bridge will mirror the northbound bridge with respect to the river cross-section. The proposed bridge will be constructed in the same alignment as the existing bridge. The profile of the highway, bridge approach and replacement bridge will be brought up to the elevation of the northbound bridge. Rock slope protection is proposed at each abutment and on the side of the naturally degraded channel on the north bank.

The bridge structures will have negligible lasting impacts on existing topography or geomorphic processes. In addition, CALTRANS engineers have concluded that the replacement of the southbound bridge, upon project completion, will have no impact on flood potential, bank erosion or channel stability.

Use of ST-20 (see through) Bridge Rail

CALTRANS originally proposed Type 80 concrete bridge rail, but has since amended the proposed project description to use the more visually permeable "ST-20" bridge rail (see illustration in Exhibit 8). The Commission has typically required the use of the most transparent bridge railings possible, and ST-20 bridge rail affords the best visibility from the bridge, even with mandatory bike railings atop the guardrail component. The Van Duzen River is designated as Recreational in the Wild and Scenic River System, in part because of the river's notable scenic and wildlife values. Thus, it is appropriate to use the most visually permeable railing possible, as the applicant proposes. CALTRANS staff have noted that ST-20 rail is undergoing final internal administrative clearance review for use in California projects, but that final approval is anticipated prior to commencement of construction.

Temporary Construction Access

Access to the work site is proposed via an existing road on the northwest side of the existing southbound bridge. No riparian vegetation will be disturbed for construction access. Equipment will cross the low flow channel on a temporary crossing constructed of a flat-car bridge that will fully span the low channel. Construction of the crossing may require that a piece of heavy equipment cross the channel in the water once to install and once to remove the temporary bridge, annually, for up to two anticipated construction seasons. Footings for the bridge will be either pre-cast

concrete, log stringers, or some other solid material and approaches will be made from gravel collected from the adjacent bar or imported. The footings and approaches will not contact the water. The crossing will be removed at the end of the construction season, prior to increased fall flows. Equipment and material will be moved along temporary roads graded on the gravel bar to the work site. The gravel bar will be regraded to its original configuration at the close of each construction season.

Water diversion; dry work area

Diversion of the Van Duzen River at the construction site is required to remove the existing piers, construct the new piers, and to place the false work. A temporary dike constructed of clean, washed, salmonid spawning-sized gravel is proposed to divert the flow and maintain dry conditions around Pier 4 (the only pier in the flowing stream channel). After all water is diverted to avoid entrapping fish, sheet pile coffer dams will be placed into the dry work area. Subsurface flow may percolate into the coffer dam 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 de-watering. 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 a large gravel bar downstream, west of the southbound structure and on the gravel bar within the CALTRANS right-of-way. After construction, any residual silt or fine materials within the settling basin will be removed to a disposal site above the high water level, and the gravel bar will be re-graded to its previous condition.

Construction Year #1: In the first year, the existing southbound bridge will be dismantled and removed. Remnant pilings left in the streambanks from the demolition and replacement of the northbound bridge will also be removed. No explosives will be used to dismantle the existing bridge and no portion of the bridge will be allowed to drop into the river.

The first step in dismantling the bridge will be removing the traveled way. The long girder sections of the superstructure will then be removed. Next, the existing columns will be removed to accommodate the construction of the new bridge columns. The columns will be removed to below grade and below potential river degradation.

Construction of the new bridge abutments and piers will also take place in this season. To construct the footings of the new columns, river diversion and cofferdams may be needed to create a dry work area. For cofferdams, sheet piles are first driven around the footing area to confine the excavation. The footing area is excavated and the footing piles are driven to the required depth. If water is present from groundwater, it is

pumped to the settling basin. A seal course of concrete is placed to slow water intrusion in the forms. The footing is then formed and poured to cap the piles. The columns are then ready to be formed and poured. At the end of the first construction season, the diversion, cofferdams, and settling basin are removed and the river bar is recontoured to resemble natural contours.

Construction Year #2: In the second year, the superstructure, bridge approach and departure roadway will be built. To build the structure, the river may again need to be diverted, a settling basin would be reestablished and the falsework constructed in place. The superstructure will then be built from the falsework. The falsework will be removed upon completion of the superstructure.

After completion of construction, all dikes, berms, construction material, falsework, debris, temporary roads, and the settling basin will be removed and the contours of the gravel bar will be restored to natural elevations.

Debris Disposal

The proposed project will generate lead-contaminated dredged sediments based on an initial survey (Preliminary Site Investigation – PSI) undertaken by CALTRANS. The source of the lead contamination is most likely from the sloughing off of older lead based paints from the bridge. CALTRANS proposes to allow the subsequently selected contractor to temporarily store lead-contaminated sediments in the contractor's staging and work area for as long as 270 days after excavation. In addition, the demolition of the bridge will generate substantial amounts of debris, which CALTRANS proposes that a subsequently selected contractor elect to dispose in accordance with the successful bidder's proposal.

2. Filling and Dredging in Coastal Waters and Wetlands; Water Quality

Section 30106 of the Coastal Act defines development, in part, as the "*removing, dredging, mining, or extraction of any materials.*" Section 30108.2 defines fill as the placement of earth or other substance or material in a submerged area. The proposed project involves placement of piers and footings within the wetlands of the Van Duzen River, in addition to temporary excavations, gravel bar contouring, and other measures necessary to construct the proposed project. Therefore, the proposed project constitutes dredging and filling in wetlands.

Section 30233 of the Coastal Act provides as follows, in pertinent part:

- (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

...

(5) *Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

Section 30231 of the Coastal Act address the protection of coastal water quality and marine resources in conjunction with development and other land use activities. Section 30231 states:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of wastewater discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantially interference with the surface water flow, encouraging, wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams. (emphasis added)

The above policies set forth a number of different limitations on what development projects may be allowed in coastal wetlands. For analysis purposes, the limitations can be grouped into four general categories or tests. These tests are:

- that the purpose of the filling, diking, or dredging is for one of the eight uses allowed under Section 30233;
- that the project has no feasible less environmentally damaging alternative;
- that feasible mitigation measures have been provided to minimize adverse environmental effects; and
- that the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

a. Permissible Use for Fill

The first test for a proposed wetland fill/dredging project is whether the fill/dredging is for one of the eight allowable uses under Section 30233(a). The relevant category of use listed under Section 30233(a) that relates to the proposed bridge replacement is subcategory (5), stated as follows:

(5) *Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

In order for the Commission to find that the fill associated with the proposed project is for a use allowable under Section 30233(a)(5), i.e., is for an incidental public purpose, the Commission must first evaluate the purpose of the project. The replacement of the existing southbound bridge is required because of the age and failing condition of the bridge and because scour is occurring at the piers in the riverbed. The project is necessary to ensure the continuing safety of the public transportation system. Since the project would be conducted by a public agency to improve public safety on an existing public highway bridge, the Commission finds that the proposed fill/dredging is a public service purpose consistent with Section 30233(a)(5).

The Commission must next determine if the fill is "incidental." The Commission has in the past determined that the fill for certain highway safety improvement projects was for "incidental" public service purposes under Section 30233(a)(5). In the present case, the Commission finds the public safety purpose of the proposed project is incidental to "something else as primary," that is, the transportation service provided by the existing highway. The expressed purpose and need for the project is to ensure that the existing capacity of Highway 101 remains safe by protecting the structural integrity of the bridged component of the highway in the subject location. There will be no increase in vehicular capacity because the existing two-lane bridge will be replaced by a two-lane bridge of similar configuration, with identical lane widths and shoulders to those of the northbound component of the same bridge crossing of Highway 101. The project is thus solely needed to maintain existing traffic capacity with a higher degree of safety for motorists.

Therefore, the Commission finds that for the reasons discussed above, the proposed fill in coastal wetlands for the proposed project constitutes an incidental public service, and thus is an allowable use pursuant to Section 30233(a)(5) of the Coastal Act.

b. Alternatives

Alternative Analysis

The second test of Section 30233(a) is whether there are feasible less environmentally damaging alternatives to the proposed project. Coastal Act Section 30108 defines "feasible" as follows:

'Feasible' means capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, social, and technological factors.'

Divert All Traffic Onto the Northbound Bridge

As stated previously, the northbound side of the bridge was replaced in 1995 pursuant to Coastal Development Permit No. 1-93-05 (Exhibit 3), and contains two northbound

lanes and 8-ft.-wide paved shoulders adjacent to the outermost lane. This alternative would require rededication of one lane to southbound traffic and would reduce shoulder clearances and require lane reconfiguration. Such changes would reduce the existing level of safety on the bridge because traffic traveling in opposing lanes at highway speed would be further congested, would have less room to maneuver or to allow slower cars to travel in the right hand lane. These problems could potentially result in higher traffic accident rates. In addition, this alternative would still require the removal of the southbound bridge with attendant construction activities within the wetland. Additionally, the proposed bridge has fewer piers and will result in a net reduction of wetland fill that would not be achieved if this alternative were implemented. Therefore, this alternative would not meet project goals or result in significant benefits to the environment in contrast to the proposed project.

Retrofit Existing Southbound Bridge

This alternative involves retrofitting the existing southbound bridge and thus retaining the existing bridge in the existing location and at the existing profile grade. This alternative would not avoid wetland fill because the existing piers would require reinforcement under this alternative, resulting in a net increase in wetland fill compared to the proposed project which will utilize fewer piers within the wetland area. Additionally, this alternative would not be environmentally less damaging because stripping and replacing the existing bridge deck and conducting the under-bridge work necessary to perform the required upgrades would still require the use of heavy equipment in the riverbed area. This alternative would not achieve the matching of bridge decks so as to improve line of sight for drivers traveling at highway speeds on Highway 101. Therefore, this alternative would not meet project goals or result in significant benefits to the environment in contrast to the proposed project.

Construct New Bridge West of the Existing Bridge

This alternative would require the same level of disturbance within the river channel as the proposed project, but would also adversely affect a historic farmhouse property built in 1884, called "East House" located southwest of the Van Duzen River bridges. CALTRANS has verified that this property is eligible for the National Register of Historic Places. Thus, this alternative would not be a less environmentally damaging alternative in contrast to the proposed project.

No Project Alternative

As stated previously, CALTRANS has determined that significant scour is occurring at the bridge piers and that if the scour is not addressed, the bridge may eventually fail. In addition, the bridge requires extensive repairs and has reached the end of its useful life. No one has argued that the project is unnecessary to provide for the continued safe use of this section of Highway 101.

Therefore, the "no project" alternative would not meet the project goal of improving the safety of Highway 101 at this location. Additionally, if the bridge eventually fails, emergency work within the wetland habitat area may be necessary and would not necessarily be undertaken in accordance with the seasonal restrictions and other mitigation measures possible under planned, non-emergency conditions.

Conclusion

Therefore, the Commission finds that this alternative is not a feasible less environmentally damaging alternative to the proposed project, and that no other feasible, less environmentally damaging alternative to the proposed project exists.

C. Feasible Mitigation Measures

The third test set forth by Section 30233 is whether feasible mitigation measures have been provided to minimize significant adverse environmental impacts. Depending on the manner in which the proposed bridge replacement is undertaken, the portions of the proposed project to be conducted below the ordinary high water mark could have potential significant adverse effects to (1) wetland (riverine) habitat, (2) anadromous fish, (3) western snowy plover, and (4) water quality of the Van Duzen River. The potential impacts and their mitigation are discussed in the following four sections:

(1) Wetland Habitat

Proposed pier excavation and construction areas are located in areas below the ordinary high water mark (OHW) and are located within a riverine wetland. Riverine wetlands play an important role in a river ecosystem and provide, among other things, areas of lower velocity during flooding periods, which is critical to the survival of fish species, especially juvenile salmon. Because riverine wetlands serve as migratory corridors, connecting upland with coastal and other aquatic habitat, species richness tends to be higher than that of other terrestrial habitat.

Construction activities within a riverine wetland can potentially damage wetland habitat through a number of mechanisms which affect wetland hydrology and/or hydric soils and/or hydrophytic vegetation. Wetland hydrology can be adversely impacted through soil compaction, such as that resulting from operating heavy equipment in wetland areas, which can alter the physical functions of the wetlands. Additionally, direct impact to wetlands from heavy equipment can adversely impact wetland vegetation, particularly during the wet season.

According to CALTRANS, the proposed project will result in a net reduction of approximately 100 cubic yards in the overall amount of fill within the riverine wetlands of the Van Duzen River, through the excavation and removal of existing piers and the placement of fewer piers within wetland or riparian upland habitat. Disturbance to wetland habitat within the riverbed area will be limited mostly to operation of equipment

within the relatively dry gravel bar area, and to temporary fill due to localized grading of gravels for sediment control, dewatering, and diversion of streamflow from construction areas. No riparian or riparian buffer vegetation is proposed for removal. Access will be via existing roads or via temporary use of the mostly-dry gravel bar areas during low flow season. At the completion of construction, the applicant proposes to return and/or regrade all dewatering areas, sediment basins, temporary gravel bar roads, etc., to the same condition that existed prior to project implementation. In addition, the California Department of Fish and Game has approved a Streambed Alteration Agreement for the proposed project (Exhibit 6). The Agreement specifies measures to ensure that the impacts of the proposed project on riverine wetland habitat are minimized, including measures to restrict concrete, truck washings, fuel, debris, etc., from entering the wetland environment, and the Agreement further restricts removal of riparian vegetation, and requires erosion control measures. The Commission finds that these measures are protective of wetland habitat consistent with the requirements of Coastal Act Section 30233 and therefore has incorporated compliance with these measures into Special Condition 8.

Further, Special Condition 11 (Construction Responsibilities...) contains restrictions that, fully implemented, will ensure that the proposed project activities do not degrade wetland habitat. These measures are discussed in more detail below. Similarly, measures set forth in special conditions protective of anadromous fish species, western snowy plover, and water quality, as discussed below, will afford additional protections and benefits to wetland habitat.

Therefore, for the reasons set forth above, the Commission finds that the proposed project, as conditioned, will minimize significant adverse impacts on riverine wetland habitat consistent with Section 30233 of the Coastal Act.

(2) Anadromous Fish Species

According to the National Marine Fisheries Service, the Van Duzen River estuary functions primarily as a migratory corridor and as juvenile rearing habitat (with limited function as spawning habitat) for Chinook salmon, Coho salmon, and steelhead trout, which are federally (and for Coho salmon, state-) listed threatened species.

The proposed bridge construction project could adversely impact sensitive fish species by increasing water turbidity through the grading, demolition, equipment operation, and release of disturbed sediments and/or contaminants into coastal waters. Specific activities that could create adverse effects to salmonids include: site preparation and construction activity; placement/use/removal of temporary bridge crossing; removal of old bridge and piers; alteration of riverbed by equipment access; installation of new bridge pilings; and pollutant spills and waste discharge.

According to NMFS, suspended sediments can make salmonid prey and predator detection difficult, reduce feeding opportunities, and induce behavioral modifications.

Suspended sediments may also cause respiratory problems for fish, smother incubating eggs or juvenile fish, and reduce habitat by reducing the volume of interstitial spaces within substrate. Additionally, direct impact and/or vibrations resulting from driving the piers or other materials into the aquatic environment could be injurious to fish.

CALTRANS proposes to avoid construction in the active, low flow channel, either by waiting until the channel is dry, or by redirecting channel waters where even low flow requires this, and by using other dewatering techniques. In this manner, CALTRANS proposes to avoid "barotrauma" or the injury to fish that may arise through the propagation of acoustic waves caused by percussion in an aquatic environment. According to the Biological Opinion prepared for the project, the de-watering activities proposed by CALTRANS will avoid the possibility of entrapping fish within the excavation areas of pier construction and removal and where placement of falsework is undertaken.

Pumping within the excavations at the various pier footings will be required to maintain de-watering. 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 a large gravel bar downstream, west of the southbound structure and on the gravel bar within CALTRANS' right-of-way. After construction, any residual silt or fine materials within the settling basin will be removed to a disposal site above the high water level. Depending on changes to channel geometry, pools may form around some piers before construction commences. CALTRANS will remove any listed Pacific salmonids before construction activities begin in an isolated pool, in accordance with NMFS requirements.

At the end of construction year two, and project completion, all dikes, berms, construction material, debris, temporary roads, and the settling basin will be removed and the contours of the gravel bar will be restored to natural elevations.

Additionally, CALTRANS proposes, in accordance with the requirements of NMFS protective of fisheries, to perform work in the low flow channel between June and October (as further required by Special Condition 16). In this manner, construction activities would avoid the period during which eggs and alevins are likely to be present, and will avoid the period of peak salmonid migration and minimize the need to undertake activities in the wet channel area. Thus, the construction schedule proposed by CALTRANS, required by NMFS, and as imposed by Special Condition 16, will avoid impacts to salmonids.

The Biological Opinion prepared by NMFS (Exhibit 4) outlines a number of measures to reduce adverse impacts to salmonids during all phases of the proposed project and related activities. The Biological Opinion concludes that avoiding all impacts to listed salmonids is not possible, but that if the proposed project is implemented in accordance with the recommended mitigation measures, residual impacts will not

adversely affect survival or long-term viability of salmonids utilizing the Van Duzen River. NMFS further states that the bridge replacement project is "not likely to jeopardize the continued existence of listed Pacific salmonids, or destroy or adversely modify designated critical habitat." Special Conditions 6 and 16 incorporate the protective recommendations of NMFS and therefore, fully implemented, will ensure that maximum feasible mitigation for fisheries impacts are undertaken. In addition, measures discussed below to protect water quality will also benefit salmonid habitat within the river. Therefore, the Commission finds that as conditioned, the proposed project will minimize significant adverse effects on riverine wetland habitat.

(3) Western snowy plover

The U.S. Fish and Wildlife Service has determined that the western snowy plover may be present within the vicinity of the project site because (1) potentially suitable nesting habitat exists at the Van Duzen River Bridge site; (2) in May 2002, two snowy plovers were detected at the confluence of the Van Duzen and Eel rivers approximately 0.25 mile from the bridge site; (3) plovers have nested at a site on the Eel River approximately 0.25 to 0.50 mile downstream from the confluence with the Van Duzen River (the proposed project site is located 0.50 mile upstream or east of the confluence of the Eel and Van Duzen Rivers); and (4) as many as 39 breeding plovers have been documented along the Eel River.

Habitat suitability may fluctuate at the project site and along the Eel River during the construction period, since habitat quality and availability can change annually. Plovers typically nest in the open, gravel bars of the river. In high water years, many gravel bars may still be submerged early in the nesting season. In low water years, more gravel bars will be exposed; however, vegetation may become established earlier in the year and reduce the amount of available habitat.

Proposed bridge construction activities, such as grading, riprapping, or deposition of spoil material, will physically modify suitable western snowy plover nesting habitat. Construction activities may increase human-associated disturbance which may reduce the functional suitability of nesting, foraging, and roosting areas, according to the USFWS. Degradation of habitat may also occur as a result of activities that promote unnatural rates of predation, such as human-generated litter, according to USFWS.

The proposed project will require the use of heavy equipment within the riverbed area, and the noise generated by these activities, as well as the disturbance of human presence, may disrupt the species breeding behaviors by disrupting breeding activity or nests, separating adults from their broods, and causing adults and broods to stay away from favored foraging areas. Pedestrians and vehicles may crush highly cryptic eggs or chicks and flush plovers off their nests. Separation of plover adults from their nests and broods can cause mortality through exposure of eggs or chicks to heat, cold, blowing sand, and/or predators.

CALTRANS proposes to minimize entrance of non-construction vehicles into the riverbed area (via new access roads within the gravel bar areas for use by construction equipment operators) by placing barricades and restrictive signage at such locations. In addition, USFWS has developed a number of measures to protect plovers during project construction, as set forth in the Biological Opinion, prepared by USFWS and dated March 12, 2003 (Exhibit 5). These measures include notification of USFWS if plover nesting is detected within the work area, placement of exclosures as necessary, placement of exclusionary fencing between any observed adult plovers or chicks and the active work area, restrictions on trash and food scraps in the area to avoid predator attraction, briefing of construction personnel, and associated monitoring and reporting requirements. The Commission finds these measures protective of the western snowy plover and therefore requires Special Condition 7, which incorporates these requirements by reference. The Commission finds, therefore, that as conditioned, the project will minimize significant adverse effects on riverine wetland habitat.

(4) Water Quality

Due to the project's location adjacent to and within the Van Duzen River, the proposed project has the potential to adversely impact water quality within the riverine environment. The potential water quality impacts from the proposed project include two general categories: (1) increased turbidity in riverine waters during installation and removal of cofferdams and trestle piles and excavation around pier footings, and (2) accidental spills or release of contaminants, such as concrete and equipment fluids, contaminated stormwater runoff from access road construction, mobilization of contaminated sediments, and release of construction debris into river waters.

Turbidity

CALTRANS proposes to exclude the use of explosives for dismantling the bridge. No portion of the bridge will be allowed to drop into the river. The long girder sections of the existing bridge will be removed with the use of cranes, and lowered to the gravel bar outside of the active stream channel. As discussed previously, streamflow will be diverted by a temporary dike constructed of river-run gravel so that a dry work area is maintained during installation and removal of other construction-related materials. In addition, construction activities will be limited to the driest season, from June to October as required reduce impacts to fisheries, pursuant to Special Conditions 6 (Fisheries) and 16 (Timing).

Other measures to control erosion will also reduce turbidity caused by mobilization of sediments. CALTRANS proposes to undertake Best Management Practices such as temporary use of mulches or blankets, straw bale barriers or fiber rolls, jute fiber netting, and silt fences, and more permanent measures, such as biofiltration, mulch, and revegetation. Fill slopes placed to elevate the bridge takeoffs and highway to the same elevation as the northbound bridge will be revegetated with appropriate locally-

native plant species in accordance with CALTRANS' proposal and as required by Special Condition 13. In addition, CALTRANS will finalize and submit for Executive Director approval, a Final Storm Water Pollution Prevention Plan pursuant to Special Condition 9 prior to commencement of construction. The SWPPP incorporates water pollution control practices, including soil stabilization, sediment control, wind erosion control, tracking control, non-storm water management, waste management and material's pollution control. These measures include practices that will reduce turbidity. Additionally, Special Condition 9 incorporates water quality protection measures set forth by the California Regional Water Quality Control Board, North Coast Region, in its May 5, 2004 Clean Water Act Section 401 Certification for the proposed project. These measures include avoidance of discharge of soils and silts, as well as other potential contaminants either directly or indirectly into the Van Duzen River, and therefore, fully implemented, will additionally ensure that turbidity is minimized, in addition to other water quality protection measures discussed below.

Release or Mobilization of Contaminants or Debris

The proposed project involves the use of potentially hazardous materials on site and near bay waters. Potential contaminants include vehicle and heavy equipment fluids such as oil, grease, petroleum, hydraulic fluids, fuels, and coolants. In addition, the project requires the use of substantial amounts of concrete that would be poured from construction trestles or the bridge deck into the river area into pre-cast forms to retrofit the footings and columns. Wet concrete or cement powder and heavy equipment fluids can be toxic to marine life if they were to come in contact with coastal waters.

CALTRANS has not provided specific measures to prevent concrete from coming into contact with river waters, but has indicated that their contractor would be responsible for preparing a hazardous materials management and spill response plan that would provide measures for minimizing potentially hazardous and toxic materials from entering the Van Duzen River. Special Conditions 11 and 12 set forth specific requirements for such plans and require that the final plans be submitted to the Executive Director for review and approval prior to commencement of construction. This allows CALTRANS to include the selected contractor in the preparation of such plans but ensures that the plans incorporate all specified measures to protect coastal waters.

CALTRANS has submitted a conceptual Stormwater Pollution Prevention Plan that addresses only general Best Management Practices for concrete washout facilities, but does not provide site-specific measures for containing concrete, responding to accidental spills, or for locating fueling, or concrete wash-out and maintenance facilities. As discussed further below, Special Condition 11 provides additional guidance and specifications on construction management practices and requirements that, fully implemented, will reduce any potential for concrete or other spills into the Van Duzen River. Additionally, Special Condition 12 requires a final hazardous material management plan subject to the review and approval of the Executive Director that sets forth measures to prevent the intrusion of potentially hazardous

materials into the river corridor. Special Condition 9 requires submittal of the Final Storm Water Pollution Prevention Plan, for the review and approval of the Executive Director, prior to the commencement of construction, and further incorporates the requirement that all project activities be conducted in accordance with the requirements of the Section 401 Certification (Exhibit 7) and the Final SWPPP.

CALTRANS indicates that sediments in the riverbed that must be excavated to undertake the project are known to contain lead and other contaminants that have degraded from bridge paint flakings and bridge maintenance activities. The Mitigated Negative Declaration, prepared by CALTRANS in June 2003, contains some measures to address the recovery and disposal of such contaminated sediments as stated previously, but defers much of the determination of a final plan to the contractor eventually selected. If contaminated sediments are stored near the Van Duzen River and are not properly identified, controlled, and disposed of, rainwater and winds may re-introduce contaminated material into the waters of the river. Special Condition 12 requires, among other measures, that specific provisions for testing, cleanup, containment, and disposal of such contaminated materials be incorporated into a final Hazardous Materials Management Plan to prevent re-contamination of the Van Duzen River or other accidental or deliberate potential disposal locations.

Special Condition 11, as stated above, sets forth specific construction site practices and disposal standards designed to prevent contamination of coastal waters. These measures include prohibiting machinery or construction materials within the river corridor unless essential for project construction, prohibiting the discharge of debris into coastal waters and requiring immediate recovery of materials or wastes accidentally discharged, establishing protocols for storage and removal of debris, and requiring that all debris be finally disposed either in a licensed facility lawfully able to accept such wastes, or, if disposal is in the coastal zone, at a facility so licensed and subject to a coastal development permit.

In addition, Special Condition 12 requires the applicant to submit for the review and approval of the Executive Director, a Hazardous Materials Management Plan. The Plan is required to provide for the following: (1) equipment fueling must occur only during daylight hours in designated fueling areas; (2) oil absorbent booms and/or pads are required to be on site at all times during project construction; and (3) all equipment used during construction shall be free of oil and fuel leaks at all times. Additionally, Special Condition No. 12 requires the plan to include: (1) provisions for preparing and pouring cement over coastal waters in a manner that will prevent spills or overpours from entering coastal waters, including placement of protective measures such as catch basins, mats or tarps beneath the construction trestle area; (2) a schedule for maintenance of containment measures on a regular basis throughout the duration of the project; (3) provisions for the handling, cleanup and disposal of any hazardous or non-hazardous materials used during the construction project including, but not limited to, cement, equipment fuel and oil, and contaminated sediments; (4) provisions for the containment of rinsate from the cleaning of equipment, including cement mixing

equipment, and methods and locations for disposal off site; (5) a site map detailing the location(s) for hazardous material storage and equipment fueling and maintenance and, (6) reporting protocols to the appropriate public and emergency services/agencies in the event of a spill.

CALTRANS also proposes the temporary placement of a bridge for construction access/crossings of the river annually. This component of the proposed project is subject to all other conditions, including Special Condition 10 which requires that such structures, and other temporary project components such as the "falsework" constructed in preparation for concrete pourings, if they are made of wood and could contact the waters of the Van Duzen River, shall not include creosote- or other chemical preservative-treated members, which may discharge pollutants. Wood preservatives can potentially leach out of piles and into the water column where they can be absorbed by fish and other aquatic organisms with potentially adverse consequences. Special Condition 10 further requires that where materials may contact the waters of the river, only materials deemed safe for such use by the California Department of Fish and Game may be used. Fully implemented, this condition will ensure that chemical contaminants arising as a by-product of wood treatment do not inadvertently contaminate the waters of the river and affords the opportunity to utilize materials composed of concrete, steel, composite, untreated timber or timber treated with a preservative approved by CDFG for use in marine waters.

Consistency with Section 30412 of the Coastal Act

Coastal Act Section 30412 states in pertinent part:

(a) In addition to Section 13142.5 of the Water Code, this section shall apply to the commission and the State Water Resources Control Board and the California regional water quality control boards.

(b) The State Water Resources Control Board and the California regional water quality control boards are the state agencies with primary responsibility for the coordination and control of water quality. The State Water Resources Control Board has primary responsibility for the administration of water rights pursuant to applicable law. The commission shall assure that proposed development and local coastal programs shall not frustrate this section. The commission shall not, except as provided in subdivision (c), modify, adopt conditions, or take any action in conflict with any determination by the State Water Resources Control Board or any California regional water quality control board in matters relating to water quality or the administration of water rights.

Except as provided in this section, nothing herein shall be interpreted in any way either as prohibiting or limiting the commission, local government, or port governing body from exercising the regulatory controls over development pursuant to this division in a manner necessary to carry out this division.

Section 30412 prevents the Commission from modifying, adopting conditions, or taking any action in conflict with any determination by the State Water Resources Control Board or any California Regional Water Quality Control Board in matters relating to water quality.

Staff consulted with the Regional Water Quality Control Board (RWQCB) about permitting requirements and potential impacts resulting from the proposed project. CALTRANS has received approval from the Regional Water Quality Control Board, including a Clean Water Act Section 401 Certification (Exhibit 7) and a National Pollution Discharge Elimination System (NPDES) General Permit for the retrofit project. In addition, the project is subject to a general State Wide Storm Water Permit issued to CALTRANS for all of its construction projects. The specific requirements of these permits and approvals have been incorporated by reference in the applicable special conditions discussed above.

The Clean Water Act Section 401 Certification sets forth seven project conditions. The conditions generally prohibit the discharge of any construction-related debris or other waste including oil or petroleum products, wash waters, or concrete treatment chemicals into the Van Duzen River. In addition, the conditions require that disturbance and/or removal of vegetation and soil be minimized and that disturbed areas be revegetated following project construction, and that CALTRANS implement Best Management Practices for control of sediment and turbidity.

CALTRANS has previously been issued a State Wide Storm Water Permit (State Wide Permit) and has additionally prepared a Conceptual Storm Water Pollution Prevention Plan for the Van Duzen River Bridge replacement project. The NPDES general permit sets forth general discharge prohibitions, receiving water limitations, solids disposal requirements, and provisions for monitoring and reporting to the RWQCB. The NPDES permit reiterates several conditions contained in the 401 Certification regarding turbidity and pH limitations of waste discharge. The NPDES permit also requires that all solids disposal be disposed of at a legal disposal site approved by the RWQCB, and sets forth monitoring and reporting provisions that must be adhered to during the course of the project.

The Commission finds that requiring the Special Conditions discussed above to minimize adverse impacts to water quality does not conflict with any determination by the State Water Resources Control Board or any California Regional Water Quality Control Board in matters relating to water quality as required by Section 30412 of the Coastal Act. In acting on the project, the Regional Water Quality Control Board determined that the project as proposed could have significant water quality impacts and as a result, imposed various water quality control requirements in its permit approvals for the project to address the water quality impacts. The Commission's action to impose water quality conditions does not conflict with the Regional Board's determinations on water quality as the special conditions imposed by the Commission to address water quality reiterate mitigation measures proposed by the applicant.

and/or would help ensure that the water quality standards established by the Regional Board for the project are implemented and realized through the incorporation of specific water quality control measures.

Conclusion

For all of the reasons set forth above, the Commission thus finds that the project is an allowable use, that there is no feasible less environmentally damaging alternative, that feasible mitigation is required to minimize all significant adverse impacts associated with the dredging and filling of coastal wetlands, that wetland habitat values will be maintained or enhanced, and that coastal water quality will be protected against degradation as the result of the proposed project. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Sections 30233 and 30231 of the Coastal Act.

3. Protection of Adjacent Environmentally Sensitive Habitat Area (ESHA)

Section 30240 of the Coastal Act states:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

CALTRANS has provided a supplemental review of sensitive species that may potentially utilize the general area of the proposed project, received on September 23, 2004. The Supplement states:

Foothill yellow-legged frog (*Rana boylei*)

This species is a California Department of Fish and Game Species of Concern on north coast. It has no federal special status. Yellow-legged frogs inhabit shallow, flowing water. They prefer small to moderate-sized streams with some cobble-sized substrate for egg laying that also provide refuge habitat for larvae and sub-adults. Since yellow-legged frogs inhabit shallow streams with gentle flow of water, the lower reaches of the Van Duzen are not suitable habitat. The reach of the river that would be impacted by this project has swift, deep flows in the winter rainy season. In the summer dry season, the river shrinks to a narrow channel through wide gravel bars. Observational surveys of the river conducted in spring and summer of 2003 within the project impact area found no amphibian species.

Northern red-legged frog (*Rana aurora aurora*)

A Species of Special Concern with DFG (but not the same species as the more southerly, federally threatened California red-legged frog), the northern red-legged frog has no special status federally. In northwestern California, northern red-legged frogs inhabit streamside flats within coastal redwood forest. This habitat is characterized by a dense undergrowth ferns, sedges and other herbaceous vegetation. The Van Duzen River at Route 101 offers no habitat suitable for red-legged frogs.

Northwestern pond turtle (*Clemmys marmorata marmorata*)

Northwestern pond turtles are a DFG Species of Special Concern with no federal special status. They inhabit slower-moving, low gradient streams with basking sites. The high winter flows in the Van Duzen are unsuitable for northwestern pond turtles. Observational surveys conducted up and downstream of the project impact area of the river in spring and summer of 2003 found no northwestern turtles.

Coastal cutthroat trout (*Oncorhynchus clarki clarki*)

This species is a DFG Species of Special Concern with no federal status. Coastal cutthroat inhabit small, low gradient coastal streams and estuarine habitats. They can be found in cool, well shaded streams with an abundance of instream cover. The anadromous form of this species could pass through this reach of the Van Duzen River. The impact avoidance measures outlined on the NOAA Fisheries Biological Opinion for listed salmonids would also minimize impacts to coastal cutthroat trout.

California red tree vole (*Arborimus pomo*)

A CDFG Species of special concern, the California red tree vole has no federal special status. Red tree voles spend nearly their entire life in the upper canopy of Douglas fir forest. They eat needles almost exclusively. They nest in the high canopy on branches near the trunk. Since there is no suitable forested habitat in the project impact area, tree voles will not be affected by this project.

Bank swallow (*Riparia riparia*)

This species is State listed as threatened, it has no federal listing. Bank swallows nest in colonies. They burrow into vertical banks of fine-texture soils to make nest cavities. There is suitable habitat for bank swallows on the Eel River more than a mile downstream of the project location. The river banks are more sandy there. However there is no suitable habitat for this species in the project area. Observational surveys of the river banks up and downstream of the project impact area of the river in spring and summer of 2003 and 2004 found no bank swallows or nests.

Cliff swallow (*Petrochelidon pyrrhonota*)

No special state or federal status. Cliff swallows make mud nests attached to sheltered vertical surfaces such as rock overhang or cliffs. They also build nests on human-made structures such houses, bams, and bridges. Surveys conducted in the spring and summer of 2002, 2003, and 2004 found cliff swallow nests present under the bridge in the seismic cable restrainers are attached to the underside of the bridge superstructure. The nest sites under the bridge will be blocked prior to the birds' arrival

in the spring to avoid impacts to nesting birds when the bridge is demolished. . To minimize impacts to cliff swallows, alternative permanent nest sites will be provided by installing posts near the piers.

Northern rough-winged swallow (*Stelgidopteryx serripennis*)

No special state or federal status. These swallows nest in cavities in river banks, cliffs, or crevices in man-made structures, usually near water. They breed from April to August. When the project area site was surveyed in the summer of 2002, 2003 and 2004, northern rough-winged swallows were found nesting in the holes on the concrete piers where the seismic cables go through. The nest sites under the bridge will be blocked prior to the birds' arrival in the spring to avoid impacts to nesting birds when the bridge is demolished. To minimize impacts to rough-winged swallows, alternative permanent nest sites will be provided on posts near the piers.

The only identified species that may be impacted by the proposed project, other than as discussed in findings set forth above, therefore, are migratory nesting birds such as cliff or rough-winged swallows. Except for bank swallows, which have not been found on the project site, as stated above these species have no special state or federal status. The applicant proposes, as part of the subject project, to provide alternative nesting habitat for migratory nesting birds at the project site. Accordingly, Special Condition 15 incorporates the applicant's proposal and ensures that performance of the mitigation measures as well as a follow-up study of success are undertaken systematically.

Finally, as stated previously, placement of fill to support the raised roadbed and bridge ends will be undertaken in areas adjacent to, but not located within, wetland areas or other environmentally sensitive habitat areas. The applicant does not propose to undertake any project activities that would adversely affect the upland riparian woodlands along the north and south banks of the river. No riparian vegetation will be removed. Additionally, CALTRANS has proposed a number of mitigation measures as part of the proposed project to minimize impacts to water quality and the aquatic habitat of the Van Duzen River itself. Mitigation measures proposed and required to protect wetland habitat, anadromous fish species, and water quality are discussed in Finding #2 above, and in this section. These mitigation measures will also ensure that the riparian woodlands above the level of ordinary high water line along both banks of the river are protected from significant disruption, consistent with the applicable requirements of Coastal Act Section 30240.

With the mitigation measures that are proposed and required, the project as conditioned will not significantly degrade ESHA or habitat areas adjacent to ESHA, and will be compatible with the continued use of the habitat areas in and adjacent to project operations. Therefore, the Commission finds that the project as conditioned is consistent with Section 30240 of the Coastal Act.

4. Public Access; Visual

Public Access

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214, the Commission is also limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential access.

Recreational use of the river in this particular section of the river is very limited, largely because there are very few access points to the river. The principal public access use of the project site that does occur is by fishermen who use the river channel for recreational fishing. Other public access and recreational uses of this stretch of the river include canoeing and recreational boating, which would be interrupted occasionally during heavy equipment operation. Traffic on Route 101 would be re-routed to the northbound lanes, which would cause some slowing, but would not significantly inhibit public access to or along the coast via this major coastal access transportation artery. Special Condition 14 requires that to the extent feasible and consistent with public safety and the protection of sensitive resources, the applicant provide detour routes and signage indicating directions to nearest alternative accessways when trail or access road closures are necessary. Special Condition 14 also requires that after project completion, all public accessways be fully restored, consistent with necessary erosion control measures. Fully implemented, Special Condition 14 will ensure that public access impacts are limited and of short-term duration. In addition, Special Condition 11 (Construction responsibilities...) requires submittal of a demolition plan that includes measures to ensure public safety for pedestrians, bicyclists, and drivers on the northbound bridge and in the riverine area during potentially hazardous construction activities. Therefore, the Commission finds that as conditioned, the proposed project is consistent with the public access and recreation requirements of the Coastal Act.

Visual

Coastal Act Section 30251 states:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

The Van Duzen River is designated as a Wild and Scenic River by the US Department of the Interior, National Park Service. According to the NPS, the Van Duzen River was designated in part for its notable scenic and wildlife values. Views from the bridge are panoramic, and will be improved by raising the southbound deck to the same elevation as the northbound deck (replacement of the northbound bridge was completed in 1995). In addition, CALTRANS proposes to utilize a newly approved bridge rail (final approval within CALTRANS' technical review units is pending, but anticipated prior to commencement according to CALTRANS staff), known as type "ST-20." (See Exhibit 8). This bridge rail is the most visually permeable bridge rail type yet utilized by CALTRANS within the state, and represents the current "state-of-the art" for providing maximum open viewing area for those utilizing the bridge. Therefore, the Commission finds that the proposed project, utilizing ST-20 bridge railing, is consistent with the requirements of Coastal Act Section 30251.

5. State Lands Commission

The State Lands Commission has granted right-of-way to the California Department of Transportation for purposes of establishing rights-of-way for highways and for use in protecting highways from damage or destruction by natural forces. Such a grant of right of way covers the streambed of the Van Duzen River up to the mean high water mark. According to CALTRANS, the proposed bridge replacement project will require additional authorization by the State Lands Commission, which has been scheduled for review at the October 2004 CSLC hearing. Special Condition 1 requires CALTRANS to provide evidence that final authorization has been received from CSLC for the bridge replacement proposal, prior to issuance of Coastal Development Permit 1-04-014.

6. U.S. Army Corps of Engineers Review

The project is within and adjacent to a navigable waterway and is subject to review by the U.S. Army Corps of Engineers (USACE). Pursuant to the Federal Coastal Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that

state. Under agreements between the Coastal Commission and the USACE, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches Special Condition No. 2 that requires the applicant, prior to the commencement of construction, demonstrate that all necessary approvals from the USACE for the proposed project have been obtained.

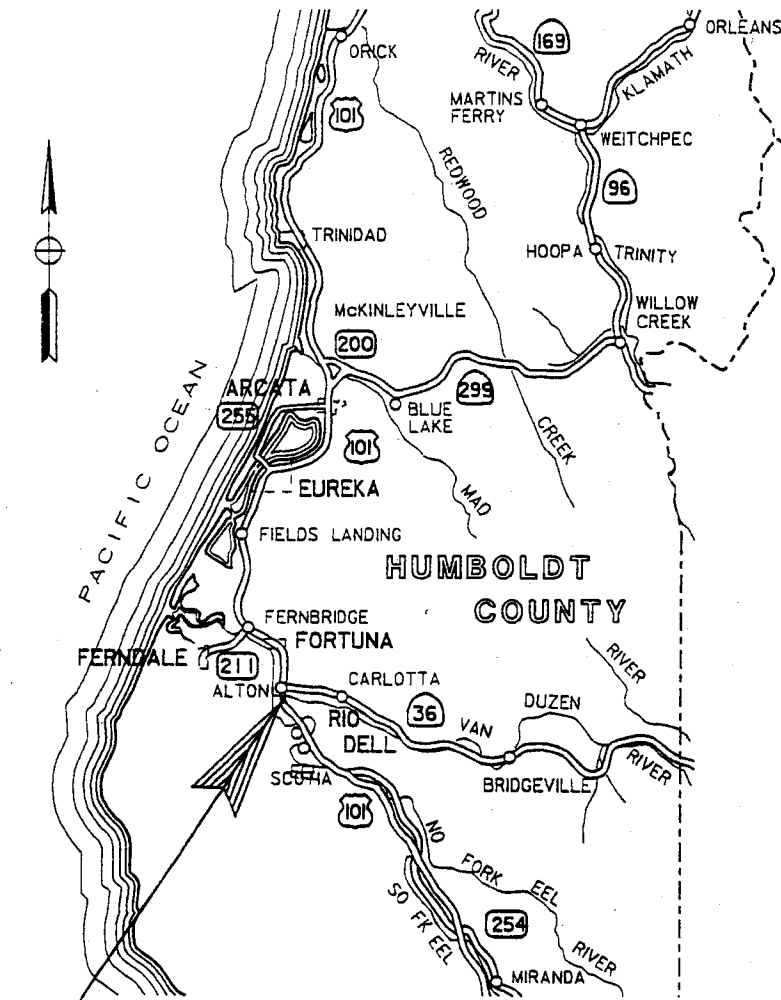
7. California Environmental Quality Act

Section 13096 of the Commission's administrative regulations requires Commission approval of a coastal development permit application to be supported by findings showing that the application, as modified by any conditions of approval, is consistent with any applicable requirement of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. As discussed above, the proposed project has been conditioned to be found consistent with the policies of the Coastal Act. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. Mitigation measures that will minimize or avoid all significant adverse environmental impact have been required. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

DIST	COUNTY	ROUTE	KILOMETER	POST	MILE	POST
01	Hum	101	90.4/92.5		56.2/57.5	

PROJECT LOCATION MAP



PROJECT LOCATION

ROUTE 101

POST MILE 56.2/ 57.5

EXHIBIT NO. 1

APPLICATION NO.

1-04-014

CALTRANS

LOCATION MAPS (1 of 2)

NO SCALE

FIGURE 1

LOCATION MAP

VAN DUZEN RIVER BRIDGE REPLACEMENT PROJECT



DATE: 2/2/04

Caltrans, District 1
P.O. Box 3700
Eureka, CA 95502

DIST	COUNTY	ROUTE	KILOMETER POST	MILE POST
01	Hum	101	90.4/92.5	56.2/57.5

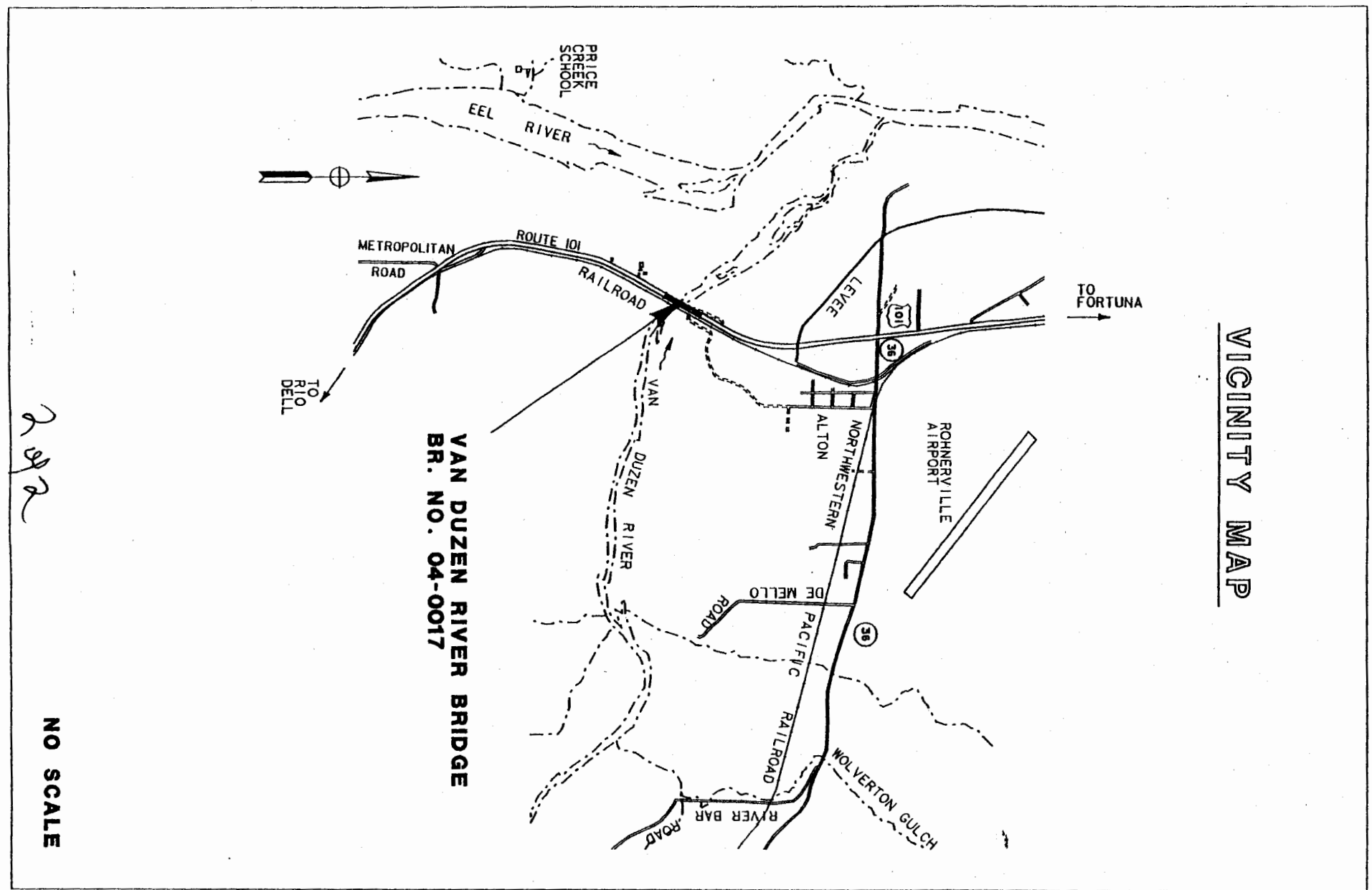


FIGURE 2

VICINITY MAP

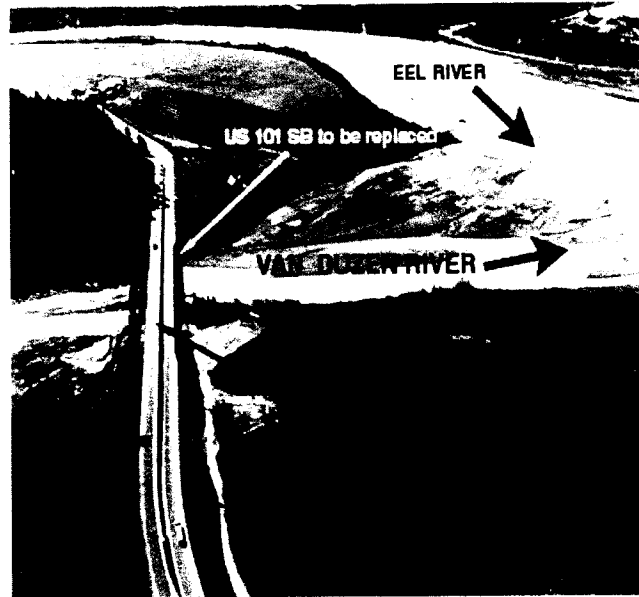
VAN DUZEN RIVER BRIDGE REPLACEMENT PROJECT

Caltrans, District 1
P. O. Box 3700
Eureka, CA 95502



DATE: 2/2/04

Exhibit 1A
Oblique aerial photo of proposed project area
Southbound Van Duzen River Bridge Replacement
Highway 101, So. of Fortuna,
Humboldt County



**CDP Application No. 1-04-014
Van Duzen River Bridge Replacement
Highway 101**

**Exhibit 2
(Two sheets attached)**

**Site plan and location;
Typical cross-section**

EXHIBIT NO. 2

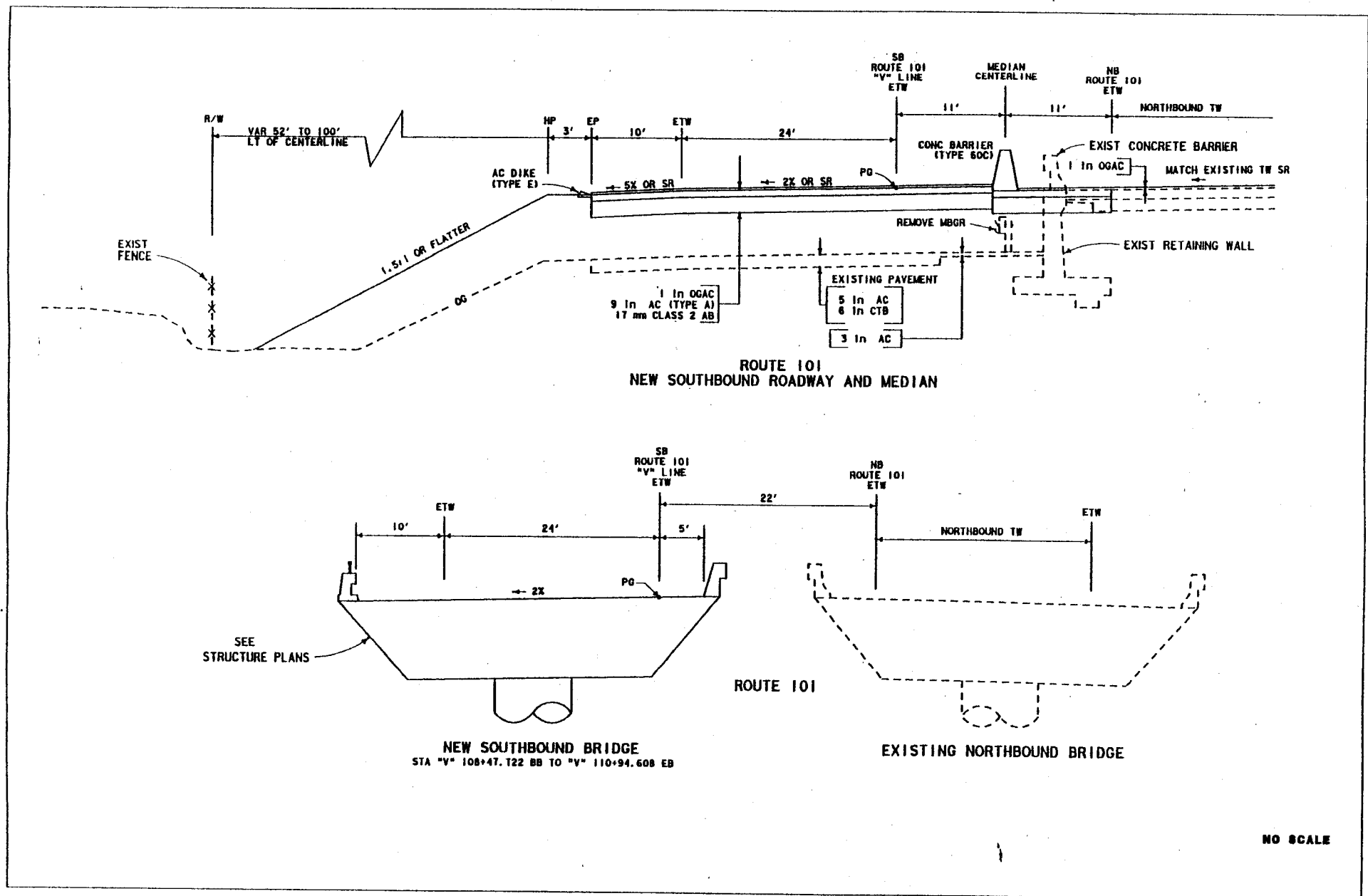
APPLICATION NO.

1-04-014

CALTRANS

PLANS (1 of 3)

DIST	COUNTY	ROUTE	KILOMETER POST	MILE POST
01	Hum	101	90.4/92.5	56.2/57.5



Caltrans, District 1
P. O. Box 3700
Eureka, CA 95502



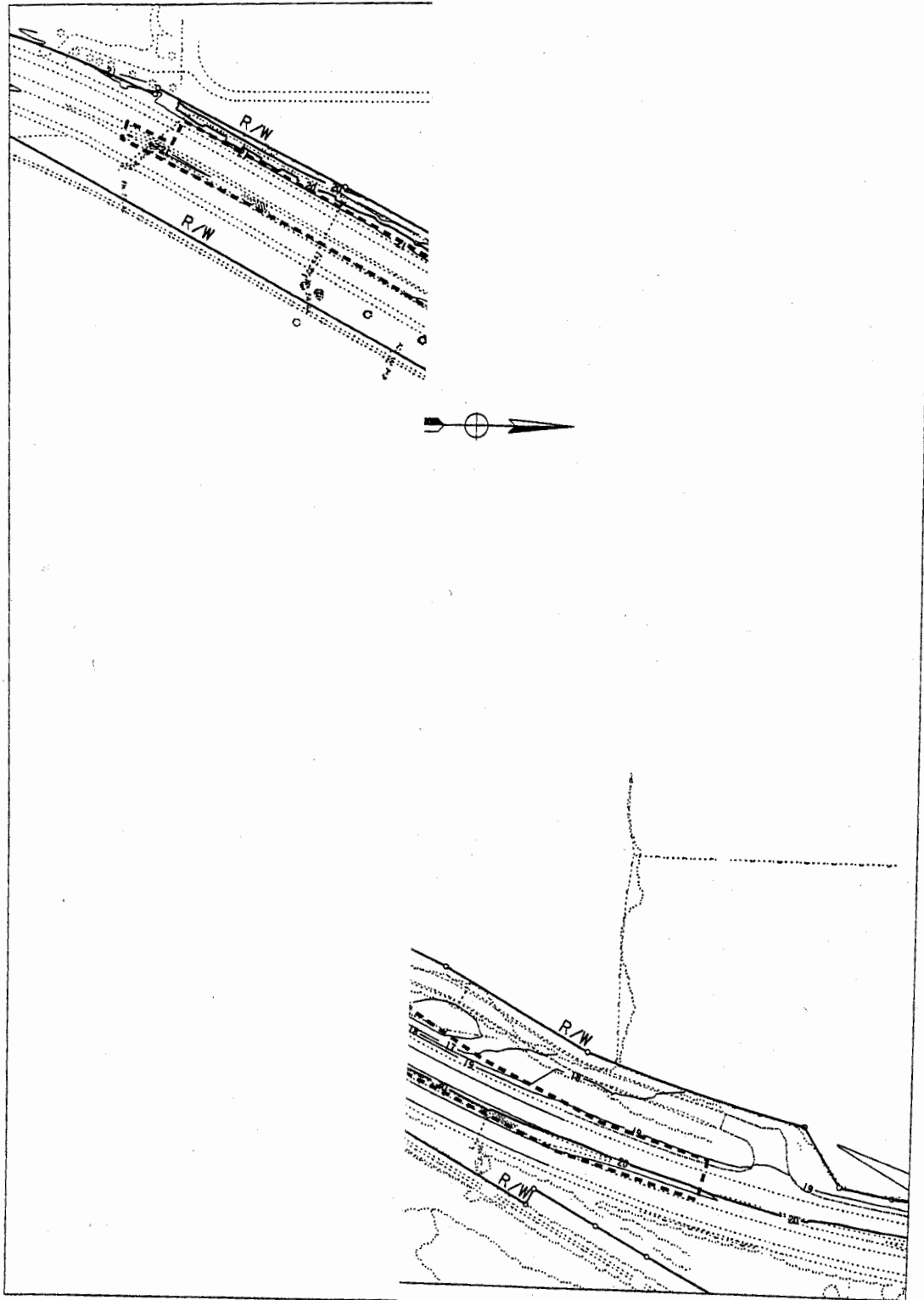
DATE: 2/2/04

FIGURE 3

TYPICAL CROSS SECTIONS

VAN DUZEN RIVER BRIDGE REPLACEMENT PROJECT

DIST	COUNTY	ROUTE	KILOMETER POST	MILE POST
01	Hum	101	90.4/92.5	56.2/57.5



LEGEND

ORDINARY HIGH WATER = 48' (14.7m) (NAVD 88)
 CONTOURS ARE METRIC (NAVD 88)
 FOOTPRINT OF PROJECT - - - - -

UR MAP & PROJECT AREA

GE REPLACEMENT PROJECT

Caltrans, District 1
 P.O. Box 3700
 Eureka, CA 95502

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

PROJECT ENGINEER

MARK F. SOBOTA

REVISION
 -00-00
 DATE PLOTTED -> 21-SEP-2004
 TIME PLOTTED -> 16:02

CALIFORNIA COASTAL COMMISSION

NORTH COAST AREA

45 FREMONT, SUITE 2000

SAN FRANCISCO, CA 94105-2219

(415) 904-5260

Staff:

Staff Report:

Hearing Date:

Commission Action:

Robert Merrill

April 2, 1993

April 16, 1993

**Approved with
Condition 4/16/93****ADOPTED FINDINGS**APPLICATION NO.: **1-93-05**APPLICANT: **CALIFORNIA DEPARTMENT OF
TRANSPORTATION, DISTRICT 1**

PROJECT LOCATION: Highway 101 bridge over the Van Duzen River, five miles south of Fortuna, Humboldt County.

PROJECT DESCRIPTION: Replace the north bound Highway 101 bridge over the Van Duzen River.

LOCAL APPROVALS RECEIVED: County approval not needed.

OTHER APPROVALS RECEIVED: California Dept. of Fish and Game 1601 streambed alteration agreement.

OTHER APPROVALS REQUIRED: State Lands Commission lease; California Regional Water Quality Control Board waste discharge requirements, and U.S. Army Corps of Engineers Section 404 permit.

SUBSTANTIVE FILE DOCUMENTS: Humboldt County LCP.

EXHIBIT NO. 3**APPLICATION NO.**

1-04-014

CALTRANS

1-93-05 ADOPTED
FINDINGS (1 of 19)

STAFF NOTE: The Commission held a public hearing and approved this permit at the meeting of April 16, 1993. The adopted findings for approval differ from those contained in the written staff recommendation dated April 2, 1993. At the public hearing, the staff revised its recommendation to delete a finding entitled, "Coastal Commission Jurisdiction," and to slightly revise the wording of the second to the last paragraph of the finding entitled, "Protection of Biological Productivity, Water Quality, and Environmentally Sensitive Habitat Areas."

The following resolution, conditions, and findings were adopted by the Commission on April 16, 1993, upon conclusion of the public hearing.

I. Approval with Conditions.

The Commission hereby grants a permit, subject to the conditions below, for the proposed development on the grounds that the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, will not prejudice the ability of the local government having jurisdiction over the area to implement a Local Coastal Program conforming to the provisions of Chapter 3 of the Coastal Act, is located between the sea and

ADOPTED FINDINGS - 1-93-05

CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 1

Page 2

the first public road nearest the shoreline and is in conformance with the public access and public recreation policies of Chapter 3 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

II. Standard Conditions. See attached.

III. Special Conditions.

1. State Lands Commission Review.

PRIOR TO THE ISSUANCE of the coastal development permit, the applicant shall submit to the Executive Director a written determination from the State Lands Commission that:

- a. No State lands are involved in the development; or
- b. State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or
- c. State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

2. U.S. Army Corps of Engineers Review.

PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the applicant shall submit to the Executive Director a copy of a U.S. Army Corps of Engineers permit or letter of permission for the project authorized herein.

3. Grading Operations.

The project's grading operations shall not permanently alter the size or configuration of the Van Duzen River.

4. Disposal of Excess Materials.

All surplus material, spoils, and debris shall be removed from the site upon completion of the project. Placement of any surplus material or debris in the coastal zone at a location other than in a licensed landfill will require a coastal development permit.

5. Fisheries Mitigation

The applicant shall implement the mitigation measures designed to minimize impacts on fishery resources as proposed in the application (including but not limited to maintaining a corridor for migrating fish, minimizing sedimentation, and recontouring the river channel following construction) and as contained in the Department of Fish and Game 1601 streambed alteration agreement.

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6. Riparian Mitigation

The applicant shall implement the riparian mitigation and monitoring plan submitted with the application.

7. Public Access

To allow for continued use of the river by fishermen and other public access users, the applicant shall (a) not close the existing entry onto Highway 101 of the dirt access road north of and nearest the bridge on the west side of the highway, until the roadway has been extended north and a new entry onto the highway has been established; and (b) allow fishermen and other users of the river to pass through the construction staging area during the entire construction period.

IV. Findings and Declarations.

The Commission hereby finds and declares as follows:

1. Site Description.

The Highway 101 Van Duzen River Bridge is located approximately five miles south of Fortuna, approximately one-half mile upstream or east of the confluence of the Van Duzen and Eel Rivers. The rural area surrounding the site is mainly flat bottom land used for grazing and open space.

The Highway 101 Van Duzen River Bridge consists of two separate bridges located side by side, one carrying northbound traffic and the other southbound traffic. An historic railroad bridge carrying the main line of the North Coast Railroad also crosses the Van Duzen in this location, in an alignment parallel to and less than 50 feet east of the northbound highway bridge.

The northbound bridge is a concrete arch structure built in 1924. The northbound bridge provided two-way traffic until the southbound bridge was constructed in 1952. At that time the northbound bridge was converted to two northbound lanes. However, the narrowness of the older northbound bridge (21 feet of clear roadway width) contributed to a high accident rate on the bridge, and in 1974 the northbound bridge was restricted to a single lane of northbound traffic. The northbound bridge is the only section of single line highway within a 104-mile stretch of Highway 101.

From bank to bank, the bridges are both approximately 800 feet long. However, the width of the river channel in this location is only about 400 feet at ordinary high water (OHW), and less than 50 feet during low flow conditions in the summer.

The river bottom is entirely composed of river run gravel. Extensive riparian woodlands exist along the north bank of the river, extending several hundred feet back from the shoreline. A much narrower band of riparian woodland,

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approximately 50 feet wide, flanks the south bank of the river. A field survey conducted by the applicant identified no rare plants in the project area. The channel of the river serves as a seasonal migration channel for various anadromous fish, including chinook and coho salmon, and steelhead trout. The river channel in the project area does not serve as a salmonid rearing or spawning area.

A great deal of public access use is made of the north bank of the river. A private dirt roadway that intersects the west side of the highway several hundred feet back from the river's edge and a connecting network of other dirt roads and barren dirt areas appear to be used extensively for river and fishing access by the general public. These lands outside the highway right-of-way are privately owned and do not contain developed public access facilities, but appear to be extensively used nonetheless.

The northbound bridge is eligible for inclusion on the National Register of Historic Places. The bridge embodies distinctive characteristics of construction and was designed under the direction of Harlan Miller, a significant figure in California bridge design. In accordance with various historic preservation laws, the applicant will document the bridge prior to its removal with detailed studies which include measured drawings, photographs, and architectural and historical data conforming to standards of the Historic American Engineering Record.

2. Project Description.

The applicant proposes to replace the northbound highway bridge. The new bridge will be constructed on the same alignment as the existing structure, which will be demolished.

The existing bridge does not meet current design standards and was considered structurally deficient even before suffering structural damage in the Humboldt County earthquakes of April 25-26, 1992. An evaluation in 1979 concluded that "this structure is nearing the end of its useful life and its original integrity cannot be restored." The narrowness of the bridge and its one lane configuration contribute to higher than expected accident rates. The accident rate for this segment of highway for the three year period from October 1, 1987 to October 1, 1990 was 1.46 accidents per million vehicle miles. The expected rate for similar highways is 0.69 accidents per million vehicle miles.

During demolition and construction of the northbound bridge, two-way traffic will be routed onto the existing south-bound bridge. To accommodate two-directional traffic, the bridge railings on the southbound bridge will be reconstructed to narrow the width of the railing footings and allow greater roadway width for traffic.

The new northbound bridge will have a 39-foot clear deck width which will provide two 12-foot lanes, a 10-foot outside shoulder, and a 5-foot inside shoulder. A 22-foot separation would be maintained between the new bridge and

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CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 1

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the existing southbound bridge. The span of the new northbound bridge will be supported by three supporting piers, which will require the placement of approximately 570 cubic yards of concrete in sealed forms for footings and the piers themselves, plus 108 steel piles below the footings. An additional 600 cubic yards of rock backing and rock slope protection will be placed at the bridge abutments.

To improve sight distances and traffic safety, the new bridge will be constructed at a slightly higher level than the existing bridge. Raising the height of the bridge will require raising the height of the approaches to the bridge. A total of approximately 30,000 cubic yards of earthen material will be placed in upland areas to raise the approaches.

To construct the project, the river channel will need to be temporarily diverted and temporary construction access roads will need to be constructed within the riverbed. Up to 4,000 cubic yards of gravel may need to be excavated for a bypass channel to divert the low flow of the river around the work area and to facilitate access to the new bridge piers and abutments. Temporary bridges or culverts may also need to be installed. The excavated gravel will be temporarily stockpiled at the construction site above ordinary high water until the project is completed. After bridge construction is complete, the gravel will either be backfilled into the bypass channel, the natural channel, or spread out on the unvegetated river bar, filling in all holes and depressions from construction, as required by the Department of Fish and Game. A temporary sediment retention basin may also be excavated on a dry, unvegetated portion of the river bar to contain muddy waters pumped from pier or abutment foundations. The basin would be backfilled and smoothed over upon project completion.

As noted, raising the height of the northbound bridge will require raising the grade of the roadway north of the bridge. Raising the grade will not allow access from the northbound lanes of the highway to the private dirt road along the west side of the highway that is used by the public for fishing and river access. To retain the capability of turning onto and off of the northbound highway from this access road, and to consolidate highway access openings, the applicant proposes to extend the dirt access road northward parallel to the highway to where it would join with another existing access to the highway. The more southerly access point to the highway would then be eliminated.

Extending the dirt access road will result in the removal of approximately one-half acre of non-wetland riparian vegetation. Loss of the vegetation will be mitigated by replacement-in-kind on an approximately one-acre property just across the highway and slightly north of the affected area.

3. Fill in Coastal Waters and Wetlands

The Coastal Act defines fill as including "earth or any other substance or material...placed in a submerged area." The proposed project includes placing fill in coastal waters and wetlands. The permanent fill to be placed below

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Page 6

the ordinary high water line (OHWL) consists of the two new bridge columns and their associated footings and piles, as well as the rock slope protection and backfill to be placed at the south bridge abutment. The total volume of new fill proposed below the OHWL is 570 cubic yards for the columns and their associated footings and piles, and 644 cubic yards for the south bridge abutment, yielding a grand total of 1,214 cubic yards. This total is comparable to the 1,310 cubic yards of structural and earthen fill which will be removed below the OHWL through removal of the old bridge.

In terms of surface area, the proposed project would result in a total of 720 square feet of fill at the OHWL compared to the approximately 850 square feet of fill at the OHWL to be removed. The project also includes approximately 4,000 cubic yards of temporary gravel fill during construction to create water diversions, access roads, and a sediment basin. All of this temporary fill material will consist of gravel from the gravel bar on-site which will be regraded to restore the pre-existing contours upon completion of the project. Thus, there will be no net increase in fill associated with the project. In fact, the project will slightly decrease the amount of total fill below the OHWL by approximately 96 cubic yards or 130 square feet.

Section 30233 of the Coastal Act provides as follows, in applicable part:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following [eight purposes, including...]

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines....

Coastal Act Section 30233(a) sets forth a three part test for all projects involving the filling of coastal waters and wetlands. These are:

1. that the project is limited to one of the eight stated uses.
2. that feasible mitigation measures have been provided to minimize adverse environmental effects; and
3. that the project has no feasible less environmentally damaging alternative;

With regard to the first test, the proposed project is for an incidental public service purpose. A primary objective of the project is to improve public safety by replacing an existing, structurally deficient bridge that would be vulnerable to collapse in the event of a strong earthquake. The Highway 101 bridge provides access to and along a portion of the coastal zone for residents and visitors. As such, the bridge provides a public service and the proposed project is necessary to ensure that this public service will

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continue to be available. Therefore, the Commission finds that the purpose of the fill is consistent with subsection (5) of Section 30233(a).

With regard to the second test, feasible mitigation measures can be employed to minimize the project's adverse environmental effects. With regard to the impacts of the proposed permanent fill on the habitat values of coastal waters, the project is self-mitigating in the sense that more fill will be taken out of the river with removal of the earthen fill and the larger columns associated with the existing bridge than will be placed in the river with installation of the rock slope protection on the south bridge abutment and the narrower columns of the new bridge. As noted above, the project will result in a net decrease of fill in the river at the OHWL of approximately 96 cubic yards or 130 square feet.

The proposed temporary fill for the access roads, water diversions, and sediment basin, however, could result in short term impacts on fisheries, water quality, and stream habitat. To reduce these impacts on fisheries, the applicant has proposed to maintain a corridor for migrating fish during the anticipated two year construction period by either using culverts or bridged bypass channels for construction access road crossings of the river. To reduce sedimentation impacts the applicant proposes to do any necessary excavation during the low flow period, install coffer dams as needed, and avoid construction activity in flowing streams. To prevent any impacts on river habitat, the applicant proposes to recontour the site to the approximate configuration of the natural channel.

The Department of Fish and Game in its 1601 streambed alteration agreement recommended a number of additional mitigation measures including (a) limiting construction operations in flowing water to the period of June 1 through September 30; (b) stabilizing and maintaining areas of disturbed soils with appropriate erosion control measures to prevent soil erosion; and (c) removing all construction debris from the worksite at the end of the work period.

Therefore, to minimize the adverse environmental impacts and ensure consistency with the second test of Coastal Act Section 30233(a), the Commission attaches Special Condition No. 5, which requires the mitigation measures proposed by the applicant noted above, and the other mitigation measures recommended by the Department of Fish and Game noted above to be implemented.

With regard to the third test of Section 30233(a), it appears that there are no other feasible less environmentally damaging alternatives to the proposed fill. The no-project alternative is unacceptable because the substandard characteristics of the bridge would eventually make the structure seismically unsafe to use. Investigations were made into the feasibility of rehabilitating the existing bridge, but it was determined that the original integrity of the bridge cannot be restored. Widening the southbound bridge to accommodate two-way traffic was determined to be economically infeasible. Finally, building the bridge in another location would not result in less

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environmental damage to the river, as the bridge would need to be at least as long as the proposed bridge, and realigning the highway would cause significant disturbance of the riparian woodlands that are found in the area. Therefore, the Commission finds that the proposed project involves the least environmentally damaging feasible alternative.

4. Protection of Biological Productivity, Water Quality, and Environmentally Sensitive Habitat Areas.

Section 30231 of the Coastal Act provides as follows, in applicable part:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes...shall be maintained and, where feasible, restored...

Section 30107.5 of the Coastal Act defines "environmentally sensitive area" as:

Any area in which plant or animal life or their habitat are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and development.

Section 30240 of the Coastal Act provides as follows, in applicable part:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

(b) 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.

Within the vicinity of the project, there are well-developed stands of woodland riparian habitat. The proposed extension of the access road along the west side of the highway will result in the loss of approximately 0.5 acres of upland riparian vegetation consisting of red alder, black cottonwood, and willow trees, as well as thimbleberry, poison oak and blackberry shrubs.

The damage to the riparian vegetation from extension of the access road is unavoidable, and alternative locations for such a road are not available. Section 30240(a) strictly limits the uses allowable in areas of sensitive habitat, including riparian corridors. For instance, dwellings and other structures and roads can ordinarily be located outside riparian corridors and are therefore not dependent on such resources. However, a river like the Van Duzen forms a unified ecological system with its riparian vegetation in the sense that the riparian vegetation is dependent on the river. To gain access to the riverbank to fish or swim, a person must cross through the riparian corridor. Therefore, facilities such as paths which are designed to allow

ADOPTED FINDINGS - 1-93-05

CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 1

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access to the water are dependent on the resource; without a river and its associated riparian vegetation, there would be no need for a path.

In this instance, the existing dirt access road serves as such a path to allow fishermen and swimmers access to the water, and the lengthened access road proposed as part of the project will serve the same function. The Commission therefore concludes that this project is consistent with the resource-dependent limitation of Section 30240(a).

Section 30240(a) also requires that significant disruption of habitat values shall be avoided when locating project within riparian corridors. In this case, the applicant has minimized the impacts of the access road extension on the riparian habitat by (1) locating it as close as possible to the highway, (2) not raising the elevation of the access road extension which would have required widening the base of the roadway and resulted in the removal of a wider swath of riparian vegetation, (3) decreasing lane width to 10 feet from the customary 12 feet, and (4) eliminating shoulders. The roadway cannot be moved closer to the highway because of the presence of various utility lines between the access road and the highway.

It should be noted that approximately half or more of the 1/2-acre riparian area to be affected is periodically cut by the utility company to maintain its lines. (Such vegetation clearing qualifies under Coastal Act Section 30610 as a form of repair and maintenance that is exempt from coastal development permit requirements.)

To mitigate for the loss of riparian habitat, the applicant proposes to create 0.8-acres of new riparian woodland at an adjacent upland pasture. The applicant has submitted a mitigation planting and monitoring plan (see Exhibit 11) that calls for the planting of red alder, cottonwood, and willow plants. Approximately 500 plants will be planted in clusters equivalent to planting on ten-foot centers. Caltrans will monitor plant survival over a three year period and submit monitoring reports annually to the Commission. The mitigation will be considered successful if at least 74 trees survive, which is twice the number of trees to be removed by extension of the access road. If success is not attained, Caltrans will replant as necessary until the 74 trees have become established.

For several reasons, the Commission finds that the extension of the access road will not result in significant disruption of habitat values in the environmentally sensitive habitat areas. First, the trees affected are located on the fringe of a very large and well established riparian woodland that extends approximately half a mile westward to the Eel River. Second, as previously noted, much of the affected area is periodically cut by utility companies for utility line maintenance. Third, by mitigating for the loss of riparian vegetation at an approximately 2:1 ratio, in a nearby location, the applicant will ensure that the habitat value provided by the area to be disturbed will continue.

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To ensure that the proposed mitigation and monitoring plan is implemented and new habitat values are created, the Commission attaches Special Condition No. 6. This Special Condition requires the applicant to implement the submitted plan. The Commission finds that, as conditioned, the proposed project is consistent with Section 30240(a) as the riparian habitat values of the site will not be significantly disrupted.

The Commission notes that the proposed mitigation site is located just east of Highway 101, immediately adjacent to the coastal zone. While the Commission does not ordinarily approve mitigation outside the coastal zone, the Commission finds that the proposed mitigation site is appropriate in this case for several reasons. First, the mitigation is being provided on-site, in the sense that it is immediately adjacent to the highway being repaired, and is within several hundred feet of the riparian area to be disturbed by the project. Second, the birds and other wildlife using the area to be affected by the riparian removal will be able to utilize the mitigation site because of its close proximity. Third, no closer mitigation site within the coastal zone appears to be available for that purpose.

The two potential alternative mitigation sites include agricultural land to the north of the area to be disturbed and open areas within the other riparian habitat closer to the river. The agricultural land north of the area of disturbance is part of a sizable grazing operation. Use of portions of this agricultural land could adversely affect coastal agriculture. Although the proposed mitigation site is also used for grazing, its overall value for coastal agriculture is severely limited by its small size (about an acre) and its isolation from other agricultural lands. Use of the open areas within the other riparian woodlands closer to the river would impair their current use as a staging area for river and fishing access. Therefore, the Commission finds that use of the proposed area for mitigation is appropriate in this case.

5. Public Access.

Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. In applying Section 30211 and 30212, the Commission is also limited by the need to show that any denial of a permit application based on this section, or any decision to grant a permit subject to special conditions requiring public access is necessary to avoid or offset a project's adverse impact on existing or potential access.

As noted previously, the privately owned existing dirt road along the west side of the highway just north of the bridge is used extensively by the public for access to the river and fishing, as it connects to cleared areas and a network of trails along the north bank of the river. The proposed project will eliminate this access road's current connection to the northbound lanes

10919

of Highway 101. Replacement of this access road's intersection with Highway 101 as proposed by the applicant will ensure that public access to the river will be maintained. Furthermore, Caltrans indicates that the existing access road entry will not be closed until the new entry and road extension are completed.

The proposed construction staging area for the approximately two year project will be located within the major clearing west of the highway that is also used by fishermen and other users of the river. Thus, the project could have a temporary impact on access if use of this area were completely blocked. However, the applicant indicates that Caltrans Standard Specifications state that all public traffic shall be permitted to pass through the work area with as little inconvenience and delay as possible.

In sum, the Commission finds that the project as proposed by the applicant will not adversely affect public access. To ensure that the project is carried out in this manner, the Commission attaches Special Condition No. 7 which requires (a) that the entrance of the existing access road nearest the bridge not be closed until the new entry and road extension are completed, and (b) that the applicant allow public access users to pass through the construction staging area during the construction of the project. As conditioned, the Commission finds that the proposed project is consistent with the public access policies of the Coastal Act.

6. Public Trust.

The project site is located in an area that has been tentatively mapped by the State Lands Commission as being subject to the public trust. The Commission therefore attaches Special Condition No. 1, which requires the applicant to submit to the Executive Director a final written determination that all necessary approvals have been obtained from the State Lands Commission prior to issuance of the coastal development permit. The Commission attaches this condition to ensure that the applicant has obtained all the necessary property rights to carry out the project.

7. U.S. Army Corps of Engineers Review.

The project requires review and approval by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches Special Condition No. 2 which requires the permittee to submit to the Executive Director evidence of U.S. Army Corps of Engineers approval of the project prior to the commencement of work.

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8. Humboldt County LCP.

The Humboldt County LCP allows for the construction of bridges in wetland areas provided that the least environmentally damaging alternative has been selected and the impacts of the project have been appropriately mitigated. As discussed above, the submitted project has been designed as the least environmentally damaging alternative, and as conditioned by the Commission, includes mitigation for the adverse impacts of the fill in a manner consistent with the Humboldt County LCP.

9. California Environmental Quality Act (CEQA).

The project, as conditioned, will not have a significant adverse effect on the environment, within the meaning of CEQA. As discussed above, the project has been mitigated to ensure consistency with the Coastal Act to maintain and restore the biological productivity and water quality of coastal streams and wetlands and to avoid the significant disruption of environmentally sensitive, riparian habitat values. The applicant is the lead agency for the project under CEQA. Caltrans adopted a Final Environmental Impact Report for the project in 1991.

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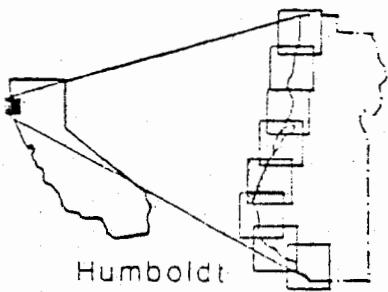
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ATTACHMENT A

Standard Conditions

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

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Humboldt

EXHIBIT NO. 1

APPLICATION NO.

1-93-05

Regional Location



California Coastal Commission

PROJECT
SITE

Fossil Cove

Capitown

Ferndale

Laleta

Fortuna

Altam



California Coastal Commission

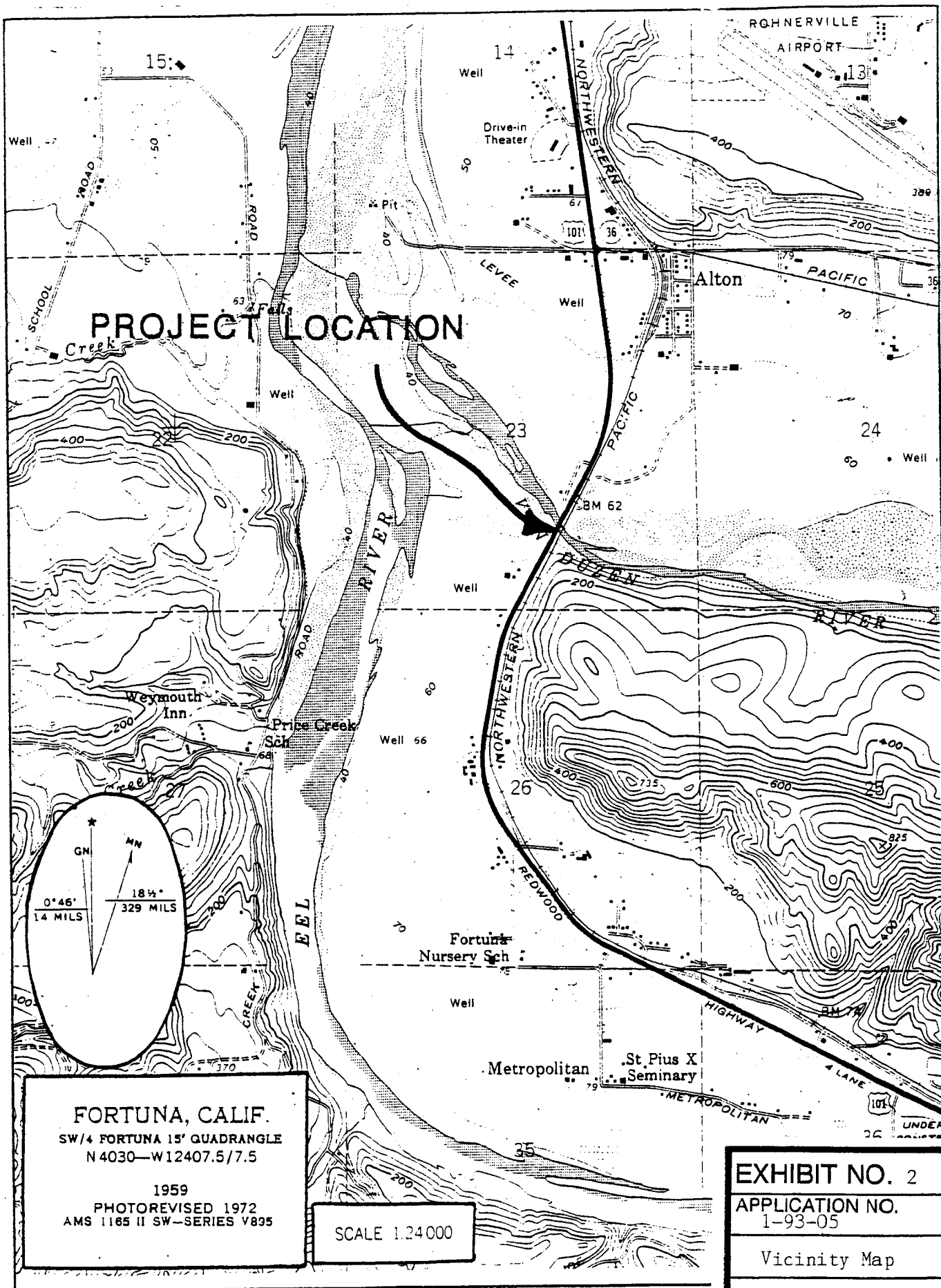
LOCATION MAP



County of Humboldt

14919

Sheet 5 of 8



15419

Application By:
Caltrans, District 1
P.O. Box 3700
Eureka, CA 95502-3700

1-Hum-101-56.3/57.4
01201 173201
Replace Van Duzen
River Bridge #4-17R

Southbound

Northbound

Mitigation Site

North Coast Railroad

Proposed Public Access Road

Match here with aerial photograph of the project.

Public Access

EXHIBIT NO. 3

APPLICATION NO.
1-93-05

North Portion of
Project Site

California Coastal Commission

Public Access

N

Van Duzen River

North Coast Railroad Bridge

Southbound Bridge #4-17L
Update Bridge Rail

Northbound Bridge #4-17R
Demolish and Replace

Area below OHWE of 44'

East House

EXHIBIT NO. 4

APPLICATION NO.

1-93-05

South Portion of

Project Site

California Coastal Commission

Application By: 170919
Caltrans, District 1
P.O. Box 3700
Eureka, CA 95502-3700

1-Hum-101-56.3/57.4
01201 173201
Replace Van Duzen
River Bridge #4-17R

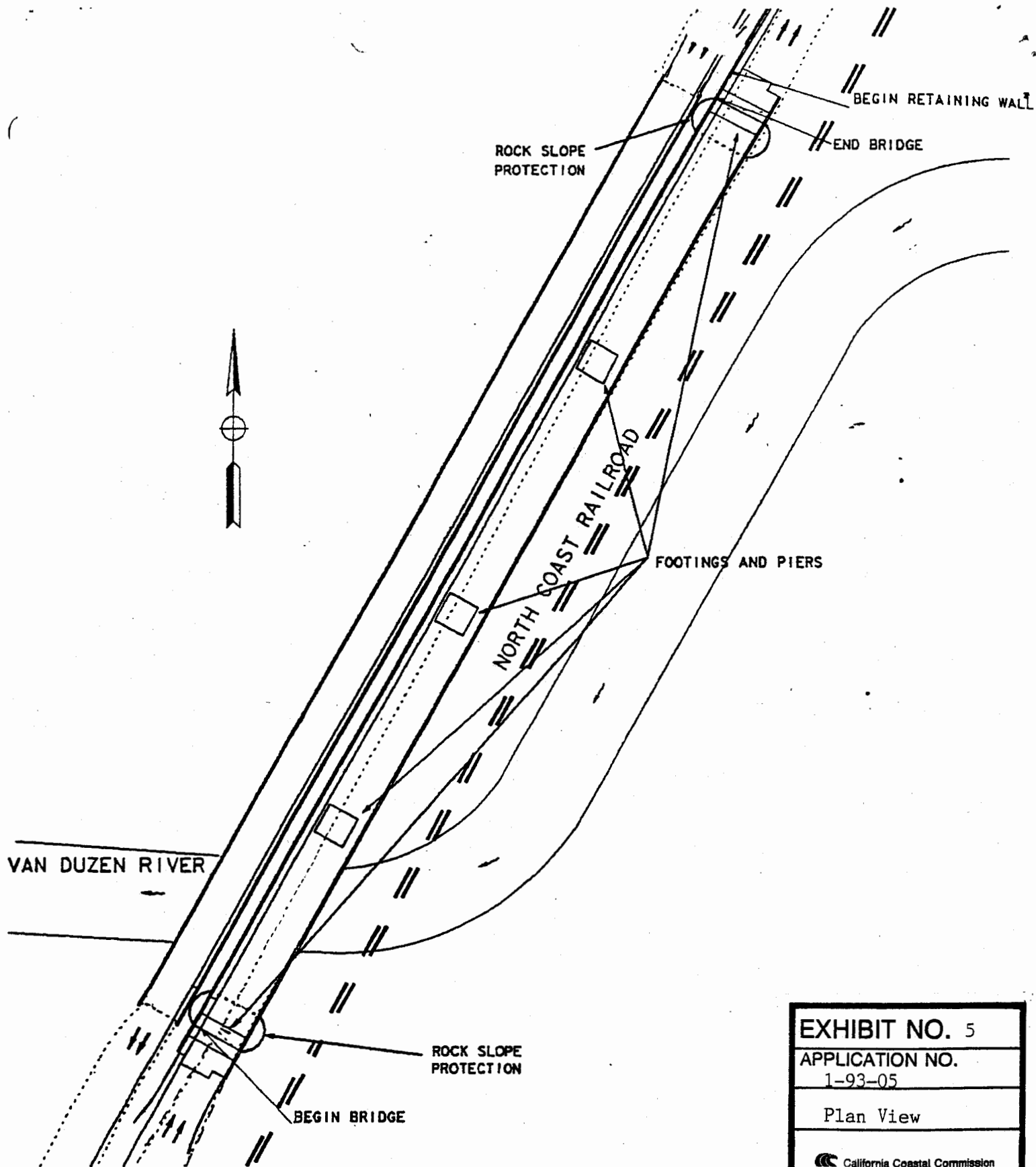
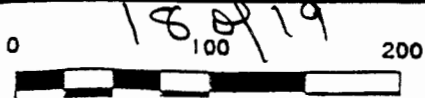

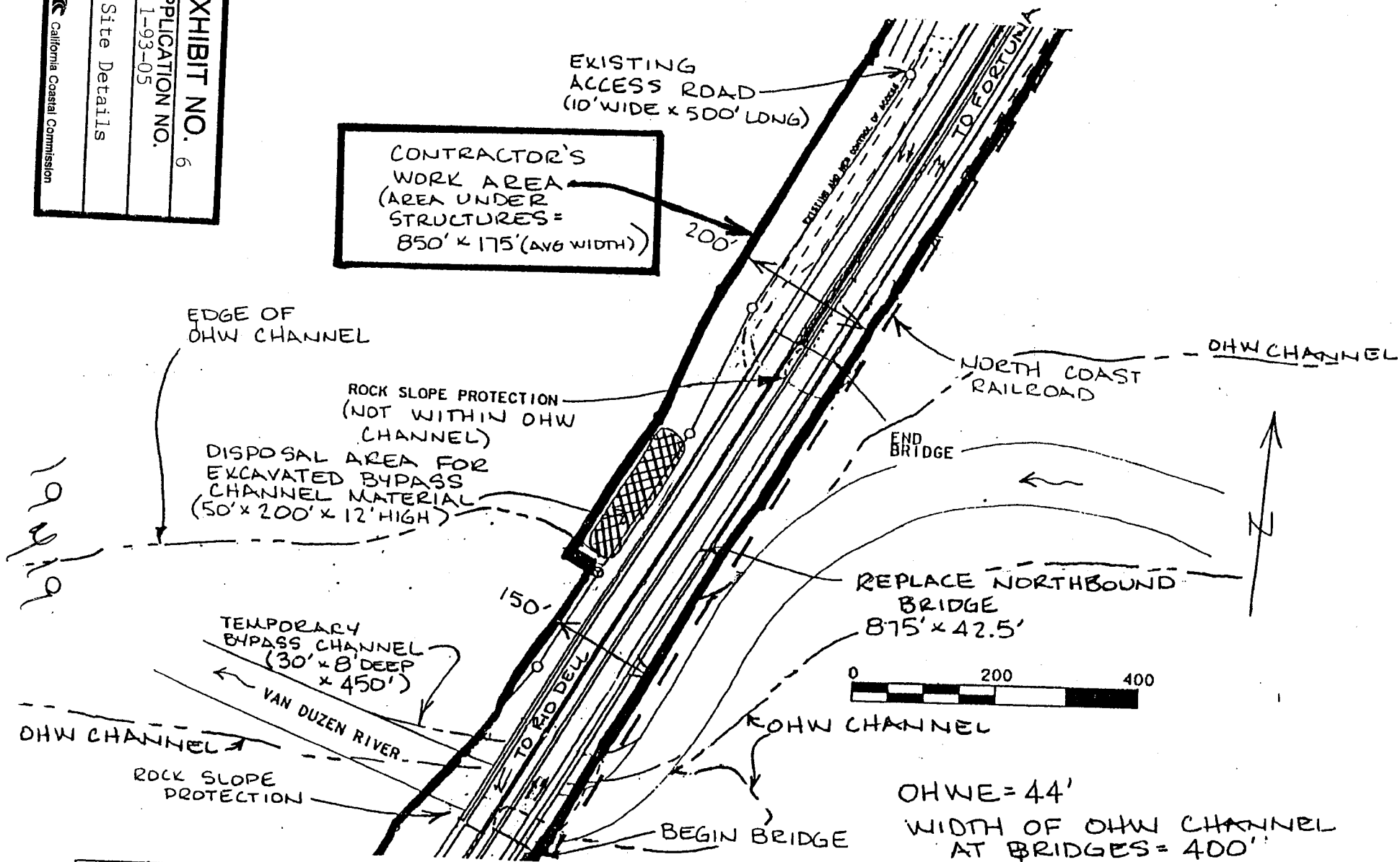


EXHIBIT NO. 5
APPLICATION NO. 1-93-05
Plan View
California Coastal Commission

PURPOSE: Replace Northbound Bridge #4-17R DATUM: NGVD ADJACENT PROPERTY OWNERS: <ol style="list-style-type: none"> 1. Moscoe, 507 Sunset Dr. Paradise CA 95969 2. Dweilley, 56825 US101, Fortuna CA 95540 	PLAN VIEW PROJECT CONDITIONS CalTrans, District I 1856 Union Street Eureka, CA 95501	VAN DUZEN RIVER BRIDGE REPLACEMENT IN: Van Duzen River AT: Van Duzen River Bridge #4-17R COUNTY OF: Humboldt, CA APPLICATION BY: CalTrans
--	--	--



 California Coastal Commission	EXHIBIT NO. 6
	APPLICATION NO. 1-93-05
	Site Details



Purpose: Replace Northbound Bridge #4-17R

Datum: NGVD

Adjacent Property Owners:

1. Massae, 507 Sunset Dr, Paradise CA 95969

2. Dwell, 56625 US101, Fortuna CA 95540

PLAN VIEW

Caltrans, District 1

1656 Union St.

Eureka, CA 95501

VAN DUZEN RIVER BRIDGE

In: Van Duzen River

At: Van Duzen River Bridge #4-17R

County of: Humboldt, CA

Application By: Caltrans

Sheet : 2 of 6

Date: 11-15-92

SOUTHBOUND VAN DUZEN
RIVER BRIDGE REPLACEMENT
EA 314401



COPY OF
NMFS
BIOLOGICAL OPINION
03-11-2002

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

MAR 11 2002

151422SWR01AR6195:MK

Mr. Michael G. Ritchie, Division Administrator
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
Sacramento, California 90802-4213

EXHIBIT NO. 4

APPLICATION NO.

1-04-014

CALTRANS

NMFS BIOLOGICAL
OPINION (1 of 42)

Dear Mr. Ritchie:

This document transmits the National Marine Fisheries Service's (NMFS) biological opinion (Opinion) regarding the Highway 101 Van Duzen River Bridge Replacement Project (HDA-CA, 01-HUM-101-56.3/57.4) and its effects on listed Pacific salmonids in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). This Opinion (Enclosure 1) is primarily based on NMFS' review of your March 12, 2001, letter and Biological Assessment (BA). As required by the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended (16 U.S.C. 1801 et seq.), NMFS' Essential Fish Habitat (EFH) Conservation Recommendations for Pacific coast salmon that may be affected by the proposed action are also enclosed (Enclosure 2).

Endangered Species Act Consultation

NMFS has determined that the Highway 101 Van Duzen River Bridge Replacement Project may affect the following listed species and designated critical habitat.

Chinook Salmon (*Oncorhynchus tshawytscha*)

California Coastal Evolutionarily Significant Unit (ESU); threatened, 16 September 1999, 64 FR 50394; critical habitat, 16 February 2000, 65 FR 7764

Coho Salmon (*Oncorhynchus kisutch*)

Southern Oregon/Northern California Coast ESU; threatened, 6 May 1997, 62 FR 24588; critical habitat, 5 May 1999, 64 FR 24049

Steelhead (*Oncorhynchus mykiss*)

Northern California ESU; threatened, 7 June 2000, 65 FR 36074

The description of the project and the analysis of effects to listed Pacific salmonids are based on the present configuration and geometry of the Van Duzen River channel at the project site. While the channel may shift before the onset of construction, we believe that any likely channel



configuration will not result in more serious adverse effects due to the project than the present configuration. For example, we analyze adverse effects due to removal of pier 4, which presently requires work in the low flow channel. Should the low flow channel shift away from pier 4, it will most likely either be located away from any piers, or will capture pier 2 or 3, resulting in either fewer or essentially equal effects. In the unlikely event that the low flow channel splits and captures more than one pier, or requires that more than one temporary crossing be constructed, then a new analysis of effects will be required.

Based on the condition of the action area, in combination with the minimization of adverse effects to listed Pacific salmonids, NMFS concludes that the Highway 101 Van Duzen River Bridge Replacement Project is not likely to jeopardize the continued existence of listed Pacific salmonids or result in the destruction or adverse modification of designated critical habitat.

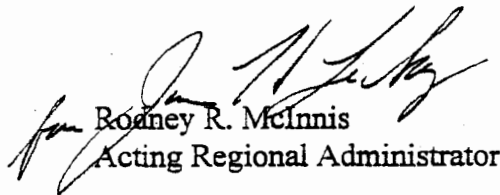
This concludes consultation for the proposed action pursuant to section 7(a)(2) of the ESA. Consultation for the Highway 101 Van Duzen River Bridge Replacement Project must be reinitiated if: (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals that the project may affect listed or proposed species and their critical habitats in a manner or to an extent not previously considered; (3) the project authorized is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or (4) a new species is listed, or critical habitat is designated that is not considered in this Opinion and may be affected by the Highway 101 Van Duzen River Bridge Replacement Project (50 CFR §402.16).

Essential Fish Habitat Consultation

The NMFS has chosen to include the Reasonable and Prudent Measures and their respective Terms and Conditions listed in the Incidental Take Statement of the Opinion as our EFH Conservation Recommendations for chinook and coho salmon. The Federal Highway Administration (FHWA) has a statutory requirement under section 305(b)(4)(B) of the MSFCMA to submit a detailed response in writing to NMFS that includes a description of measures proposed for avoiding, mitigating, or offsetting the impact of the activity on EFH, as required by section 305(b)(4)(B) of the MSFCMA and 50 CFR 600.920(j) within 30 days. If unable to complete a final response within 30 days of final approval, FHWA should provide NMFS an interim written response within 30 days. FHWA or Caltrans should then provide a detailed response.

If you have any questions concerning the Opinion, please contact Mr. Mike Kelly at (707) 825-5178.

Sincerely,


Rodney R. McInnis
Acting Regional Administrator

cc: Deborah Harmon ✓
California Department of Transportation
P.O. Box 3700
Eureka, CA 95502-6463

2 of 42

Endangered Species Act
Section 7 Consultation

BIOLOGICAL OPINION

Federal Highway Administration Funding of the
Highway 101 Van Duzen River Bridge Replacement Project

Action Agency:
Federal Highway Administration
California Division
Sacramento, CA

Consultation Conducted by:
National Marine Fisheries Service
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213

MAR 11 2002

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CONSULTATION HISTORY

On January 25, 2001, NMFS received a biological assessment (BA) and cover letter from FHWA. The cover letter asked for concurrence that the Proposed Action "is not likely to adversely affect the listed fish species or their critical habitat." However, the BA (FHWA 2001) described adverse effects to listed Pacific salmonids. The NMFS responded with a letter dated March 5, 2001, asking for clarification on FHWA's effect determination. FHWA responded in a letter dated March 12, 2001, clarifying that adverse effects were likely, and requesting initiation of formal consultation under section 7 of the ESA.

The objective of this biological opinion (Opinion) is to determine whether the effects of the Proposed Action, taken together with cumulative effects and the effects of the environmental baseline, are likely to jeopardize the continued existence of the Northern California (NC) steelhead (*Oncorhynchus mykiss*) Evolutionarily Significant Unit¹ (ESU) listed as threatened on June 7, 2000 (65 FR 36074); the Southern Oregon/Northern California Coastal (SONCC) coho salmon (*O. kisutch*) listed as threatened on May 6, 1997 (62 FR 24588); or the California Coastal (CC) ESU chinook salmon (*O. tshawytscha*) listed as threatened on September 16, 1999 (64 FR 50394).

The Opinion also evaluates effects of the Proposed Action on Pacific salmonid habitat including critical habitat for SONCC coho designated on May 5, 1999 (64 FR 24049), and critical habitat for CC chinook salmon designated on February 16, 2000 (65 FR 7764), and includes conclusions regarding destruction or adverse modification of these designated critical habitats. Critical habitat has not been designated for NC steelhead.

DESCRIPTION OF THE PROPOSED ACTION

The Federal Highway Administration (FHWA) proposes to provide funds to the California Department of Transportation (Caltrans) for the Highway 101 Van Duzen River Bridge Replacement Project in Humboldt County, California from Post Mile 56.3 to 57.4 (Proposed Action). FHWA funds are available through the Local Assistance Highway/Bridge Road Rehabilitation funding source under the authority of the Transportation Equity Act for the 21st Century.

The purpose of the Proposed Action is to replace the existing south bound Highway 101 bridge over the Van Duzen River in Humboldt County. The existing bridge requires replacement because it has required extensive repairs in recent years, scouring is occurring at the piers, and it is considered to be at the end of its useful life.

¹ For purposes of conservation under the Endangered Species Act, an Evolutionarily Significant Unit (ESU) is a distinct population segment that is substantially reproductively isolated from other conspecific population units and represents an important component in the evolutionary legacy of the species (Waples 1991).

The description of the project and the analysis of effects to listed Pacific salmonids are based on the present configuration and geometry of the Van Duzen River channel at the project site. While the channel may shift before the onset of construction, we believe that any likely channel configuration will not result in more serious adverse effects due to the project than the present configuration. For example, we analyze adverse effects due to removal of pier 4, which is presently in the low flow channel. Should the low flow channel shift away from pier 4, it will most likely either be located away from any piers, or will capture pier 2 or 3, resulting in either fewer or essentially equal effects. In the unlikely event that the low flow channel splits and captures more than one pier, or requires that more than one temporary crossing be constructed, a new analysis of effects will be required.

The following description of the Proposed Action is based on a description provided in the Biological Assessment prepared for this project (Caltrans 2001).

Caltrans proposes to replace the southbound Van Duzen River Bridge (Bridge No. 04-0017L), on Highway 101 in Humboldt County, California from post miles 56.3 to 57.4, south of Fortuna. The existing bridge is a 246.84-meter (809-foot) concrete girder on steel beam bridge constructed in 1950. It is 7.3 meters (24 feet) wide, and consists of a 6.1-meter (20-foot) traveled way and two .6-meter (2-foot) wide maintenance walkways. The support of the bridge consists of four piers, five bents and two abutments. The bridge currently has a 102-millimeter (4-inch) PG&E gas line and four Pacific Bell telephone lines located on the west side of the structure. The structure in recent years has required extensive repairs and is considered to be at the end of its useful life.

Replacement of the northbound bridge (Bridge No. 04-0017R), widening the southbound bridge, and replacement of the railing was approved in January of 1992. In May of 1992, the focus shifted from the widening of the southbound bridge to a replacement project after foundation investigations revealed that the Van Duzen River channel had degraded, and scour was occurring at the piers. Due to the additional work required for the southbound bridge, it was proposed to initiate a separate project to replace the southbound bridge within five years. The bridge rail replacement and minimal seismic upgrade work for the southbound bridge was done during the replacement of the northbound bridge beginning in 1992. The northbound bridge project was completed before local ESUs of Pacific salmonids were proposed for ESA listing.

The scope of the Proposed Action includes removal of existing bridge piers and abutments, and construction of new piers, abutments and bridge superstructure. Other work includes construction of sedimentation basins, cofferdams, falsework and placement of rock slope protection at abutments.

Specific Project Components

Construction will utilize Best Management Practices to control silt and erosion of exposed soils. A copy of Caltrans' 1997 Storm Water Quality Handbook will be provided to the contractor for use in the preparation of a Storm Water Pollution Prevention Plan. Construction disturbance will be restricted to the minimum necessary for completion of the project. Construction within the

river is to be scheduled between June 15 and October 15 to minimize impacts to listed Pacific salmonids and to avoid impacts to adult salmonids. Water will be diverted using clean, washed, spawning-sized gravel to block the flow and gradually displace the water away from the work area. No reaches of the river or pools will be de-watered or enclosed in a manner that is likely to result in stranding or entrapping fish. Sheet pile coffer dams will be needed to maintain a de-watered work site and to provide shoring. Sheet pile will be placed into the dry work area after all water has been diverted to avoid entrapping fish. Upon completion, all material used for diversion will be leveled to conform to natural topography or removed from the riverbed. Pumping is required to maintain a de-watered work site. Water pumped from the work site shall be allowed to flow into a settling basin then percolate into the ground. A spill plan will be developed for potentially hazardous materials including concrete. No concrete washings or water from concrete will be allowed to enter the river. No wet concrete will contact river water. No equipment staging or refueling will take place within the river channel.

The project will take two construction seasons beginning in the spring of 2003. All information relates to work to be completed during each of the two construction seasons (5/2003 to 1/2004) & (1/2004 to 9/2004), as well as pre-project geotechnical test drilling to be completed between 5/2002 and 8/2002.

Geotechnical test drilling: Caltrans proposes to do geotechnical drilling at five locations beneath the southbound Van Duzen bridge to evaluate soil and bedrock conditions for design purposes. Some locations may require drilling in the waters of the Van Duzen River. First, using a circular drill bit, five five-inch diameter holes will be drilled through the existing southbound bridge decking along the bridge's centerline and parallel with the northbound bridge piers. Several of the five-inch diameter concrete cylinders of bridge decking created by this drilling may fall into the active river channel beneath the bridge. They will be retrieved if they land on the dry river bed or in shallow water, otherwise they will be left in the water. No additional material will enter the river channel. Next, five-inch diameter casings (PW casing) will be driven through the bottom of the channel to a depth that allows sealing. Then a four-inch inner casing will be inserted to a greater depth to obtain core samples. Initial drilling through gravels will be accomplished using clean water as a lubricant. Once bedrock or consolidated material is reached, drilling mud (bentonite clay) will be used to lubricate the bit inside the casing. No other additives will be used in the bentonite drilling mud when drilling within the active river channel, including the dry gravel beds and bars away from flowing water. The drilling mud will be contained on the deck in a metal container. After drilling is completed and the four-inch inner casing and core samples are removed, the five-inch outer casings will be flushed out until the water runs clear. Then the outer casings will be removed from the river channel. The spoils will be contained at all times and transported to the nearest Caltrans maintenance station for proper disposal. As an extra precaution, straw wattles will be placed on the bridge deck insuring that no material from the drilling process will enter the river water.

Caltrans will avoid drilling in water if possible, either by waiting until the channel is dry, or choosing locations out of the water. Caltrans will contact NMFS in advance of any drilling activities in the water so that a NMFS biologist can observe the methods and management practices for future reference.

The total anticipated time for drilling one test bore may be up to two weeks due to the depth of drilling. It will take eight to ten weeks to complete the project. This drilling is scheduled to begin May 15, 2002; however, drilling in flowing water will not begin until after June 15, 2002.

New bridge: The proposed bridge will be a cast-in-place concrete box girder bridge, 12.95 meters (42 feet) wide and 246.88 meters (809 feet) long. The centerline of the proposed bridge will match the centerline of the existing bridge and the elevation will be raised a maximum of 2.44 meters (8 feet) to match the northbound structure. The proposed bridge will have three piers. Each pier will have a six-foot thick, 7.3-square meter (78-square foot) spread footing with 36 sheet piles. The abutments will also be constructed on spread footings (approximately 5.5 meters by 14.6 meters) with 50 sheet piles for each abutment.

Access: Access to the work site is proposed via an existing road on the northwest side of the existing southbound bridge. Therefore, no riparian vegetation will be disturbed for access, or by any other construction activity, although some vegetation near the existing abutments will be disturbed in order to place additional fill that is needed to raise the bridge. Equipment will cross the low flow channel on a temporary crossing constructed of a flat-car bridge that will fully span the low flow channel. Construction of the crossing may require that a piece of heavy equipment cross the channel in the water once to install and once to remove. Footings for the bridge will either be pre-cast concrete, log stringers, or some other solid material; and approaches will be made from gravel collected from the adjacent bar or imported. The footings and approaches will not contact the water. The crossing will be removed at the end of the construction season, prior to increased fall flows. Equipment and material will be moved along temporary roads graded on the gravel bar to the work site. The gravel bar will be regraded as close as possible to its original configuration at the close of each construction season.

De-watering: Diversion of the Van Duzen River at the construction site is required to remove existing piers, construct the new piers and to place the false work. A temporary dike constructed of clean, washed, spawning-sized gravel is proposed to be used to divert the flow and maintain dry conditions around pier 4. After all water is diverted to avoid entrapping fish, sheet pile coffer dams will be placed into the dry work area. Subsurface flow may percolate into the coffer dam 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 de-watering. 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 a large gravel bar downstream, west of the southbound structure and on the gravel bar within the Caltrans right-of-way. After construction, any residual silt or fine materials within the settling basin will be removed to a disposal site above the high water level.

Depending on changes to channel geometry, pools may form around piers 2 and/or 3 before construction is due to begin. Caltrans will remove any listed Pacific salmonids before construction activities begin in an isolated pool.

Construction year #1: In the first year the old bridge will be dismantled and removed. No explosives will be used to dismantle the existing bridge and no portion of the bridge will drop into the river. The first step in dismantling the bridge will be removing the traveled way. The long girder sections of the superstructure will be removed by crane.

Next, the existing columns will be removed to accommodate the construction of the new bridge columns. The footings of bents 2, 5 and 7 will be removed to below grade and below river degradation to an elevation determined by Structures Hydraulics staff. The footings of bents 3, 4, and 6 will be removed because they would be in conflict with the placement of the new piers. The structural engineer will determine which technique to use to remove the bents and footings in conflict with the new bridge.

In this season, construction of the new bridge abutments and new piers will also take place. To construct the footings of the new columns, cofferdams will be required in order to create a dry work area. First, the sheet piles will be hydraulically driven to the required depth and then the footings will be formed. Next, the columns will be erected.

Construction year #2: In the second year, the superstructure will be built. To build the roadway the river will once again need to be diverted, and the false work constructed and moved into place.

All dikes, berms, construction material, debris, temporary roads, and the settling basin will be removed and the contours of the gravel bar will be restored to natural elevations.

Action Area

An action area is defined as: "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR § 402.02). The action area for this consultation is within Humboldt County, California and includes the area of the Van Duzen River immediately under the bridge on Highway 101, and the surrounding area in which construction would take place, equipment would operate, and disturbed sediment may disperse (including the potentially sediment-affected area downstream of the confluence with the Eel River, which is approximately 1/4 mile downstream of the 101 bridge, and on to the estuary, which is approximately 10 miles downstream). The legal description of the area within which the center of the Proposed Action occurs is Section 23, Township 02 North, Range 01 West.

STATUS OF THE SPECIES/CRITICAL HABITAT

The following federally listed species and designated critical habitat may be adversely affected by the Proposed Action:

Chinook Salmon (*Oncorhynchus tshawytscha*)

California Coastal ESU; threatened, 16 September 1999, 64 FR 50394; critical habitat, 16 February 2000, 65 FR 7764

Coho Salmon (*Oncorhynchus kisutch*)

Southern Oregon/Northern California Coast ESU; threatened, 6 May 1997, 62 FR 24588; critical habitat, 5 May 1999, 64 FR 24049

Steelhead (*Oncorhynchus mykiss*)

Northern California ESU; threatened, 7 June 2000, 65 FR 36074

A description of the species and available historical and most recent published abundance information for listed Pacific salmonids, as well as life history and biological requirements, are summarized in Status Review of Chinook Salmon from Washington, Idaho, Oregon, and California (Meyers et al. 1998), Status Review of Coho Salmon from Washington, Idaho, Oregon, and California (Weitkamp et al. 1995), and Status Review of West Coast steelhead from Washington, Idaho, Oregon, and California (Busby et al. 1996). Detailed status information on the listed species and their habitat is contained in the final rules for each particular species and habitat, published in the Federal Register. The following discusses the status under the ESA, general life history, population status, and designated critical habitat for each of the species.

Southern Oregon/Northern California Coast coho salmon

Status Under the ESA

The SONCC coho salmon ESU was proposed for listing as threatened on July 25, 1995 (60 FR 38011). On May 6, 1997, NMFS listed the SONCC coho salmon ESU as threatened (62 FR 24588). The SONCC coho salmon ESU ranges from Cape Blanco in Oregon to Punta Gorda in Northern California and includes the Klamath River and Trinity River which historically supported abundant coho salmon runs.

General Life History

In contrast to the life history patterns of other Pacific salmonids, coho salmon generally exhibit a relatively simple three-year life cycle. Most coho salmon enter rivers between September and February and spawn from November to January (Hassler 1987), and occasionally into February and March (Weitkamp et al. 1995). Coho salmon river entry timing is influenced by many factors, one of which appears to be river flow, in which they enter rivers on all but peak flood

flows and migrate upstream primarily in daylight. In addition, many small California stream systems have their mouths blocked by sandbars for most of the year except winter. In these systems, coho salmon and other Pacific salmonid species are unable to enter the rivers until sufficiently strong freshets open passages through the bars (Weitkamp *et al.* 1995).

Preferred water temperatures during the spawning migration range from 7.2° to 15.6°C (Bell 1991). Spawning is concentrated in riffles or in gravel deposits at the downstream end of pools with suitable water depth and velocity. Spawning depth range from 4 to 35 cm and velocities range from 25 to 91 cubic meters per second. The preferred range of water temperature during spawning is from 4.4° to 9.4°C (Reiser and Bjornn 1979; Bell 1991). Spawning substrate size ranges from 1.3 to 10.2 cm with 12% fines (Reiser and Bjornn 1979). After spawning, the female guards the nest for a short time, but both parents die soon after spawning (Scott and Crossman 1973).

Coho salmon eggs incubate for approximately 35 to 50 days, with incubation time varying inversely with temperature. Preferred temperatures for incubation range from 4.4° to 13.3°C (Reiser and Bjornn 1979; Bell 1991). Alevins remain in the gravel for two to three weeks after hatching (Hassler 1987) and newly emerged fry have been observed from March to July. Following emergence, fry move into shallow areas near the stream banks. As coho salmon fry grow, they disperse upstream and downstream and establish and defend territories (Hassler 1987).

Juvenile rearing usually occurs in tributary streams with a gradient of 3% or less, although they may move up to streams of 4% or 5% gradient. Juveniles have been found in streams as small as one to two meters wide. At a length of 38-45 mm, the fry may migrate upstream a considerable distance to reach lakes or other rearing areas (Godfrey 1965; Nickelson *et al.* 1992). During the summer, coho salmon fry prefer pools and riffles featuring adequate cover such as large woody debris, undercut banks, and overhanging vegetation with optimal water temperatures ranging from 12° to 14°C and the upper lethal temperature equal to 25.8°C (Reiser and Bjornn 1979). Juvenile coho salmon prefer to over-winter in large mainstem pools, backwater areas and secondary pools with large woody debris, and undercut bank areas (Hassler 1987; Heifetz *et al.* 1986). Juveniles primarily prey on aquatic and terrestrial insects (Sandercock 1991). Johnson (1970) indicated that coho salmon juveniles fed on various life stages of aquatic insects such as dipterans, ephemeropterans, plecopterans, and other insects, as well as crustaceans and fishes. Coho salmon rear in fresh water for up to 15 months, then migrate to the sea as smolts between March and June (Weitkamp *et al.* 1995).

Little is known about residence time or habitat use in estuaries during seaward migration, although it is usually assumed that coho salmon spend only a short time in the estuary before entering the ocean (Nickelson *et al.* 1992). While living in the ocean, coho salmon remain closer to their river of origin than do chinook salmon (Weitkamp *et al.* 1995). Nevertheless, coho salmon have been captured several hundred to several thousand kilometers away from their natal stream (Hassler 1987). After about 12 months at sea, coho salmon gradually migrate south and along the coast, but some appear to follow a counter-clockwise circuit in the Gulf of Alaska (Sandercock 1991). Coho salmon typically spend two growing seasons in the ocean before

returning to their natal streams to spawn as three year-olds. Some precocious males, called "jacks," return to spawn after only six months at sea.

Population Status

Available historical and most recent published coho salmon abundance information are summarized in NMFS coast-wide status review (Weitkamp *et al.* 1995). The following are some excerpts from this document.

Gold Ray Dam adult coho passage counts provide a long-term view of coho salmon abundance in the upper Rogue River. During the 1940s, counts averaged approximately 2,000 adult coho salmon per year. Between the late 1960s and early 1970s, adult counts averaged fewer than 200. During the late 1970s, dam counts increased, corresponding with returning coho salmon produced at Cole Rivers Hatchery. Coho salmon run size estimates derived from seine surveys at Huntley Park near the mouth of the Rogue River have ranged from ca. 450 to 19,200 naturally-produced adults between 1979 and 1991. In Oregon south of Cape Blanco, Nehlsen *et al.* (1991) considered all but one coho salmon population to be at "high risk of extinction." South of Cape Blanco, Nickelson *et al.* (1992) rated all Oregon coho salmon populations as "depressed."

Brown and Moyle (1991) estimated that naturally-spawned adult coho salmon returning to California streams were less than one percent of their abundance at mid-century, and indigenous, wild coho salmon populations in California did not exceed 100 to 1,300 individuals. Further, they stated that 46% of California streams which historically supported coho salmon populations, and for which recent data were available, no longer supported runs.

No regular spawning escapement estimates exist for natural coho salmon in California streams. California Department of Fish and Game (CDFG 1994) summarized most information for the northern California region of this ESU. They concluded that "coho salmon in California, including hatchery populations, could be less than six percent of their abundance during the 1940's, and have experienced at least a 70 percent decline in the 1960's." Further, they reported that coho salmon populations have been virtually eliminated in many streams, and that adults are observed only every third year in some streams, suggesting that two of three brood cycles may already have been eliminated.

The rivers and tributaries in the California portion of this ESU were estimated to have average recent runs of 7,080 natural spawners and 17,156 hatchery returns, with 4,480 identified as "native" fish occurring in tributaries having little history of supplementation with non-native fish. Combining recent run-size estimates for the California portion of this ESU with Rogue River estimates provides a rough minimum run-size estimate for the entire ESU of about 10,000 natural fish and 20,000 hatchery fish.

California Coastal chinook salmon

Status Under the ESA

The NMFS proposed listing the Southern Oregon and California Coastal (SOCC) chinook salmon ESU as threatened on March 9, 1998 (63 FR 11482). New information gathered led to the splitting of the ESU into two ESUs, the CC chinook salmon and the Southern Oregon and Northern California Coast (SONCC) chinook salmon. On September 16, 1999, NMFS listed the CC chinook salmon ESU as threatened. (64 FR 50394).

The CC chinook salmon ESU includes coastal populations that range from Redwood Creek in Humboldt County, California, to and including the Russian River in Sonoma County, California. This includes Redwood Creek, the Eel River, the Mattole River, and the Russian River which historically supported large numbers of chinook salmon.

General Life History

Of the Pacific salmon, distinct runs of chinook salmon exhibit arguably the most diverse and complex life history strategies. Healey (1986) described 16 age categories for chinook salmon, seven total ages with three possible freshwater ages. Two generalized freshwater life-history types were described by Healey (1991): (1) "stream-type" chinook salmon, which reside in freshwater for a year or more following emergence, and (2) "ocean-type" chinook salmon, which migrate to the ocean within their first year.

Chinook salmon mature between 2 and 6+ years of age (Myers *et al.* 1998). Freshwater entry and spawning timing are generally thought to be related to local water temperature and flow regimes (Miller and Brannon 1982). Runs are designated on the basis of adult migration timing; however, distinct runs also differ in the degree of maturation at the time of river entry, thermal regime and flow characteristics of their spawning site, and actual time of spawning (Myers *et al.* 1998). Spring-run chinook salmon tend to enter freshwater as immature fish, migrate far upriver, and finally spawn in the late summer and early autumn. Fall-run chinook salmon enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas on the mainstem or lower tributaries of the rivers, and spawn within a few days or weeks of freshwater entry (Healey 1991).

Spring-run chinook salmon spawn between early-August through early-October, and fall-run chinook salmon spawn between October through November. Spring-run chinook salmon eggs generally incubate between October to January, and fall-run chinook salmon eggs incubate between October and December (Bell 1991). Emergence of spring- and fall-run chinook salmon fry begins in December and continues into mid-April (Leidy and Leidy 1984; Bell 1991).

Preferred water temperatures during chinook salmon spawning migration range from 3.3° to 19.4°C (Bell 1991). Spawning is concentrated in riffles or in gravel deposits at the downstream end of pools with suitable water depth and velocity. Minimum water depth at chinook spawning

areas is 24 cm (Thompson 1972). Suitable water velocities at spawning areas range from 30 to 91 cubic meters per second (Thompson 1972). The preferred range of water temperature during spawning is from 5.6° to 13.9°C (Bell 1986). Spawning substrate size ranges from 1.3 to 10.2 cm with 12% fines (Reiser and Bjornn 1979).

Fry use woody debris, interstitial spaces in cobble substrates, and undercut banks as cover (Everest and Chapman 1972). As the fry grow, habitat preferences change. Juveniles move away from stream margins and begin to use deeper water areas with slightly higher water velocities.

CC chinook salmon exhibit an ocean-type life history, and smolts outmigrate predominantly as sub-yearlings, generally during April through July. Chinook salmon spend between 2 and 5 years in the ocean (Bell 1991; Healey 1991), before returning to freshwater to spawn. Some chinook salmon return from the ocean to spawn one or more years before full-sized adults return, and are referred to as "jacks" (males) and "jills" (females).

Population Status

Rivers within this ESU contain severely reduced populations or their populations have been extirpated (September 16, 1999, 64 FR 50394). Available historical and most recent published chinook salmon abundance information are summarized in NMFS coast-wide status review (Myers *et al.* 1998). The following are some excerpts from this document.

Estimated escapement of this ESU was estimated at 73,000 fish, predominantly in the Eel River (55,500) with smaller populations in; Redwood Creek, Mad River, Mattole River (5,000 each), Russian River (500), and several small streams in Del Norte and Humboldt Counties.

Within this ESU, recent abundance data vary regionally. Dam counts of upstream migrants are available on the South Fork Eel River at Benbow Dam from 1938 to 1975. Counts at Cape Horn Dam, on the upper Eel River are available from the 1940s to the present, but they represent a small, highly variable portion of the run. No total escapement estimates are available for this ESU, although partial counts indicate that escapement in the Eel River [currently] exceeds 4,000.

Data available to assess trends in abundance are limited. Recent trends have been mixed, with predominantly strong negative trends in the Eel River Basin, and mostly upward trends elsewhere. Previous assessments of stocks within this ESU have identified several stocks as being at risk or of concern. Nehlsen *et al.* (1991) identified seven stocks as at high extinction risk and seven stocks as at moderate extinction risk. Higgins *et al.* (1992) provided a more detailed analysis of some of these stocks, and identified nine chinook salmon stocks as at risk or of concern. Four of these stock assessments agreed with Nehlsen *et al.* (1991) designations, while five fall-run chinook salmon stocks were either reassessed from a moderate risk of extinction to stocks of concern (Redwood Creek, Mad River, and Eel River) or were additions to the Nehlsen *et al.* (1991) list as stocks of

special concern (Little and Bear rivers). In addition, two fall-run stocks (Smith and Russian Rivers) that Nehlsen *et al.* (1991) listed as at moderate extinction risk were deleted from the list of stocks at risk by Higgins *et al.* (1992), although the U.S. Fish and Wildlife Service reported that the deletion for the Russian River was due to a finding that the stock was extinct.

Northern California steelhead

Status Under the ESA

On June 7, 2000, NMFS listed the Northern California steelhead ESU as threatened (65 FR 36074). The NC steelhead ESU occupies rivers and basins from Redwood Creek in Humboldt County, California, to the Gualala River in Mendocino County, California, inclusive.

General Life History

Biologically, steelhead can be divided into two basic run-types, based on the state of sexual maturity at the time of river entry and duration of spawning migration (Burgner *et al.* 1992). The stream-maturing type, or summer steelhead, enters fresh water in a sexually immature condition and requires several months in freshwater to mature and spawn. The ocean-maturing type, or winter steelhead, enters fresh water with well-developed gonads and spawns shortly after river entry (August 9, 1996, 61 FR 41542; Barnhart 1986). Variations in migration timing exist between populations. Some river basins have both summer and winter steelhead, while others only have one run-type. South of Cape Blanco, Oregon, summer steelhead are known to occur in the Rogue, Smith, Klamath, Trinity, Mad, and Eel rivers, and Redwood Creek (Busby *et al.* 1996).

Summer steelhead enter fresh water between May and October (Busby *et al.* 1996; Nickelson *et al.* 1992). They require cool, deep holding pools during summer and fall, prior to spawning (Nickelson *et al.* 1992). They migrate inland toward spawning areas, overwinter in the larger rivers, resume migration in early spring to natal streams, and then spawn (Meehan and Bjornn 1991; Nickelson *et al.* 1992).

Winter steelhead enter fresh water between November and April (Busby *et al.* 1996; Nickelson *et al.* 1992), migrate to spawning areas, and then spawn in late winter or spring (Nickelson *et al.* 1992). Some adults, however, do not enter some coastal streams until spring, just before spawning (Meehan and Bjornn 1991).

There is a high degree of overlap in spawn timing between populations within an ESU regardless of run type (Busby *et al.* 1996). Difficult field conditions at that time of year and the remoteness of spawning grounds contribute to the relative lack of specific information on steelhead spawning. Unlike salmon, steelhead usually do not die soon after spawning and some, mainly females, may spawn two or three times before dying (Busby *et al.* 1996).

Steelhead spawn in cool, clear streams featuring suitable gravel size, depth, and current velocity. Intermittent streams may be used for spawning (Barnhart 1986; Everest 1973). Eggs generally incubate between February and June (Bell 1991), and typically emerge from the gravel two to three weeks after hatching (Barnhart 1986). After emerging from the gravel, fry usually inhabit shallow water along perennial stream banks. Older fry establish and defend territories.

Juvenile steelhead migrate little during their first summer and occupy a range of habitats featuring moderate to high water velocity and variable depths (Bisson *et al.* 1988). Juvenile steelhead feed on a wide variety of aquatic and terrestrial insects, and emerging fry are sometimes preyed upon by older juveniles. Juveniles live in freshwater from one to four years (usually two years in the California ESU's), then smolt and migrate to the ocean in March and April (Barnhart 1986).

Steelhead can spend between one and four years in the ocean (usually two years in the Pacific southwest). Variations in this pattern do occur (Busby *et al.* 1996). Some steelhead return to fresh water after only two to four months in the ocean and are termed "half-pounders" (Snyder 1925). Half-pounders generally spend the winter in fresh water and then outmigrate again the following spring for several months before returning to fresh water to spawn. Half-pounders occur over a relatively small geographic range in southern Oregon and northern California, and are only reported in the Rogue, Klamath, Mad, and Eel rivers (Snyder 1925; Barnhart 1986; Kesner and Barnhart 1972; and Everest 1973).

Population Status

Available historical and most recent published steelhead abundance are summarized in NMFS west coast steelhead status review (Busby *et al.* 1996). The following are some excerpts from this document.

Prior to 1960, estimates of abundance specific to this ESU were available from dam counts in the upper Eel River (Cape Horn Dam—annual average of 4,400 adult steelhead in the 1930s), the South Fork Eel River (Benbow Dam—annual average of 19,000 adult steelhead in the 1940s), and the Mad River (Sweasey Dam—annual average of 3,800 adult steelhead in the 1940s).

In the mid-1960s, estimates of steelhead spawning populations for many rivers in this ESU totaled 198,000. The only current run-size estimates for this area are counts at Cape Horn Dam on the Eel River where an average of 115 total and 30 wild adults were reported.

Adequate adult escapement information was available to compute trends for seven stocks within this ESU. Of these, five data series exhibit declines and two exhibit increases during the available data series, with a range from 5.8% annual decline to 3.5% annual increase. Three of the declining trends were significantly different from zero. We have little information on the actual contribution of hatchery fish to natural spawning, and little information on present total run sizes for this ESU. However, given the preponderance of

significant negative trends in the available data, there is concern that steelhead populations in this ESU may not be self-sustaining.

Schiewe (1997) summarizes updated and new data on trends in abundance for summer and winter steelhead in the Northern California ESU. The following are some excerpts from this document.

Updated spawner surveys of summer steelhead in Redwood Creek, the Van Duzen River (Eel River Basin), and the Mad River suggest mixed trends in abundance: the Van Duzen fish decreased by 7.1% from 1980-96 and the Mad River summer steelhead have increased by 10.3% over the same time period. The contribution of hatchery fish to these trends in abundance is not known.

New weir counts of winter steelhead in Prairie Creek (Redwood Creek Basin, Humboldt County) show a dramatic increase (over 36%) in abundance during the period 1985-1992. This increase is difficult to interpret because a major highway construction project during this time period resulted in intensive monitoring of salmonids in the basin and Prairie Creek Hatchery was funded to mitigate lost salmonid production. Therefore, it is unclear whether the increase in steelhead reflects increased monitoring effort and mitigation efforts or an actual recovery of Prairie Creek steelhead.

Critical Habitat

Section 4(a)(3)(A) of the ESA requires that, to the maximum extent prudent and determinable, critical habitat be designated concurrently with the determination that a species is threatened or endangered. Essential features of critical habitat may include (1) substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions. Each life history stage may have unique requirements of the preceding essential features. In general, life history stages include the following: (1) Egg incubation, (2) juvenile rearing, (3) juvenile migration, (4) adult migration, and (5) spawning. Activities that may require special management considerations for freshwater and estuarine life stages of listed salmon and steelhead include, but are not limited to: (1) land management, (2) timber harvest, (3) point and non-point water pollution, (4) live stock grazing, (5) habitat restoration, (6) beaver removal, (7) irrigation and domestic water withdrawals and returns, (8) mining, (9) road construction, (10) dam operation and maintenance, (11) diking and streambank stabilization, and (12) dredge and fill activities (May 5, 1999, 64 FR 24049; February 16, 2000, 65 FR 7764).

SONCC Coho Salmon Designated Critical Habitat

The NMFS designated critical habitat for SONCC coho salmon on May 5, 1999 (64 FR 24049) to include all accessible reaches of all rivers (including estuarine areas and tributaries) between the Mattole River in Northern California and Elk River in Oregon, inclusive. Excluded are areas above specific dams identified in Table 6 of the critical habitat Federal Register Notice (May 5,

1999, 64 FR 24049) or above any long standing, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years).

CC Chinook Salmon Designated Critical Habitat

The NMFS designated critical habitat for CC chinook salmon on February 16, 2000 (65 FR 7764) to include all river reaches and estuarine areas accessible to listed chinook salmon from Redwood Creek (Humboldt County, California) to the Russian River (Sonoma County, California), inclusive. Excluded are all tribal lands, areas above specific dams identified in Table 12 of the critical habitat Federal Register Notice (February 16, 2000, 65 FR 7764) or above any long standing, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years).

NC Steelhead Critical Habitat

Critical habitat has not been proposed or designated for this ESU.

Factors Affecting Salmonid ESUs and Designated Critical Habitat

Salmonid populations within California were listed as threatened due to numerous factors including several long-standing, human-induced factors (e.g., habitat degradation, harvest, water diversions, and artificial propagation) that exacerbate the adverse effects of natural environmental variability (e.g., floods, drought, poor ocean conditions). Habitat factors that may have contributed to the decline of these populations include changes in channel morphology, substrate changes, loss of instream roughness and complexity, loss of estuarine habitat, loss of wetlands, loss and/or degradation of riparian areas, declines in water quality, altered stream flows, impediments to fish passage, and elimination of habitat. The major activities identified as responsible for the decline of salmonids include logging, road building, grazing, mining, urbanization, stream channelization, dams, wetland loss, beaver trapping, water withdrawals, and unscreened diversions for irrigation. Water diversions for agriculture, flood control, domestic supply, and hydropower purposes have greatly reduced or eliminated historically accessible habitat. Forestry, agriculture, mining, and urbanization have degraded, simplified, and fragmented habitat. Sedimentation, from extensive and intensive land use activities such as timber harvesting, road building, livestock grazing, and urbanization, degrades the essential features and functions of salmonid habitat.

Salmon require habitat conditions that meet the spawning, rearing, migrating, feeding, and sheltering needs of the species. Parameters that affect the ability of the habitat to provide for these conservation needs include water quality and quantity, habitat access, physical habitat elements, channel condition, hydrology, and upslope conditions. These essential habitat features must be healthy, or in properly functioning condition (PFC), in order for the biological requirements of salmonids to be met.

Water quality factors essential to salmonids include cool temperatures, low turbidity, and pollutant-free water. The ability of salmonids to access various habitats during different life

stages is also essential. Physical structural elements such as the presence of large woody debris (LWD), clean, properly sized substrate, large, deep pools, and the presence of side channels and off-channel habitats are also essential for salmonids. Many of the physical and water quality elements vital to salmonids are provided by the riparian vegetation adjacent to streams. Riparian buffer integrity is therefore also an essential habitat feature. This element includes a mature, well stocked riparian forest to provide large trees for recruitment into the stream, overstory canopy to provide shade, downed wood and an undisturbed humic layer to filter overland sediment flow, snags, and stable banks. Without properly functioning habitat, the ability of the species to persist in an area is significantly compromised.

Tribal harvest is not considered a major factor in the decline of salmonid populations. In contrast, over fishing in non-tribal fisheries is believed to have been a significant factor. Chinook salmon still undergo tribal, commercial, and recreational fisheries throughout their range. Disease and predation are not believed to be major causes in the species decline; however, they may have substantial impacts in local areas. For example, Higgins et al. (1992) and CDFG (1994) reported that Sacramento River pikeminnow have been found in the Eel River basin and are considered to be a major threat to native salmon. Furthermore, California sea lions and Pacific harbor seals, which occur in most estuaries and rivers where salmonid runs occur on the West Coast, are known predators of salmonids. In the final rules listing the affected ESUs, NMFS indicated that it was unlikely that pinniped predation was a significant factor in the decline of these species on the west coast, although ongoing predation levels may be a threat to existing depressed local populations or preclude recovery of these populations (NMFS 1997).

Artificial propagation was also a factor in the decline of salmonid populations. This is due to the genetic impacts on indigenous, naturally-reproducing populations, disease transmission, predation of wild fish, depletion of wild stock to enhance brood stock, and replacement rather than supplementation of wild stocks through competition and the continued annual introduction of hatchery fish.

Existing regulatory mechanisms, including land management plans (e.g., National Forest Land Management Plans, State Forest Practice Rules), Clean Water Act section 404 activities, urban growth management, and harvest and hatchery management all contributed to varying degrees to the decline of salmonid populations due to lack of protective measures, the inadequacy of existing measures to protect salmonids and/or their habitat, or the failure to carry out established protective measures.

Some land and water management policies (e.g., Northwest Forest Plan, PACFISH, CALFED) are probably beneficial to salmon populations, but the confined scope of these management plans limit their effectiveness. Current state forestry rules in California likely do not adequately protect salmon or provide for PFC.

ENVIRONMENTAL BASELINE

The environmental baseline includes the past and present impacts of all Federal, state, tribal, local, and private actions within the action area. The "Environmental Baseline" summarizes the effects of past and present human and natural phenomena on the current status of threatened and endangered species and their habitat in an action area; and establishes the base condition for natural resources, human usage, and species usage in an action area. NMFS' evaluation of the effects of a proposed action is added to this baseline.

The Van Duzen River, a tributary to the Eel River, drains 429 square miles (Halligan 1997a) and enters the Eel River approximately 14 miles from its mouth at the Pacific Ocean. The headwaters of the Van Duzen River watershed originate at over 5,000 feet elevation in the northern California Coast Ranges, and is 50 feet in elevation at its confluence with the Eel River. The geology of the Van Duzen River watershed is comprised of Franciscan, Yager, and tertiary and quaternary sediments. The climate is typical of northern California—with cool wet winters and warm dry summers. Annual precipitation ranges from 50 inches near the confluence with the Eel River to 70 inches at the headwaters. Flows within the Van Duzen River watershed vary considerably, with 75% of the rainfall occurring between November and April. August through September stream flows are less than 1.5% of the total. Bankfull discharge is 17,700 cfs at Bridgeville, with peak discharges of 48,700 cfs in 1964 and 34,600 cfs in 1974. Bankfull discharge is 37,400 cfs at its confluence with the Eel River, with peak discharges of 74,300 cfs in January 1995 and 57,000 cfs in March 1995 (Halligan 1997a). Agriculture (e.g., grazing), timber harvest and gravel extraction are the primary land uses in the watershed.

The Proposed Action is located in an area known as "the Van Duzen River gravel extraction reach," which is located from its confluence with the Eel River upstream to near the town of Carlotta - a distance of approximately five miles. This reach is composed of broad flat aggraded alluvial deposits with a stream gradient of 1% or less. The Highway 101 bridge forms a constriction that results in sediment being deposited immediately upstream (Halligan 1997a). Jensen (2000) described the habitat in the extraction reach as 49% pools (averaging 828 feet long and 96 feet wide), 23% flatwater (averaging 558 feet long and 105 feet wide), and 28% riffles (averaging 512 feet long and 110 feet wide). Sand was the dominant substrate in the pools. Cobble with lesser amounts of sand and gravel dominated the flatwater and riffles.

Jensen (2000) found that fluctuations in daily water temperatures generally ranged from 17°C (62°F) to 21°C (66°F) during the summer of 1999. Maximum sustained water temperatures ranged from 21°C (66°F) to 24°C (75°F). Halligan (1999) documented cool water seeps in subsurface flow from the confluence of the Van Duzen River into the Eel River. These cold water seeps, upwellings, and stratified pools are important thermal refugia, when maximum summer temperatures are stressful, for rearing and holding salmonids.

Anadromous salmonids within the Van Duzen River watershed include chinook salmon, coho salmon, and steelhead. A spawning reconnaissance survey of chinook salmon carried out by the USFWS in 1959 indicated that the watershed had the capability to support a run of 7,000 chinook salmon and reported 1,500 occupied redds. Chinook spawning was documented within the

"gravel extraction reach" in 1995 after CDFG opened the mouth of the river and fish were able to migrate past the shallow riffles. Adult anadromous salmonid migration into the Van Duzen River appears to be controlled by rainfall and begins after the first rains in the fall. Halligan (1997b) reported that a few juvenile steelhead were observed in the lower Van Duzen River and that thousands of pikeminnow were present. On June 30, 1999, Jensen (2000) documented age 2+ and 3+ steelhead and two summer steelhead adults at the upstream end of a lateral scour pool in the "gravel extraction reach."

Historic land and water management practices contributed to loss of habitat diversity within the Van Duzen River. Functioning aquatic habitat is limited in the Van Duzen watershed due to low abundance of pools, low abundance of LWD (instream and for recruitment), low instream cover levels, and high levels of fine sediment (USFWS and NMFS 1999). Spawning habitat is present, as evidenced by previous documentation of spawning activity. Existing conditions indicate that the Van Duzen River has limited rearing habitat due to elevated water temperatures. Cool water seeps, thermal stratification, and habitat complexity all play critical roles in sustaining micro-habitat for juvenile and adult salmonids. Fishery observations indicate that natural populations of anadromous salmonids persist at low levels within the Van Duzen River watershed.

The Van Duzen River has been listed under section 303(d) of the Clean Water Act as water quality limited due to sediment problems. Essential habitat feature problems include high levels of sediment, low percent of pools, high water temperatures, and low instream cover levels.

Factors Affecting Species Environment in the Action Area

Gravel mining

Sand and gravel mining in riparian areas may have substantial effects on stream channels and hydraulic characteristics of areas essential for salmonids. In addition to the immediate morphological changes in stream channels caused by excavation, channels continue to exhibit instability, accelerated erosion, and altered substrate composition and structure after erosion has ceased (Spence et al. 1996). The associated downcutting of stream channels that frequently follows gravel mining may result in increased flood peaks, increased sediment transport, increased temperatures, and decreased base flows. The most direct impacts to salmonids are degradation and simplification of spawning and rearing habitats, and increased turbidity (Spence et al. 1996).

Existing gravel and rock extraction activities that affect the action area include near-stream gravel mining at five sites on the lower Van Duzen River (Table 1). These gravel operations are under the jurisdiction of Humboldt County, the California Coastal Commission (for those activities conducted within the Coastal Zone) and the Army Corps of Engineers (COE). Gravel operations are conducted under a Letter of Permission (LOP) adopted by the COE for all navigable waters of the United States within Humboldt County. Under the LOP, the number of operators, location of gravel operations, and amount of material removed varies from year to year, based on annual cross-section surveys and other information, as determined by the County of Humboldt Extraction Review Team (CHERT). Take of listed Pacific salmonids is permitted

under an Incidental Take Statement issued to the COE for activities involving the near-stream gravel mining.

Table 1. Gravel bar sites are listed from the most upstream site to the most downstream site, and are not necessarily contiguous. The length of each site is measured along the center line of the stream, adjacent to each bar. Data was provided by Humboldt County Planning Division (April 26, 2000).

Length (feet)	Gravel Bar Site Name
2304	Pacific Lumber Bar (near the town of Carlotta)
661	Thomas Bess Ranch
15506	Van Duzen Ranch
1890	Leland Rock Gravel Bar
755	Hauck Bar (at confluence with Eel River)

Timber Harvest

Past and present timber harvest on both public and private lands have contributed to the degradation and destruction of salmonid habitat in the Van Duzen River watershed. Past harvest, on both public and private lands, has left a legacy of altered habitats that still require considerable time for recovery. Timber harvest practices were not regulated in riparian zones until the 1970s; thus, there were more than 120 years of human activity and 50 to 70 years of intensive harvest before mandated consideration of streamside protection. Forest practices that contributed to the decline of riparian habitat include timber harvest to the streambank; railroad and road building along riparian corridors; and splash damming. Additionally, removal of LWD was a biologically recommended practice until the mid-1970s. All of these practices led to a considerable reduction in riparian zone function.

On March 1, 1999, the USFWS and NMFS approved Pacific Lumber Company, Scotia Pacific Company LLC and Salmon Creek Corporation's (collectively known as "PALCO") Habitat Conservation Plan (HCP) under Section 10 of the ESA. PALCO has forested lands in the Van Duzen River basin. The PALCO HCP is intended to establish long-term sustained yield timber harvest levels; to avoid or mitigate potentially significant adverse impacts on listed and other species; to avoid or mitigate potentially significant adverse impacts upon water quality, fisheries, and aquatic wildlife; and to establish procedures to document implementation and evaluate the efficacy of the HCP measures. The PALCO HCP should result in improvements to the baseline condition of the Van Duzen River watershed.

Grazing

In general, livestock grazing has deteriorated significant areas of the western States. Since the 1930s, rangelands in the Pacific Northwest have benefitted from less intensive grazing; however, the majority of western rangelands are in deteriorated conditions (Spence et al. 1996). Poor

upland conditions may increase sediment loads to streams and alter hydrologic regimes, leading to channel incision, channel widening, and further deterioration of riparian zones. Hydrologic changes may occur in response to loss of vegetation or change in soil permeability brought on by reduced organic content, splash erosion, and trampling by livestock. Similarly, sediment transport processes are linked to vegetation cover and the routing of water from the hillslope to the stream (Spence et al. 1996). Since livestock tend to concentrate in areas near water, shade, preferred vegetation, salt and a relatively level topography, essential riparian areas for salmonids may be heavily utilized and become over grazed and trampled, leading to erosion and hydrologic disruptions.

Cattle and sheep grazing has occurred within the Van Duzen River watershed since the early 1900s. The extent of grazing and effects on salmonid habitat in the action area are currently unknown.

Predation by introduced Sacramento pikeminnow

Sacramento pikeminnow (*Ptychocheilus grandis*; formerly known as "squawfish") were introduced in 1979 to the Eel River basin. A high abundance of Sacramento pikeminnow has been reported recently in the Eel River Basin (Brown and Moyle 1991). Since their introduction, the pikeminnow have expanded their range to the entire basin including the Van Duzen River (SEC 1989, Halligan 1997b). Pikeminnow are known predators of salmonids. While quantitative estimates of impacts are not available, biologists generally agree that the introduced pikeminnow are causing a serious adverse impact to salmonids in the Eel River basin.

Status of the Species in the Action Area

The following discussion provides past and current estimates, if available, of listed and proposed salmonid populations in the Van Duzen River. In addition, a description of the species' presence is given; however, this is general information and not intended to reflect the exact periods when salmonids may be present in the action area.

Population Abundance

CDFG (1965) estimated that the annual runs in the Van Duzen River numbered 2,500 chinook salmon and 500 coho salmon. The summer steelhead run is generally considered to be less than 100 (Higgins et al. 1992).

Species Presence

SONCC coho salmon adults migrate into the lower Van Duzen River from November through February with a peak in December. Spawning occurs between November and February. Juveniles rear year-round in the lower Van Duzen River, while smolts emigrate to the Pacific Ocean from April through May.

CC chinook salmon adults migrate into the lower Van Duzen River from September through December. Spawning occurs from November through January. Juvenile chinook rear in the lower Van Duzen River between March and June, while smolts emigrate to the Pacific Ocean from March through June with a peak in April.

Winter run NC steelhead adult migrations occur between mid-October and April in the lower Van Duzen River, and summer run NC steelhead adults enter fresh water between May and October. Spawning occurs from November through March. Juveniles rear in the lower Van Duzen River all year long. Smolts emigrate to the Pacific Ocean from March through June with a peak between mid-April and mid-May.

The action area functions primarily as a migratory corridor for these salmonid species in the freshwater reaches. The lowest reach of the Van Duzen River at its confluence with the Eel River typically flows subsurface in late summer until the first significant rains in the fall. On November 12, 2001, a pulse of river flow connected the Van Duzen to the Eel River just long enough to attract a large number of adult chinook to enter the lower Van Duzen from the Eel River. As the flow dropped after the storm event, approximately 140 adult chinook were stranded and died in isolated shallow pools. While gravel mining has taken place for the past five years in this area, the Van Duzen carries a large natural sediment load, which is amplified by land management activities upstream. All of these conditions, independently or in aggregate, can lead to braiding and shallow/wide channel conditions downstream. The function of the migratory corridor for adult salmonids in the lower Van Duzen is therefore impaired. The corridor for juvenile salmonids most likely functions properly in most years as the outmigration period is completed before the channel goes dry.

Some summer rearing, mostly likely of steelhead juveniles, may occur in the action area. However, habitat conditions during the summer and fall in drier years can be unsuitable for rearing due to low water and poor water quality. The estuary functions as a migratory corridor and as juvenile rearing habitat. Like most large coastal rivers, the Eel River estuary has been impacted by various land use practices and development; however, we do not have specific information about the quality of rearing habitat it provides.

One may expect some spawning, most likely by chinook, in the lower Van Duzen and Eel River mainstems. However, due to the unstable nature of the substrate in the action area, the area likely does not provide proper function for spawning, and is probably not an historically important spawning reach.

EFFECTS OF THE ACTION

The Proposed Action may affect SONCC coho, CC chinook, and NC steelhead due to its location, timing, and construction activities. Some of these listed Pacific salmonids are very likely to be in the action area during construction activities. Predictions of the likelihood of salmonid presence in the action area at their various life stages are based on observations

averaged over several years. The actual timing of the occurrence of salmonids in a given year may be influenced by a variety of factors.

The Proposed Action's low flow channel altering activities will take place between June 15 and October 15, in 2003 and 2004. Based on the discussion provided above in the "Status of the Species" and "Status of the Species in the Action Area" sections, SONCC coho adults are not expected to be present during the proposed in-water construction season. SONCC coho smolts are likely to have migrated through the action area before any in-water construction. SONCC coho fry may rear in the action area during the in-water construction season. CC chinook adults are not expected to be present during the proposed in-water construction season. CC chinook juveniles may be present in June during the final stage of their rearing and outmigration period. Adult NC summer-run steelhead may be present in the action area throughout the in-water construction season, while winter-run adults may enter the action area at the very end of the in-water construction season. Juvenile NC steelhead are expected in the action area during the entire in-water construction season. Therefore, the most vulnerable species and life stages will be coho fry, juvenile steelhead and adult summer-run steelhead. The most numerous life stage will be juveniles, predominantly NC steelhead.

The effects of the project may include harm and/or harassment in the form of loss or degradation of pools or spawning habitat, changes in substrate size distribution, increases in turbidity, and temporary loss of habitat. Gravel extraction, which has similar effects, will also take place in the vicinity of the Proposed Action during the same period during which the project is proposed. Some effects of the Proposed Action will be added to effects of gravel mining in the "gravel extraction reach." However, it is not possible to quantify these additive effects because the number of operators, location of gravel operations, and amount of material removed varies from year to year, based on annual cross-section surveys and other information, as determined by CHERT. Regardless of contemporaneous gravel extraction operations, we believe that the Proposed Action is not likely to worsen long-term channel instability in the chronically impacted "gravel extraction reach." Other than possible harassment of fish due to possible adjacent equipment operation, the only immediate short term impact of gravel mining (as described in the Biological Opinion on the U.S. Army Corps of Engineers Letter of Permission Procedure Gravel Mining and Excavation Activities within Humboldt County, CA (LOP Opinion)) that could produce immediate additive effects in the action area is fine sediment mobilization during installation of temporary stream crossings at nearby gravel operations. The LOP Opinion concludes that, "During the installation and removal process (*of temporary crossings*), fine sediment may be mobilized in the stream, however this increase would be localized and of short duration, and not expected to be of sufficient intensity to impact rearing, holding, or migrating behaviors." We believe that the effects of the additional stream crossing (harassment and short term turbidity) due to the Proposed Action will not appreciably add to the effects of stream crossings installed by gravel extraction operations.

The following activities that could create adverse effects to listed Pacific salmonids or designated critical habitat during the Proposed Project were identified by NMFS during consultation:

- Pier 4 site preparation and construction activity

- Placement, use, and removal of temporary stream crossing
- Removal of old bridge and piers
- Alteration of river bed by equipment access
- Installation of new bridge pilings
- Pollutant spills and discharge
- Geotechnical drilling

Analysis for Effects of the Action

In this section of the Opinion, as required by the ESA and its implementing regulations (50 CFR § 402), NMFS assesses the direct and indirect effects of the Proposed Action, and any interrelated and interdependent actions, on SONCC coho salmon and their designated critical habitat, CC chinook salmon and their designated critical habitat, and NC steelhead. The purposes of this assessment are twofold: First, to determine if the Proposed Action is likely to have effects on SONCC coho salmon, CC chinook salmon, or NC steelhead that appreciably reduce their likelihood of both survival and recovery in the wild (the "jeopardy" standard identified in 50 CFR § 402.02). Second, to determine if the Proposed Action is likely to appreciably diminish the value of designated critical habitat for both the survival and recovery of SONCC coho salmon and CC chinook salmon in the wild (the "destruction or adverse modification" standard identified in 50 CFR § 402.02).

To conduct our assessment of the Proposed Action, NMFS considered the direct and indirect effects, and any effects of interrelated and interdependent actions, of each activity associated with the Proposed Action on the area, connectivity, and quality of habitats that support listed species. NMFS uses published and unpublished data and studies of interactions between the project operations and listed species or their habitats to estimate the likelihood of future effects. There is an extensive amount of published literature on the relationship between changes in habitat quantity, quality, and connectivity and the persistence of animal populations. For detailed summaries of this literature, readers can refer to the work of Fiedler and Jain (1992), Gentry (1986), Gilpin and Soule (1986), Nicholson (1954), Odum (1971, 1989), and Soule (1986, 1987).

With respect to listed species, NMFS bases its assessment on the relationship between habitat, individuals, and populations and assumes that an activity that destroys or modifies habitat of listed species will be followed by a response by an individual or population. The current baseline, the size and duration of the habitat effect, the degree of potential harm to an individual(s), and the demographic effect expected to result are factored into our assessment.

Pier 4 site preparation and construction activity

It will be necessary to divert the flow away from the construction area around pier 4. (Only pier 4 presently requires work within the active low flow channel of the Van Duzen River). Preparation of the pier 4 site will require construction of a dike/platform of approximately 50 feet or less on a side. The dike/platform will be made of clean, washed spawning-sized gravel that will be pushed slowly into the water to displace any salmonids that may be in the area. Once this dike/platform is in place, a sheet pile cofferdam will be constructed around the pier footing so that excavation to the bottom of the footing will be performed in the dry. This method will

prevent the possibility of fish being trapped within the coffer dam. The gravel will be removed at the end of construction.

Some harassment of fish and a minor amount of temporary edge habitat loss would be likely to occur in association with site preparation at pier 4. Yearling and older listed Pacific salmonids are likely to quickly move away from disturbances and not be in danger of being crushed by the placement of gravel. Placement of the gravel would be done slowly enough and in such a way that crushing of very young (small) listed Pacific salmonid juveniles would not be anticipated to occur. The amount of harassment anticipated would not be expected to stress any listed Pacific salmonids enough to kill or injure them. The placement of the dike/platform might result in the temporary loss of habitat and might cause a temporary narrowing of the stream channel that results in increased stream velocity past the diversion. However, the area to be filled is presently a shallow, silty margin with no in-water cover, which may function as low quality rearing habitat. Our opinion is that the temporary filling of this site represents a biologically insignificant loss. Also, potential increased stream velocities in this low gradient reach are not expected to impede the migration of salmonids.

During water diversion and dike/platform construction, a minor amount of increased turbidity is expected to occur and then subside. As the gravel comes in contact with the live stream, fine sediment will be entrained and suspended in the water, affecting the water quality. However, this fill will be of clean gravel; therefore, turbidity is expected to be faint and not pervasive enough to harm listed Pacific salmonids present at that time.

Water that seeps into the coffer dam will be pumped into a settling basin to prevent sediment from entering the flowing water and to keep the area dry. The settling basin will be located out of the high flow channel, and will be cleaned and removed prior to the onset of fall rains. Therefore, fine sediment mobilized within the coffer dam should not reach flowing water, and will not affect listed Pacific salmonids.

The use of heavy equipment above or adjacent to the channel may harass fish in the channel and/or nearby locations. Salmonids are alert to activities, bodies, shadows, etc, that may represent a predator. Noise and vibrations may also cause similar responses. A normal reaction for salmonids is to leave the area, and if that is not possible they will hide. If they are unable to do either of these reactions, they may swim in circles until they become exhausted. This same response would be likely if a person entered the water to retrieve an object.

Harassment by equipment crossing or operating near the channel is of particular concern with summer run NC steelhead adults who are attracted to deep pools and enter fresh water between May and October—overlapping the construction window of the Proposed Action. CC chinook salmon and winter-run NC steelhead may start entering the project area as early as the first week of September, as well. Therefore, some harassment of CC chinook and NC steelhead adults is possible from disturbance by heavy equipment, which may disrupt migration and holding patterns. While we are concerned that adult migration could be delayed during equipment operation, the disturbance events will be associated with periodic movement of equipment and

vibratory activities such as coffer dam installation. These activities are likely to be of short enough duration so as to not represent a threat to spawning success.

The level of adverse impacts to listed Pacific salmonids caused by placing the dike/platform, and operating equipment at the pier will depend on how carefully the fill is placed, the size and shape of the fill, the depth and amount of cover in the channel, the amount of water flowing through the channel, the routes available for salmonids to leave affected reach, and the habitat available to which they may escape. The present configuration of the channel leads us to believe that the preparation at pier 4 can be performed with a minimal amount of adverse impact. While we cannot predict the future configuration of the channel or flows at the time of construction, we believe that it is unlikely to change in such a way to appreciably increase the likelihood of adverse impacts.

If the appropriate management practices described in the BA (FHWA 2001) are followed, we do not expect the preparation and use of the pier 4 site to reduce the numbers, reproduction, or distribution of listed salmonids in the Van Duzen watershed.

Placement, use, and removal of temporary stream crossing

Equipment will cross the low flow channel on a temporary crossing constructed of a flat-car bridge that will fully span the low flow channel. Construction of the crossing may require that a piece of heavy equipment cross the channel in the water once during installation and once during removal. Footings for the bridge will either be pre-cast concrete, log stringers, or some other solid material, and approaches will be made from gravel collected from the adjacent bar or imported. The footings and approaches will not contact the water. The crossing will be removed at the end of the construction season, prior to increased fall flows. The project's construction season is timed to coincide with the summer period of low stream flow and low rainfall, and avoids the majority of downstream juvenile migration and upstream spawning migration, and occurs after alevin have emerged from redds.

Adherence to these measures is expected to reduce the potential that salmonids will be killed during project installation and removal of the crossing. NMFS expects that adults, smolts, and juveniles should be able to avoid or flee affected areas during construction of the channel crossing. However, very young juveniles without an established flight response may still be killed. The NMFS expects that the number of young juveniles that may die will be very low to zero and should not result in reductions in population abundance, reproduction, or distribution of listed salmonids in the Van Duzen watershed.

During the installation and removal process, fine sediment may be mobilized in the stream, however this increase would be localized and of short duration, and not expected to be of sufficient intensity to impact rearing, holding, or migrating behaviors.

Access to the crossing is proposed via an existing road on the northwest side of the existing southbound bridge. Therefore, no riparian vegetation will be disturbed for access, or by any other construction activity. Equipment and material will be moved along temporary roads graded

on the gravel bar to the work sites. The gravel bar will be regraded as close as possible to its original configuration at the close of each construction season.

If the appropriate management practices described in the BA (FHWA 2001) are followed, we do not expect the level of incidental take due to the temporary stream crossing to reduce population numbers, reproduction, or distribution of listed salmonids in the Van Duzen watershed.

Removal of old bridge and piers

The superstructure of the old bridge will be removed using cranes such that no portion of the bridge will drop into the river. Removal of the remaining two in-channel piers will also require coffer dams and pumping of water, as described above for pier 4. Neither of these sites are presently connected to the low flow channel; however, there was an isolated pool around the base of pier 3 during a site visit on June 11, 2001. We did not observe any fish in the pool, though there was some woody and rocky cover in which fish could hide. We found the pool dry on September 5, 2001. Depending on changes to channel geometry, similar pools may form around piers 2 and/or 3 before construction is due to begin. While salmonids may not survive in these isolated pools for an extended period due to water quality conditions and predators, it is possible that they may survive for longer periods during wetter conditions than we have experienced in 2001. Caltrans proposes to remove any listed Pacific salmonids before construction activities begin in an isolated pool. If present in an isolated pool, juvenile NC steelhead, SONCC coho, and CC chinook would be stressed by the capture, handling, and relocation that would be required prior to dewatering. NMFS anticipates that this stress may result in some injury or mortality of captured salmonids, although no more than 10% of the fish captured.

As explained in the "Description of the Proposed Action" section, should the low flow channel shift away from pier 4, it will most likely either be located away from any piers, or will capture pier 2 or 3, resulting in either fewer or essentially equal effects. In the unlikely event that the low flow channel splits and captures more than one pier, or requires that more than one temporary crossing be constructed, then a new analysis of effects will be required.

Placement of structures (e.g., coffer dams) in both the low flow channel and the adjacent river bed may alter hyporheic flow, which could affect downstream upwelling of cool water. These upwelling areas provide thermal refugia for rearing juvenile salmonids. It will not be possible to predict the location or magnitude of these effects, or whether they will occur.

Apart from the speculative effect to hyporheic flow, no direct adverse impacts are expected due to removal of existing piers that are not connected to the low flow channel. Adverse impacts at piers connected to the channel are related to site preparation as analyzed above for pier 4. NMFS does not expect additional incidental take due to this project element, unless capture and relocation of listed salmonids is necessary to preserve those fish from possible harm due to in-water bridge removal activities.

Alteration of river bed by equipment access

Construction activities in the dry part of the stream channel may result in the immediate degradation of structural habitat by heavy equipment obliterating the topography of and/or compacting the channel bed. All dikes, berms, construction material, debris, temporary roads, and the settling basin will be removed and the contours of the gravel bar will be restored to natural elevations; however, the potential exists for some adverse impact to channel geometry and associated function during higher flows.

Deep pools in the action area are particularly important to adults migrating upstream. Pools provide space for resting and hiding and often, cool water refugia. Aside from possible minor impacts caused by the diversion of water away from pier 4, NMFS does not expect the proposed activities in the dry channel to result in the permanent loss of pool habitat.

LWD is an important component in pool formation, in providing cover for salmonids, and for habitat complexity in general. If LWD is in the action area where heavy equipment is utilized, construction activities may result in the removal of important LWD. The effects to listed Pacific salmonids will depend on the function that the LWD is providing at the location where it is found. Loss of cover in pools may make adult listed Pacific salmonids less inclined to use that habitat, or subject them to more stress while using it, thus reducing survival and productivity. Loss of LWD that is stabilizing the stream bed can add to increased bedload mobility that may subject redds to scour downstream of the project site. Redds that are scoured out of the stream bed are lost and result in the death of the eggs within those redds. This promotes loss of resiliency in listed Pacific salmonid populations in the Van Duzen River. Equipment will avoid disturbing LWD when possible, and necessarily disturbed LWD area will be stockpiled on the edges or upstream of the site to allow for the natural redistribution during winter storms. Based on our observations of the construction site, we expect the potential for adverse effects associated with disturbance of LWD to be minor.

Construction in the stream channel disrupts the layering of sediments in the stream bed which results in more fine sediments becoming available for transport when stream flows inundate the disturbed area. An increase in the availability of fine sediments in the channel usually leads to elevated turbidity. Activities occurring due to the Proposed Action that disturb the stream bed and thus are likely to increase the availability of fine sediments are: placing, using, and removing the diversion dike and settling basin; placement and use of the temporary crossing; spilling turbid pump-water; and the grading of temporary roads.

Elevated turbidity levels can affect the entire foodweb in streams in numerous ways. Stream photosynthesis and primary production can be reduced if sunlight does not reach the substrate. The resulting hindrance of benthic macro-invertebrate production is a reduction in species on which listed Pacific salmonids forage. In general, effects of sedimentation on salmonids are well documented (Meehan 1991, Spence et al., 1996). Suspended sediments cloud otherwise clear waters making salmonid prey and predator detection difficult, reducing feeding opportunities, and possibly inducing behavioral modifications. Suspended sediments may cause clogging and abrasion of gills and other respiratory surfaces, providing conditions conducive to entry and

persistence of disease related organisms, which, in turn, may provoke behavioral modifications. Redds may be harmed when suspended sediment deposits on them, affecting inter-gravel permeability and dissolved oxygen levels, adhering to the chorion of eggs, suffocating incubating salmonid eggs, and/or entombing different life stages. Physical habitat may be degraded by pools filling with sediment and losing volume and by the settling of fine sediment into the interstitial spaces of the substrate in riffles.

When the areas disturbed by the construction activities become inundated by the first flows of the season, they will provide an additional source of easily transported fine sediments. The additional pulse of fine sediment that would occur during the first winter storms is expected to add moderately to the turbidity of the existing sediment regime. The extent of the adverse effects in the Van Duzen and Eel rivers from this extra turbidity will depend on the level of its increase, its duration, its pervasiveness, and the life history stages of listed Pacific salmonids affected. The new sediment, in combination with existing sediment in transport, will contribute to any physical or behavioral impacts that the turbidity is causing listed Pacific salmonids. Any migratory disruption of listed Pacific salmonid adults occurring due to raised turbidity levels might be temporarily worsened some small, but unknown, amount. Some additional loss of CC chinook eggs downstream of the action area may occur the first year after the project.

Overall, the construction activities associated with the Proposed Action will temporarily add slightly to habitat degradation over roughly one to three years time after which the disturbed portions of the channel are expected to have stabilized and the effects of the additional contribution of fine sediments dispersed.

If the appropriate management practices described in the BA (FHWA 2001) are followed, NMFS expects short term and minimal reductions in numbers and reproduction of listed salmonids in the Van Duzen watershed due to the temporary stream crossing. However, these minor reductions are not expected to affect survival or recovery of listed salmonid populations in the Van Duzen watershed.

Installation of new bridge piers

The piers for the new bridge will be constructed outside of the low flow channel; therefore, there should be no adverse effects due to their construction, apart from effects described above for alteration of the dry channel bed. The total area of the pier footings in the bankfull channel will be slightly less than the area of the existing pier footings (12 feet total vs. 13+ feet total); therefore, effects to river hydrology will not worsen the baseline condition.

Pollutant spills and discharge

Listed Pacific salmonids holding in this channel are also particularly vulnerable to water quality degradation from concrete or fuel spilling into the water, and reduction of flow into and/or out of the channel. Suspended concrete changes the pH of the water and can be lethal to fish. Listed Pacific salmonid juveniles that may be along the water's edge in the project vicinity or nearby downstream are most susceptible to spills. Concrete spills are unlikely to happen, but do occur

occasionally. Listed Pacific salmonids may be sickened or killed if exposed to a sudden pH change caused by spilled concrete. However, Caltrans requires the use of certain best management practices, a Water Pollution Control Plan, and emergency spill controls. These practices, as described in the BA (FHWA 2001), appear to be adequate to minimize potential adverse effects. Adverse effects to forage species are likely to be localized and should not result in a significant reduction of food availability to salmon. Therefore, we do not expect adverse effects to salmonids due to pollutant spills or discharge.

Geotechnical drilling

NMFS and Caltrans are currently working together to determine what adverse effects to listed salmonids may result from geotechnical drilling in or adjacent to flowing water. Specifically, we are exploring possible effects due to discharge of "drilling muds" into flowing water. Our present understanding is that bentonite is a clay mineral with a very small particle size, which, while it is generally considered to be non-toxic, may have an adverse effect on listed salmonids. Patin (1999) in his review of the environmental effects of offshore oil drilling says that water-based drilling muds (including bentonite), while preferred over oil-based muds or synthetic-based muds (including polymers) for environmental reasons, can still damage marine life. Patin (1999) also concludes that water-based drilling muds deposited on seabed sediments may smother benthic animals and, if in the form of very fine particles suspended in the water, can interfere with respiration in small marine animals and pelagic fish. Additionally, various additives such as surfactants and oils are sometimes included in bentonite drilling mud. Until we are better able to define effects to listed salmonids from polymer drilling muds and additives to bentonite, NMFS and Caltrans have agreed that the drilling mud used shall be bentonite without additives when drilling occurs within the river channel. Should bentonite drilling mud be accidentally discharged into flowing waters of the Van Duzen River, we expect effects to be similar to discharge of fine sediment from other sources, which typically include clay particles such as bentonite. These effects were described above in *Alteration of river bed by equipment access*.

Geotechnical test drilling is required at five locations under the existing bridge within the Van Duzen River channel. NMFS anticipates that one or more of the drilling locations may be within flowing water. NMFS expects there to be some unknown amount of turbidity associated with this drilling, as well as some vibration of substrate during installation of the casing. NMFS and Caltrans explored the possible benefits of working within a coffer dam if drilling takes place in the water. A coffer dam could help contain disturbed sediment and any spill of bentonite drilling mud or drill spoils. However, coffer dam installation could potentially trap fish, perturb fish through vibrations during installation and removal, and disturb fine sediments and gravels. We decided that the small amount of material within the casing at any one time, including approximately five gallons of bentonite slurry, and the relatively minor disturbance caused by drilling within the casing, would likely be less damaging than the use of a coffer dam.

Caltrans will avoid drilling in water if possible, either by waiting until the channel is dry, or choosing locations out of the water. NMFS believes, based on Caltrans' project description, that turbidity will be minor. All drilling is accomplished inside of a casing so that all spoils are

recovered on the bridge deck. Management practices appear to be adequate to ensure that material will not enter the water. Effects of short term elevations in turbidity are described above. Vibrations resulting from driving the casing could be injurious to eggs and alevins in the gravel; however, the timing of the work will avoid the period during which eggs and alevins are likely to be present. Caltrans will contact NMFS in advance of any drilling activities in the water so that a NMFS biologist can observe the methods and management practices for future reference.

Based on the location, scale, duration, and timing of the proposed geotechnical drilling, as well as Caltrans' management practices intended to minimize the chance of spills and other disturbance, we do not expect incidental take due to this project element.

Interrelated and interdependent actions

No interrelated or interdependent actions that may have adverse effects are expected as a result of the Proposed Action. Replacement of the bridge is strictly intended to replace a bridge that has reached the end of its usable life; therefore, no increased traffic or development is expected.

Project elements in aggregate

Individual project elements, as discussed above, are not expected to reduce the reproduction, numbers, or distribution of the listed salmonid populations or diminish the value of critical habitat. All project elements' expected effects on salmonids and designated critical habitat, when considered in aggregate, are also not expected to reduce reproduction, numbers, or distribution of the listed salmonid populations or diminish the value of critical habitat. Most project effects are minor and temporary in nature and are expected to affect few if any listed fish or their habitats.

Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future Federal actions are not considered in this Opinion because they require separate consultations pursuant to section 7 of the ESA.

Conditions in riparian and instream areas, and activities upstream of the action area, will have an influence on the quality and quantity of habitat within the action area. In addition to gravel extraction, the dominant land-use activities upstream of and within the action area are timber management, agriculture, and urban development.

Timber Management

Future timber harvest levels in the action area cannot be precisely predicted, but NMFS expects that harvest levels on tribal and private lands in the Van Duzen River watershed will continue to occur at current levels. Within the action area, direct, indirect, and cumulative effects of timber

harvesting may degrade habitat features identified as essential to coho and chinook designated critical habitat and to their ability to survive and recover.

Water Development and Diversion Operation

An unknown number of permanent and temporary water withdrawal facilities affect the action area. These include diversions for urban, agriculture, commercial, and residential use. Impacts from water withdrawals include entrainment and impingement of younger salmonid life stages, localized dewatering of reaches, and depleted flows necessary for migration, spawning, rearing, flushing of sediment from spawning gravels, reduced gravel recruitment, and transport of large woody debris. These activities are expected to continue into the foreseeable future.

Agriculture

Agricultural activities include grazing, dairy farming and the cultivation of crops. These activities are expected to continue into the foreseeable future. The impacts of this land use on aquatic species include decreased bank stability, loss of shade- and cover-producing riparian vegetation, increased sediment inputs, and elevated coliform bacteria levels.

Urban Development

Impacts to salmonids from urban and suburban development include loss of riparian vegetation, changes in channel morphology and dynamics, altered watershed hydrology, increased sediment loading, and elevated water temperatures. Impacts in the Van Duzen River watershed are not expected to increase substantially over current levels because relatively slow growth is anticipated.

Road Construction and Maintenance

Construction of private and county unsurfaced roads are a significant source of sediment input into streams that are habitat for listed and proposed salmonids. The level of new road construction cannot be anticipated, but it is expected to continue at a slightly lower level than has occurred in the recent past. Impacts from roads associated with timber harvest operations should decline due to the increased emphasis on protection of aquatic resources and implementation of higher standards for road construction, maintenance and use.

Pikeminnow Control Measures

A private group known as the Upper Eel Watershed Forum, has submitted a grant proposal to the Mendocino County Fish and Game Commission for financial support of a pikeminnow control effort on the Eel River. The proposal is to establish a pikeminnow fishing derby and offer anglers bounties for pikeminnow turned in to receiving stations. The fishing derby will be scheduled at times of the year, and conducted in areas such that impacts to anadromous salmonids are minimized. The effects of this program are expected to be beneficial to listed and proposed species in the Eel River system.

Chemical Use

It is anticipated that chemicals such as pesticides, herbicides, fertilizers, and fire retardants will continue to be used in the action area. Impacts to salmonids may include changes to riparian vegetation and associated organic input into aquatic systems, changes in aquatic invertebrate communities, direct physiological effects to salmonids, and increased algae and phytoplankton. Due to the lack of specific information we are unable to determine the effects of chemical applications in the action area. Use of chemicals is expected to be conducted under applicable State and Federal laws.

California Stream Bed Alteration Agreements

CDFG is in the process of strengthening the permitting process for activities taken place in, or in the vicinity of, rivers and streams by requiring environmental review. Henceforth, stream bed alteration agreements will be reviewed in accordance with the California Environmental Quality Act. Implementation of this program is expected to result in lessened impacts to salmonids from projects such as temporary summer crossings, culvert installation, gravel extraction, and stream bank stabilization projects within the action area.

CONCLUSION

After reviewing the best scientific and commercial data available, the current status of SONCC coho salmon, CC chinook salmon, and NC steelhead, the environmental baseline for the action area, the effects of the Proposed Action, and the cumulative effects, it is NMFS' biological opinion that the Proposed Action is not likely to jeopardize the continued existence of SONCC coho salmon, CC chinook salmon, or NC steelhead.

The potential effects described and discussed above in relation to the habitat features that listed Pacific salmonids require for survival and recovery include the potential effects to critical habitat. The levels of potential adverse effects are not expected to reach the level of destruction or adverse modification of critical habitat.

INCIDENTAL TAKE STATEMENT

Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. NMFS defines the term "harm" as an act which kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the

ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by FHWA so that they become binding conditions of funds issued to Caltrans for the exemption in section 7(o)(2) to apply. FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If FHWA (1) fails to assume and implement the terms and conditions or (2) fails to require Caltrans to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the funds issuance document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, FHWA, or Caltrans, must report the progress of the action and its impact on the species to NMFS as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

Amount or Extent of Take Anticipated

NMFS anticipates that the Highway 101 Van Duzen River Bridge Replacement Project may have more than a negligible likelihood of resulting in incidental take of CC chinook, SONCC coho, and NC steelhead. Incidental take associated with this type of project is expected from short-term detrimental effects on aquatic habitat parameters including substrate quality, turbidity, and suspended sediment levels, all of which may result in incidental take in the form of habitat modification or degradation that could kill or injure fish by impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take, including lethal take, is also possible due to capture and direct handling of individual listed salmonids, as well as resulting from avoidance behavior caused by construction activities. No more than ten percent of salmonids captured and handled are expected to die. Medium- and long-term detrimental effects resulting in incidental take may result from temporary loss of aquatic habitat.

Even though NMFS expects some low level of incidental take to occur due to the actions covered by the Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species. In instances such as these, NMFS designates the expected level of take through surrogates such as physical effects to habitat that may be expected to translate into take of listed species by harassment, harm, injury, or mortality, for example.

NMFS expects that habitat impacts will be consistent within the expected effects of project related actions as described in the Opinion. For example, very young juvenile salmonids without an established flight response would be killed during installation of temporary stream crossings. Anticipated incidental take may be exceeded if the project related actions are not in compliance with the terms and conditions of this incidental take statement or the effects of the actions exceed the effects anticipated by this Opinion. Anticipated incidental take may also be exceeded if incorrect placement of the gravel fill and temporary crossing occurs; if the sediment basin fails; if any spill of contaminants occurs; if any salmonids are killed (other than the 10% expected during handling of captured fish); or if use of the temporary crossing causes prolonged stress to salmonids holding in the channel that is obvious to a fishery biologist.

Effect of the Take

Take resulting from actions such as these is largely unquantifiable in the short term, and is not expected to be measurable as long-term effects on listed salmonid habitat or population levels. In the accompanying biological opinion, NMFS has determined that the level of anticipated take is not likely to jeopardize the continued existence of listed SONCC coho salmon, CC chinook salmon, or NC steelhead or to result in the destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the above species.

1. To minimize the amount and extent of incidental take from project activities within and adjacent to the Van Duzen River, measures shall be taken to limit the duration and extent of instream work.
2. To minimize the amount and extent of incidental take from construction activities near the river, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within the creek.
3. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to ensure correctly implemented impact minimization practices.
4. To minimize the amount of injury and mortality of salmonids during capture and relocation activities, measures shall be taken to use techniques that have less impact on the sampled fish.
5. To minimize the amount and extent of take from project activities on the temporary crossing, measures shall be taken to protect all salmonids present.
6. To ensure effectiveness of implementation of the reasonable and prudent measures, and erosion control measures, monitoring and evaluation shall be conducted and reported both during and following construction.

Terms and Conditions

FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To Implement Reasonable and Prudent Measure #1, above (*To minimize the amount and extent of incidental take from project activities within and adjacent to the Van Duzen River,*

measures shall be taken to limit the duration and extent of instream work), FHWA shall ensure that:

a. Project activities in the Van Duzen River channel, but not in the low flow channel, will not occur before June 1 or after October 15 of a given calendar year. Project activities in the Van Duzen River low flow channel, including temporary stream crossing, in-water geotechnical drilling, and dike construction, will not occur before June 15 or after October 15 of a given calendar year.

b. If lethal take occurs, other than that expected during handling of entrapped fish, FHWA/Caltrans will immediately notify Mike Kelly of Arcata Field Office of NMFS, at 707-825-5178, or call the general office line at 707-825-5163 if Mr. Kelly is not available. The purpose of this call shall be to review the circumstances surrounding the lethal take and develop modification to project activities necessary to prevent further lethal take. Exceeding the take limit requires reinitiation of section 7 consultation. The following information will be supplied initially: The location of the carcass or injured specimen, and apparent or known cause of injury or death, and any information available regarding when the injury or death likely occurred.

2. To Implement Reasonable and Prudent Measure #2, above (*To minimize the amount and extent of incidental take from construction activities near the creek, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within the creek, and to stabilize bare soil over both the short-term and long-term*), the FHWA/Caltrans shall ensure that applicable BMPs are implemented to minimize adverse effects to aquatic habitat, and listed Pacific salmonids.

a. Vehicle maintenance, re-fueling of vehicles and storage of fuel shall be done at least 150 feet from the 2-year flood elevation or within an adequate fueling containment area.

b. At the end of each work shift, vehicles shall be stored greater than 150 feet (horizontal distance) from the 2-year flood elevation.

c. Excavation spoils, such as gravels from the channel bed that are stockpiled for reuse in the stream channel, may be stored in or near the stream channel. Excavation spoils that contain soils, such as from stream banks, may not be stockpiled in the stream channel. RSP can be stockpiled in the dry stream channel. Excavation spoils that will not be placed back into bank and channel construction will not be stored or stockpiled on site and will be end-hauled to an approved disposal site.

d. The settling basin shall be sized appropriately to allow percolation of the effluent through the bottom and sides rather than overflow. The settling basin shall be cleaned out each time it reaches 2/3 of capacity and be clean prior to recontouring the site.

e. Materials placed to aid in the containment of or contain materials escaping from the construction activities may not be allowed to contact water flowing in the stream channel.

f. When concrete is poured to construct bridge footings, work must be conducted within a coffer dam (or similar structure) so the pH of the water is not affected through contact with "green" concrete. Any effluent containing concrete slurry will be pumped into a tank and disposed of at an offsite location without the possibility of flowing into the stream channel.

g. The Contractor will develop and implement site-specific best management practices, a Water Pollution Control Plan, and emergency spill controls, and is responsible for containment and removal of any toxins released. Plans shall be submitted to NMFS for approval prior to construction activities. The Contractor will be monitored by the Caltrans Resident Engineer to ensure compliance.

h. Appropriate monitoring measures shall be implemented by FHWA/Caltrans to document compliance with BMPs, e.g. turbidity monitored below the work site following the California State Regional Water Quality Control Board criteria.

i. Geotechnical drilling mud shall be bentonite without additives when drilling takes place within the river channel, including on dry gravel beds and bars. Initial drilling through gravels will be accomplished using clean water as a lubricant. Once bedrock or consolidated material is reached, drilling mud (bentonite clay) may be used.

j. Caltrans shall contact Mike Kelly at 707-825-5178 a minimum of two weeks in advance of any drilling activities in the water so that a NMFS biologist can observe the methods and resulting conditions in the channel.

3. To Implement Reasonable and Prudent Measure #3, above (*To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to ensure correctly implemented impact minimization practices*), the FHWA shall ensure that:

a. Disturbance of Large Woody Debris (LWD) shall be avoided when possible. Stockpiling of necessarily removed LWD material from the construction area shall occur and LWD will be stockpiled on the edges or upstream of the site which may allow for the natural redistribution of LWD during winter storms.

b. Any bank riprap that may be placed in conjunction with the Proposed Action, and receives sunlight, will be planted with local riparian vegetation and monitored and replanted until 75 percent cover with live tree and shrub vegetation is achieved.

c. Pools shall be maintained to provide resting and rearing habitat for salmonid migrants.

d. All fill used to form dikes or berms that will contact water will be placed such that salmonids will not be crushed during its construction or removal. All such fill shall be formed from washed, spawning-size gravel, between 10 and 100 millimeters in diameter.

e. Removal of existing trees or shrubs from the banks of the Van Duzen River will not occur in the project area.

f. FHWA/Caltrans shall ensure that if bladders are used to divert flow instead of a gravel berm that the bladders are placed in such a way as to prevent listed Pacific salmonids from being trapped and/or crushed.

4. To Implement Reasonable and Prudent Measure #4, above (*To minimize the amount of injury and mortality of salmonids during capture and relocation activities, measures shall be taken to use techniques that have less impact on the sampled fish*), the FHWA shall ensure that:

a. Caltrans shall contact NMFS before work begins to notify NMFS as to the specific conditions for water diversion and dewatering.

b. Caltrans shall conduct visual surveys for listed Pacific salmonids prior to any dewatering, diversion, or work in isolated pools, and notify NMFS two weeks prior to the survey so that NMFS may choose whether to participate.

c. Caltrans shall share the results of the survey for listed Pacific salmonids with NMFS.

d. A qualified fisheries biologist shall continuously monitor the placement and removal of any diversion needed to isolate work spaces from flowing water for the purpose of removing any salmonids that would be adversely affected. The fisheries biologist shall capture salmonids stranded in residual wetted areas as a result of streamflow diversion and work space dewatering, and relocate the salmonids to a suitable location immediately upstream or downstream of the work area. The fisheries biologist shall note the number of salmonids observed in the affected area, the number of salmonids relocated, and the date and time of collection and relocation. One or more of the following methods shall be used to capture salmonids: dip net, seine, throw net, minnow trap, hand. Electrofishing may be used after the methods listed above are employed and found not successful in capturing all the fish present.

e. NMFS shall be notified 2 weeks prior to, and each morning that, capture and relocation activities take place to allow a NMFS biologist to be on site during those activities.

5. To Implement Reasonable and Prudent Measure #5, above (*To minimize the amount and extent of take from project activities on the temporary crossing, measures shall be taken to protect all salmonids present*), the FHWA shall ensure that:

a. A person shall wade the stream ahead of heavy equipment crossing the wetted low-flow channel to scare any rearing juvenile salmonids out of the crossing area.

b. The stream crossing must be spanned to the maximum length possible using either a flatcar or bridge span, and must maintain a three foot elevation above the water surface.

6. To Implement Reasonable and Prudent Measure #6, above (*To ensure effectiveness of implementation of the reasonable and prudent measures, and erosion control measures, monitoring and evaluation shall be conducted and reported both during and following construction*), the FHWA shall ensure that:

a. A post-construction report shall be sent to NMFS by December 31, of each year the project is implemented. This report shall include the final status of the project, best management practices used to avoid or minimize impacts to listed species during construction; fish habitat enhancement or preservation measures incorporated; photographs of the completed project; and information about the numbers, species, general size class, and disposition (relocated, injured, killed) of all captured salmonids as can be obtained by brief observation and little to no extra handling during capture and relocation efforts. The report shall be submitted to:

Irma Lagomarsino, Supervisor Arcata Field Office
National Marine Fisheries Service
1655 Heindon Road
Arcata, California, 95521

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a Proposed Action on listed species or critical habitat, to help implement recovery plans, or to develop information:

1. The NMFS recommends that FHWA encourage Caltrans to chart project locations and type of changes to the channel, i.e. channel stabilization, bridge work, etc., and extent of modification to the existing habitat, i.e. reductions in length, width and depth within the channel in the Van Duzen River, in order to track the progression of stream modifications implemented by Caltrans, and to keep the resultant chart available as public records.
2. The NMFS recommends that FHWA encourage Caltrans to continue working with NMFS to further define possible effects to listed salmonids from geotechnical drilling, and to include geotechnical drilling in their biological assessments for proposed actions.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION OF CONSULTATION

This concludes formal consultation on the action outlined in the Caltrans Biological Assessment and for the Highway 101 Van Duzen River Bridge Replacement Project (HDA-CA, 01-HUM-101-56.3/57.4). As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, formal consultation shall be reinitiated immediately.

P44092



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish and Wildlife Office

1655 Heindon Road

Arcata, CA 95521

(707) 822-7201

FAX (707) 822-8411



In Reply Refer To:

1-14-2002-1211

March 12, 2003

Mr. Gary N. Hamby
Division Administrator
Federal Highway Administration
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

EXHIBIT NO. 5
APPLICATION NO.
1-04-014
CALTRANS
USFWS BIOLOGICAL OPINION (1 of 36)

Dear Mr. Hamby:

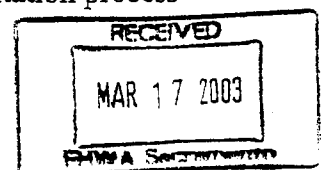
Subject: Formal Consultation on the Proposed Southbound Van Duzen River Bridge Replacement, Highway 101, Humboldt County, California

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed Southbound Van Duzen River Bridge Replacement Project on Highway 101, Humboldt County, California, and its effect on the Federally threatened western snowy plover (*Charadrius alexandrinus nivosus*), in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your September 19, 2002, request for formal consultation was received on September 23, 2002.

This biological opinion is based on information provided in the July 2002, biological assessment prepared by the California Department of Transportation's (Caltrans) District 1 office and other sources of information. A complete administrative record of this consultation is on file at the Arcata Fish and Wildlife Office.

Consultation History

In a letter dated April 24, 2002, the Federal Highway Administration (FHWA) designated Caltrans as their non-Federal representative for purposes of conducting informal consultation and preparation of biological studies under section 7 of the Act. The ultimate responsibility for section 7 obligations remains with the FHWA. Informal consultation on the proposed action was initiated on April 1, 2000, through a telephone conversation between Caltrans biologist Steve Hanson and Service biologist Jim Watkins. On March 27, 2002, Service biologists Ray Bosch and Jim Watkins met with Caltrans biologist Gail Popham at the Van Duzen River Bridge to discuss potential impacts and minimization measures. On April 10, 2002, Ray Bosch met with Caltrans staff Gail Popham, Steve Hanson, and Linda Evans to discuss the consultation process.



and possible terms and conditions. On April 11, 2002, the Service received a draft biological assessment. On April 25, 2002, the Service provided Caltrans comments on the draft biological assessment.

Time-frame of Biological Opinion

This biological opinion is valid through December 31, 2005 and covers two consecutive construction years during this time period.

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BIOLOGICAL OPINION

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1.0 Description of the Proposed Action

1.1 Project Elements

Caltrans, acting as FHWA's non-Federal representative, proposes to replace the southbound 2-lane steel girder Van Duzen River Bridge with a 2-lane concrete box girder bridge. The Van Duzen River Bridge is located on the Van Duzen River approximately 0.25 mile upstream of its confluence with the Eel River. The bridge site is approximately 10 miles inland from the Pacific Ocean.

The proposed bridge will be a cast-in-place concrete box girder bridge, 42 feet wide and 809 feet long with three piers. Each pier will have a 6-foot deep, 90 square-foot footing with cast-in-steel-shell piles. The abutments will be built on reinforced concrete footings with cast-in-steel-shell piles. Rock slope protection will be placed at each abutment along the channel. Existing piers on a former bridge structure will be removed as well as the piers of the existing southbound structure to below grade. No explosives will be used during bridge dismantling.

The existing roadbed will be reconstructed approximately 1,200 feet to the north and south. In these reconstructed areas, the fill slopes will be extended to the west approximately 10 feet. During construction, a detour for highway traffic will be utilized. Traffic will be reduced to one lane in each direction and detoured onto the northbound structure.

Construction personnel will use an existing road on the northwest side of the bridge and temporary roads graded on the gravel bar to access the work site. An additional temporary easement will be acquired on the northwest side of the bridge for access. On the southwest side, improvements will be made to an existing road to allow an adjacent property owner access. Portions of the gravel bar west of the bridge will be used for access and for a temporary sedimentation basin. An upland area on the northwest side, currently used as a staging area for gravel mining, may be used for activities such as storage of materials, equipment, refueling, and concrete washout activities. A California Highway Patrol weigh station on Highway 101 may also be used as a staging area.

Diversion of the Van Duzen River, at the construction site, will be required during some parts of the construction. A temporary dike will be constructed with existing river gravel to divert flow around the bridge piers. Excavations around the pier footings will need to be de-watered. The pumped water will go into a sedimentation basin, constructed by either digging a hole or building a berm.

Construction activities will be restricted to the areas within the Caltrans right-of-way and the temporary construction easement. The Caltrans right-of-way extends on the east approximately 33 feet upstream of the existing northbound bridge and on the west approximately 80 feet downstream from the existing southbound bridge. The temporary construction easement will extend approximately 230 feet beyond the existing right-of-way (encompassing approximately three acres) on the downstream side of the bridge. After construction, all dikes, berms,

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construction material, debris, temporary roads, and the sedimentation basin will be removed and the contours of the gravel bar restored. Any residual silt or fine material in the sedimentation basin will be removed to a disposal site.

The following measures will be implemented during each construction year to minimize potential impacts to the western snowy plover:

1. Bi-weekly (two times per month) plover surveys will start March 1, when river levels are such that suitable nesting habitat is not inundated, and continue until work activities commence. Surveys will extend from 0.25 mile downstream of the project site to at least 0.25 mile upstream of the project site.
2. After construction activities (including pre-construction on-foot activities) begin on the gravel bar, daily plover surveys will be conducted prior to any work activities. Surveys will extend from 0.25 mile downstream of the project site to at least 0.25 mile upstream of the project site. In addition to this survey data, Caltrans will have same-day access to snowy plover survey data collected on the Leland gravel bar by LBJ Enterprises.
3. Daily plover surveys will continue through July 31, unless nesting plovers or chicks are found within 0.25 mile of the project site. If chicks or nests are present within 0.25 mile, then surveys will continue until all nest have failed, all chicks have fledged from the area, all chicks have died, or all chicks have left the area. Chicks will be considered to have left the area if they are not detected within approximately 0.25 mile of the project site during five consecutive daily surveys. Surveys will not continue after September 30 or cessation of the year's construction activities.
4. If successful plover nests/chicks are detected within 0.25 mile of the edge of the work area footprint, then exclusionary fencing will be installed at the edge of the footprint between the plovers and the work area. The fencing will be installed within 24 hours of detecting the plovers. The fencing will be a silt fence fabric not less than 24 inches tall. The fabric will be keyed-in to the gravel bar so that no gaps greater than 0.5 inch exist below the fabric. The fabric will extend across the open gravel area from the riparian vegetation or channel embankment to the edge of the wetted river channel. If daily surveys detect chicks on the work side of the fence, then the chicks will be herded back onto the side of the fence where they were first detected. The silt fence will remain in place until September 15 or until no chicks are detected within 0.25 mile of the fence.

1.2 Implementation Schedule

During year one, the old bridge will be dismantled and removed and the new abutments and piers will be constructed. During year two, the superstructure of the new bridge will be constructed. Construction activities may occur at night.

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1.3 Conservation Measures

When used in the context of the Act, "conservation measures" represent actions pledged in the project description that the action agency will implement to further the recovery of the species under review. The FHWA is not proposing to include any conservation measures as part of the proposed action.

1.4 Definition of the Action Area

The action area is defined at 50 CFR 402.02 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action". For the purposes of this consultation, the Service recognizes the action area to include the Van Duzen River from 0.25 mile upstream of the project site to the confluence of the Eel River and the Eel River from the confluence with Van Duzen River downstream to the mouth. This analysis area enables the FHWA and the Service to more fully understand the cumulative, interrelated, and interdependent effects of the action within a more appropriate landscape context.

2.0 Status of the Western Snowy Plover

2.1 Background

2.1.1 Legal Status

The Pacific coast population of the western snowy plover was Federally listed as threatened on March 5, 1993 (U.S. Department of the Interior 1993) and critical habitat was designated on December 7, 1999 (U.S. Department of the Interior 1999). In California, the western snowy plover has been classified by the California Department of Fish and Game as a "species of special concern" throughout all of California since 1978 (California Natural Diversity Database 2001).

2.1.2 Taxonomy and Life History

Accounts of the taxonomy, ecology, and reproductive characteristics of the western snowy plover are found in the following recent publications: final rule listing the western snowy plover as threatened (U.S. Department of the Interior 1993); final rule designating critical habitat (U.S. Department of the Interior 1999); the draft recovery plan and appendices (U.S. Fish and Wildlife Service 2001); and *Snowy Plover* (Page, et al. 1995).

2.1.3 Threats

The primary threats that warranted listing of the Pacific coast population include loss of nesting sites due to European beachgrass (*Ammophila arenaria*) encroachment and urban development; disturbance from human recreational activities; and predation exacerbated by human disturbance (U.S. Department of the Interior 1993).

2.2 Current Conditions (Rangewide)

The current conditions of the species incorporates the effects of all past human and natural activities or events that have led to the present-day status of the species (USDI Fish and Wildlife Service and USDC National Marine Fisheries Service 1998). The current western snowy plover

Pacific coast population breeds from Damon Point, Washington, to Bahia Magdalena, Baja California, Mexico and winters mainly in coastal areas from southern Washington to Central America (U.S. Fish and Wildlife Service 2001). The draft recovery plan identifies the following six recovery units for the Pacific Coast population of the western snowy plover: Unit 1 (Washington and Oregon); Unit 2 (Del Norte to Mendocino Counties, California); Unit 3 (San Francisco Bay, California); Unit 4 (Sonoma to Monterey Counties, California); Unit 5 (San Luis Obispo to Ventura Counties, California); and Unit 6 (Los Angeles to San Diego Counties, California) (U.S. Fish and Wildlife Service 2001).

2.2.1 *Breeding*

2.2.1.1 *Habitat*. The Pacific coast population breeds primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries (U.S. Fish and Wildlife Service 2001). Suitable nesting habitat is distributed throughout the listed range.

2.2.1.1.1 *Acreage*. The Service has identified 109 breeding locations that are important for recovery (U.S. Fish and Wildlife Service 2001). Acreage and miles of coastline by recovery unit are estimated as follows: Recovery Unit 1 (135 miles of coastline and 15,098 acres); Recovery Unit 2 (77 miles of coastline and 6,922 acres); Recovery Unit 3 (2 miles of coastline and 2,200 acres); Recovery Unit 4 (51 miles of coastline and 3,870 acres); Recovery Unit 5 (93 miles of coastline and 9,255 acres); and Recovery Unit 6 (30 miles of coastline and 7,112 acres) (U.S. Fish and Wildlife Service 2001).

2.2.1.1.2 *Quality*. The Pacific coast plover population has experienced widespread loss and degradation of nesting habitat at many nesting locations due to development and encroachment of introduced European beachgrass. European beachgrass was introduced to the west coast around 1898 and now occurs from British Columbia to southern California (U.S. Fish and Wildlife Service 2001).

The final rule designating plover critical habitat states that habitat can be adversely affected by activities that: 1) cause or increase human-associated disturbance, such as day and nighttime off-road vehicles use, camping, walking, jogging, equestrian use, kite flying, and driftwood removal; 2) promote unnatural rates or sources of predation, such as presence of predator perches and/or garbage; 3) promote the invasion of nonnative vegetation; 4) maintain or operate salt ponds; 5) facilitate dredge spoil disposal; 6) control shoreline erosion; and 6) produce contamination events (U.S. Department of the Interior 1999).

2.2.1.2 *Numbers*. The draft recovery plan provides an estimate of approximately 2,000 snowy plovers breeding along the U.S. Pacific coast (Table 1). This estimate is based on window surveys, breeding surveys, and data used in the population viability analysis. Window surveys are a one-time pass of a single surveyor or team of surveyors through potential snowy plover nesting habitat during May or June. In 2002, the rangewide breeding season window survey

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counted 1,465 adult birds (Table 2). About 50 percent of the birds were located within San Luis Obispo to Ventura Counties, California.

Along the California coast the size of the western snowy plover population was first estimated at 1,593 adults, based on window surveys completed during the period 1977 to 1980 (Table 3). Subsequent window surveys have all documented a decline in the number of adults plovers counted during the breeding season window survey. The observed decline has ranged from a low of 976 birds in 2000 to a high of 1,593 birds in the 1977/1980 survey (Table 3). In 2002, 1,379 birds were counted (Point Reyes Bird Observatory 2002 unpublished data).

2.2.1.3 Distribution. The current Pacific coast breeding population ranges from Damon Point, Washington, to Bahia Magdalena, Baja California, Mexico (U.S. Fish and Wildlife Service 2001). Historical records indicate that nesting plovers were once more widely distributed throughout the listed range. In Washington, plovers formerly nested at five locations; compared to only three current locations (U.S. Fish and Wildlife Service 2001). In Oregon, plovers historically nested at 29 sites, compared to nine recent locations (U.S. Fish and Wildlife Service 2001). In California, plovers were known to nest at 53 general nesting areas prior to 1970 (Page and Stenzel 1981); as of 1991, no evidence of breeding birds had been found at 33 of those 53 areas (Page, et al. 1991). During the 2002 window surveys in California, plovers were recorded at 48 sites during the breeding season (Point Reyes Bird Observatory, 2002 unpublished data). Plovers have disappeared from significant parts of the coastal California breeding range including locations in San Diego, Orange, Los Angeles, Ventura, Santa Barbara, Santa Cruz, San Mateo, Sonoma, Mendocino, Humboldt, and Del Norte counties (U.S. Fish and Wildlife Service 2001).

The U.S. Fish and Wildlife Service (2001) identifies the following gaps in the breeding distribution of the plover: Leadbetter Point/Gunpowder Sands, Washington south to Bayocean Spit, Oregon; Bayocean Spit south to Heceta Head, Oregon; Bandon State Park, Oregon south to Humboldt County, California; Humboldt County south to MacKerricher State Park, California; MacKerricher State Park south to Salmon Creek or Marin County, California; and Point Sur, California south to San Carpoforo Creek, California.

2.2.1.4 Reproduction. The fledging success of snowy plovers (percentage of hatched young that reach flying age) varies greatly by location and year (U.S. Fish and Wildlife Service 2001). The draft recovery plan uses the annual number of young fledged per adult male to assess reproductive success. Reproductive success for various sites was as follows: 1) Monterey Bay without predator control and exclosures, males averaged 0.85 fledglings annually (1984 to 1991); with predator control and exclosures, males averaged 1.11 fledglings (1992 to 1997); 2) San Diego County with some indirect management activities, males averaged 0.92 fledged young (1995 to 1997); and 3) Oregon with intensive management, males averaged 1.04 fledglings (1993 to 1997) (Nur, et al. 1999).

2.2.2 Wintering

2.2.2.1 Habitat. Wintering (winter is defined as November 1 through February) plovers are found on many beaches used for nesting and some beaches where they do not nest (U.S. Fish and Wildlife Service 2001). In California, the majority of wintering plovers utilize sand spits and dune-backed beaches (U.S. Fish and Wildlife Service 2001). Suitable wintering habitat is distributed throughout the listed range of the snowy plover.

2.2.2.1.1 Acreage. The Service has identified 143 wintering locations that are important for recovery (U.S. Fish and Wildlife Service 2001). We also estimated the following acreage and miles of coast line for each of these locations: Recovery Unit 1 (91 miles of coastline and 10,446 acres); Recovery Unit 2 (80 miles of coastline and 8,336 acres); Recovery Unit 3 (2 miles of coastline and 2,200 acres); Recovery Unit 4 (64 miles of coastline and 4,654 acres); Recovery Unit 5 (107 miles of coastline and 9,785 acres); and Recovery Unit 6 (79 miles of coastline and 9,931 acres) (U.S. Fish and Wildlife Service 2001).

2.2.2.1.2 Quality. The Pacific coast plover population has experienced widespread loss and degradation of wintering habitat due to human disturbance, development, and encroachment of introduced European beachgrass.

2.2.2.2 Numbers. Fewer than 40 plovers winter on the Washington coast, fewer than 100 winter on the Oregon coast, and more than 2,500 winter along the California coast (U.S. Fish and Wildlife Service 2001). In 1986, the estimated winter population for the California and Oregon coast was 3,100 plovers (Page, et al. 1986).

2.2.2.3 Distribution. Plovers winter at two locations on the Washington coast, at nine locations on the Oregon coast, and at various locations along the California coast (U.S. Fish and Wildlife Service 2001). The majority of wintering birds in California are found from Sonoma County southward.

2.2.3 Conservation Needs/Strategy

The draft western snowy plover recovery plan provides a strategy for recovery of the listed population. Recovery objectives in the draft recovery plan (U.S. Fish and Wildlife Service 2001) include: (1) achieving well-distributed increases in numbers and productivity of breeding adult birds, and (2) providing for long-term protection of breeding and wintering plovers and their habitat.

The draft recovery plan states that delisting will be considered when the following criteria have been met: (1) maintain for 10 years an average of 3,000 breeding adults distributed among 6 recovery units as follows: Washington and Oregon, 250 breeding adults; Del Norte to Mendocino Counties, California, 150 breeding adults; San Francisco Bay, California, 500 breeding adults; Sonoma to Monterey Counties, 400 breeding adults; San Luis Obispo to Ventura Counties, California, 1,200 breeding adults; and Los Angeles to San Diego Counties, California, 500 breeding adults; (2) maintain a 5-year average productivity of at least 1.0 fledged chick per male

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in each recovery unit in the last 5 years prior to delisting; and (3) have in place participation plans among cooperating agencies, landowners, and conservation organizations to assure protection and management of breeding, wintering, and migration areas listed in Appendix B of the draft plan to maintain the subpopulation sizes and average productivity specified in criteria 1 and 2 above.

Appendix B of the draft recovery plan identifies specific breeding and wintering locations important for recovery (U.S. Fish and Wildlife Service 2001). The draft plan identifies management goals for the number of adults at each of the breeding sites and recommends that managers consistently aim to achieve these goals annually. The management goal breeding numbers represent population targets that, in the view of the snowy plover recovery team's technical subteam, can be achieved under a very intensive management scheme. These numbers are about 15 percent higher than the recovery criteria subpopulation sizes, but lower than potential carrying capacity.

The Service considers the Pacific coast plover population to be a single management entity (U.S. Fish and Wildlife Service 2001). The recovery team recommended that no state, geographic region, or subpopulation be considered for delisting separately from the others. To consider delisting the population the recovery criteria will need to be achieved in each recovery unit.

A population viability analysis was conducted to aid the recovery team in developing recovery criteria for the draft recovery plan (Nur, et al. 1999). The analysis makes the following conclusions. "Under status quo scenarios, even with intensive management in some areas, the population is almost certain to decline. Without question, ceasing current management efforts (area closures, predator exclosures, and predator control) would be disastrous for the Pacific coast population." "Recovery is plausible. It will require, however, short-term intensive management and long-term commitments to maintaining gains." These conclusions emphasize the immediate need for intensive management.

The role of Federal agencies in achieving recovery of the plover is described in the draft recovery plan as follows. Lands managed by Federal agencies are extremely important to the conservation of the snowy plover. Under section 7(a)(1) of the Act, Federal agencies are required to actively promote the conservation of listed species. The snowy plover cannot be recovered simply through general habitat protection or compliance with required section 7 consultations. The snowy plover must be actively monitored and managed for the full purposes of recovery or its population size will continue to decline. Federal agencies alone cannot assure recovery of the snowy plover, but they need to significantly increase their current monitoring and management efforts now to assure survival and recovery of this species. Federal agencies should take the lead role in conserving this species and serve as examples to non-Federal landowners.

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2.3 Current Conditions (Recovery Unit 2 - Del Norte, Humboldt, and Mendocino Counties)

2.3.1 *Breeding*

2.3.1.1 Habitat.

2.3.1.1.1 *Acreage*. The draft plan identifies 12 breeding locations in Recovery Unit 2 that are important for recovery (Table 4). Nesting has only been documented at the following five locations since 1999 (LeValley 1999; Mad River Biologists 2000; Colwell, et al. 2001): Clam Beach/Little River; South Spit; Eel River Wildlife Area; Eel River gravel bars, and MacKerricher State Park. Since 2000, nesting has only occurred at three of these sites (Clam Beach/Little River, Eel River Wildlife Area; and Eel River gravel bars).

2.3.1.1.2 *Quality*. The three current nesting areas in Recovery Unit 2, Clam Beach/Little River, Eel River Wildlife Area, and the Eel River gravel bars all allow vehicles in or adjacent to nesting habitat. The Clam Beach/Little River area is heavily used by recreationists. On Clam Beach/Little River, street-licensed 4-wheel drive vehicles are allowed to drive on the waveslope and vehicle play is prohibited. The southern portion of this beach is closed to recreational vehicles during the nesting season; however, permitted commercial fishermen are allowed to drive vehicles during the day and night. Tire tracks above the waveslope showing evidence of vehicle play are frequently observed on this beach. Vehicle tracks indicating regular driving in tight circular tracks have been noted in areas where adults tend broods (Colwell, et al. 2001). It is not unusual after a holiday weekend for the entire area on the northern portion of the beach from the waterline to the foredunes to be covered by vehicle tracks. Ruts created by vehicle tracks make it difficult for plover chicks to avoid oncoming vehicles, horses, unleashed dogs, predators, or other hazards. The Eel River Wildlife Area currently receives less foot traffic and/or unleashed dogs than Clam Beach/Little River, but has significant vehicular traffic by woodcutters and fishermen (Mad River Biologists 2000). No restrictions on recreational vehicle use or the types of vehicles allowed in the nesting areas exist for the Eel River gravel bars. Vehicle use related to gravel mining along the Eel River is governed by permits from the California Coastal Commission and the U.S. Army Corps of Engineers.

2.3.1.2 *Numbers*. In 2002, the estimated number of breeding plovers in Humboldt County was 63 (30 females and 33 males) (Colwell, et al. 2002). In 2001, the estimated number of breeding adult plovers was 60 birds (29 females and 31 males) (Colwell, et al. 2001). The 2002 estimate is 58 percent higher than the 2000 estimate of 40 birds (Mad River Biologists 2001a). The 2002 population represents 39 percent of the draft recovery plan management goal of 162 breeding adults in Humboldt County (Table 1) and 32 percent of the management goal for Recovery Unit 2.

Since 1977, window surveys in Recovery Unit 2 have documented birds during the breeding season at the following 12 locations: Del Norte County - Smith River mouth and Lake Earl/Lake Talawa; Humboldt County - Big Lagoon, Clam Beach/Little River, Mad River mouth, Elk River spit, north spit of Humboldt Bay, South Spit, Eel River gravel bars, Eel River Wildlife Area, and south spit of Eel River; and Mendocino County - MacKerricher Beach (Table 5). Clam Beach/Little River is the only site in Humboldt County where breeding birds were sighted during

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every survey year. Since at least 1991, breeding birds have not been present during the window survey period in the following five locations: Lake Earl; Big Lagoon; north spit of Humboldt Bay; Elk River spit; and the South Spit. Since 1998, breeding birds have consistently only occurred at three locations (Clam Beach/Little River; Eel River Wildlife Area; and the Eel River gravel bars).

Based on the 2002 window survey, breeding plovers were only sighted on 4 (30 percent) of the 12 breeding sites in Recovery Unit 2 identified as important for recovery (Table 6). The four sites are Clam Beach/Little River; Eel River Wildlife Area; Eel River gravel bars; and the south spit of the Eel River. The 2002 number of breeding birds at only one (Clam Beach/Little River) of the 12 sites met or exceeded the draft recovery plan's management goal (Colwell, et al. 2002). In summary, the number of recent plover breeding season locations has declined 67 percent since the late 1970's.

2.3.1.3 Distribution. Since 1977, plovers have nested at only 12 locations in Recovery Unit 2. Since 1999, only the following five locations in Recovery Unit 2 have had documented nesting (LeValley 1999; Mad River Biologists 2000; Colwell, et al. 2001): Clam Beach/Little River; South Spit; Eel River Wildlife Area; Eel River gravel bars, and MacKerricher State Park. No documented nesting has occurred at the South Spit or MacKerricher State Park since 1999. The number of nesting locations in 1999 has declined 58 percent since 1977 and the number of locations in 2001 and 2002 declined 75 percent. No nesting has been documented in Del Norte County, north spit of Humboldt Bay, or Elk River spit since 1977; Big Lagoon since 1989; Centerville Beach since 1994; or Mad River since 1997. In summary, the number of recent nesting locations declined 75 percent since the late 1970's.

2.3.1.4 Reproduction. In 2001 and 2002, males on beaches in Recovery Unit 2 fledged the following number of chicks: Clam Beach/Little River in 2001 (1.4 ± 0.5 chicks) and in 2002 (0.29 ± 0.76 chicks); and at the Eel River Wildlife Area in 2001 (1.2 ± 1.3 chicks) and in 2002 (0.25 ± 0.50 chicks) (Colwell, et al. 2001; Colwell, et al. 2002). The 2-year average productivity for beaches in Recovery Unit 2 was well below the recovery plan targets for an increasing or stable population (Clam Beach/Little River, 0.85 chicks and Eel River Wildlife Area 0.73 chicks). Males nesting along the Eel River fledged the following number of chicks: 2001 (1.6 ± 1.6 chicks) and in 2002 (1.46 ± 1.13 chicks).

In 2002, a total of 75 chicks hatched in Humboldt County and 23 survived to 28 days (Colwell, et al. 2002). In 2002, nests on Clam Beach/Little River survived for a shorter period of time than on the other two nesting areas in the recovery unit (Eel River Wildlife Area and Eel River gravel bars) (Colwell, et al. 2002).

In 2002, the number of breeding males (33) in Recovery Unit 2 was well below the recovery target of 75 males (population target of 150 and assuming a 1:1 sex ratio). Therefore, in addition to producing few chicks per male, the recovery unit had a low number of males. Increasing the

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current population will require relatively high productivity and adult survival. To achieve this objective, intensive management of nesting areas will be required.

2.3.2 *Wintering*

2.3.2.1 *Habitat.*

2.3.2.1.1 *Acreage.* The draft plan identifies 14 wintering locations in Recovery Unit 2 that are important for recovery (Table 7). Potential winter habitat is distributed in Recovery Unit 2 as follows: 12 miles of coastline (1,700 acres) in Del Norte County; 45 miles of coastline (5,450 acres) in Humboldt County; and 11 miles of coastline (1,170 acres) in Mendocino County (U.S. Fish and Wildlife Service 2001).

2.3.2.1.2 *Quality.* Habitat quality at wintering locations has been lost or degraded due to human disturbance and European beachgrass.

2.3.2.2 *Numbers.* Between 1979 and 1985, 89 wintering plovers were recorded in Recovery Unit 2, based on the median of the maximum number of plovers counted (Table 7) (Page, et al. 1986). Winter window surveys in Recovery Unit 2 recorded 155 adult plovers in 2001 and 123 plovers in 2002 (Table 7).

2.3.2.3 *Distribution.* The draft recovery plan identifies 14 wintering locations in Recovery Unit 2 that are important for recovery (Table 7). During the 2001 winter window surveys, adult plovers were sighted at only 6 of the 14 winter sites (43 percent). During the 2002 winter window surveys, plovers were sighted at only 4 of the 14 winter sites (29 percent).

2.3.3 *Conservation Needs/Strategy*

The draft plan identifies management goals for the number of breeding adults in Recovery Unit 2 (U.S. Fish and Wildlife Service 2001, Appendix B, Table B-1) (Table 1). Management goals are about 15 percent higher than the recovery criteria subpopulation sizes. The overall management goal for Recovery Unit 2 is 200 breeding adults, this includes 162 breeding adults in Humboldt County.

The draft recovery plan describes the following recovery task specific to important breeding and wintering locations in Recovery Unit 2:

- (Task 3.1.3) "Provide intensive management and protection of snowy plovers on all Federal and State lands." Federal and State land managers should protect and intensively manage all breeding and wintering locations listed in Appendix B of the draft recovery plan.
- (Task 3.1.4) "Develop and implement management plans for all Federal and State lands." Federal and State land managers should develop and implement management plans for all breeding and wintering locations listed in Appendix B. These plans

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should address threats to plovers and adopt management measures for habitat protection and enhancement.

(Task 3.1.10) "Ensure that section 10(a)(1)(B) and section 7(a)(2) permits contribute to Pacific coast western snowy plover conservation. When evaluating impacts to plovers under section 7 we should consider each of the breeding and wintering locations listed in Appendix B as important for recovery and should refer to the management goal breeding numbers and determine how the proposed project will affect those goals. No short- or long-term losses to plover habitat should be allowed.

3.0 Environmental Baseline (in the Action Area)

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed State or Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

3.1 Breeding

In California, pre-nesting bonds and courtship activities are observed as early as mid-February (U.S. Fish and Wildlife Service 2001). The earliest nest initiation dates in Humboldt County have been as follows: 2001 (March 25) and 2002 (March 19) (Colwell, et al. 2002). Plovers have been observed along the Eel River from early April until early September (Mad River Biologists 2002). Plovers were first documented nesting on the gravel bars along the Eel River in 1996 (Tuttle, et al. 1997).

3.1.1 *Habitat.*

3.1.1.1 Acreage. The Service has identified the Eel River from the mouth to the Van Duzen River as a breeding area that is important for the recovery of the snowy plover (U.S. Fish and Wildlife Service 2001, Appendix B). In 2002, the amount of potentially suitable nesting habitat along the Eel River was estimated to be approximately 806 acres (Mad River Biologists 2002). The amount of available gravel bar habitat varies each year depending on river flow levels (Mad River Biologists 2002).

3.1.1.2 Quality. The gravel bars include substrates ranging from pea-sized gravel to bowling ball-sized cobble mixed with sand and/or silt (Mad River Biologists 2000). From 1996-2000, approximately 12 percent (range 11-15 percent) of the potentially suitable habitat along the Eel River was mined for gravel in any one year (Mad River Biologists 2002). Generally, plovers along the Eel River select low gradient, topographically uniform sites for nesting (Mad River Biologists 2002). Plovers have been documented nesting in locations where gravel mining occurred in the previous year (Mad River Biologists 2001b).

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Depending on public access, significant disturbance of the nesting areas along the Eel River may occur due to four-wheel drive vehicles, motorcycles, wood collecting, target shooting, and homeless encampments (Mad River Biologists 2000). Little or no enforcement of these activities exists (Mad River Biologists 2000).

3.1.2 *Numbers*

Plover numbers are difficult to compare from year-to-year because of variations in survey efforts. Annual survey efforts in the action area have ranged from one-day window surveys to bi-monthly, weekly, or daily surveys. The window survey results are not comparable to the more frequent surveys efforts; therefore, these results are discussed separately. Breeding season window surveys in 1991 and 1995 did not record plovers on the Eel River (Point Reyes Bird Observatory 2000 and 2002 unpublished reports). However, 22 and 26 adult plovers were recorded during window surveys along the Eel River in 2000 and 2002, respectively.

The Eel River gravel bars have been surveyed during the breeding season daily to weekly since 1999. The peak number of adults observed during these surveys were 5 in 1999 and 20 in 2000 (Mad River Biologists 2001a). An estimated 39 adults and 34 adults were observed along the Eel River gravel bars in 2001 and 2002, respectively (Colwell, et al. 2001 and Colwell 2002). The observed 34 breeding birds in 2002 represent 85 percent of the draft recovery plan's population target of 40 breeding adults for the Eel River. It also represents 54 percent of the total number of breeding birds (63) in Humboldt County during 2002.

3.1.3 *Distribution*

Plovers occur on virtually all gravel bars with suitable habitat along the Eel River from Cock Robin Island upstream to the mouth of the Van Duzen River (Mad River Biologists 2002). The majority of the breeding activity has been near Fernbridge (Mad River Biologists 2002). Broods are typically observed at or near the edge of the river, presumably where prey items are most available (Mad River Biologists 2002).

In 2002, two western snowy plovers were detected within the Leland Rock gravel bar site along the Eel River at the confluence with the Van Duzen River, but no nests have yet been recorded at this site (Mad River Biologists 2002). These detections were 0.25 to 0.5 mile upstream from the nearest known nest site (Mad River Biologists 2002). To date, no plovers have been detected upstream of the confluence of the Eel and Van Duzen Rivers.

3.1.4 *Reproduction*

Nesting was documented on the Eel River gravel bars from 1999 to 2002. Surveys detected the following reproductive effort on the Eel River gravel bars: 1999, 6 nests; 33 percent of which hatched (LeValley 1999); 2000, 18 nests; 78 percent of which hatched (Mad River Biologists 2001a); 2001, 39 nests; 64 percent of which hatched (Colwell, et al. 2001); and 2002, 30 nests; 53 percent of which hatched (Colwell, et al. 2002).

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In 2001, males breeding on the Eel River gravel bars fledged 33 chicks (1.6 ± 1.6 chicks per male (Colwell, et al. 2001). In 2002, 20 chick successfully fledged (1.46 ± 1.13 chicks per male) (Colwell, et al. 2002).

3.2 Wintering

We assume that snowy plovers leave the gravel bars after the last broods fledge (Mad River Biologists 2002). To date, no plovers have been documented wintering in the action area.

4.0 Effects of the Action

This section presents an analysis of the direct and indirect effects of the proposed action, including interrelated and interdependent actions, on the western snowy plover. The effects of the proposed replacement of the southbound Van Duzen Bridge will be evaluated with respect to the numbers, distribution, and reproduction of western snowy plovers in the action area.

4.1 Scientific Basis for Evaluating Potential Effects on the Western Snowy Plover

The proposed project has the potential to result in adverse effects to the western snowy plover through habitat modification, harassment, and direct mortality. These mechanisms are discussed in more detail below.

4.1.1 *Habitat Modification*

Proposed bridge construction activities, such as grading, riprapping, or deposition of spoil material, will physically modify suitable western snowy plover nesting habitat. Construction activities will increase human-associated disturbance which may reduce the functional suitability of nesting, foraging, and roosting areas (U.S. Department of Interior 1999). Degradation of habitat may also occur as a result of activities that promote unnatural rates of predation, such as human-generated litter (Fish and Wildlife Service 1999).

4.1.2 *Harassment*

The proposed activities will require the use of personnel, construction equipment, and vehicles, all of which introduce high levels of noise and activity into the environment. Disturbance from human presence or activities during the breeding season may potentially disrupt the species' essential breeding behaviors by causing: 1) abandonment of the breeding effort by failure to initiate nesting or to complete incubation; 2) separation of adults from their broods; and 3) adults and broods to stay away from favored foraging areas. The potential effects of disturbance will depend on the frequency, timing, location, and intensity of activities.

4.1.3 *Injury or Mortality*

The draft recovery plan (U.S. Fish and Wildlife Service 2001) summarizes potential ways activities may cause mortality of plovers. Pedestrians and vehicles may crush highly cryptic eggs or chicks and flush plovers off their nests. Separation of plover adults from their nests and broods can cause mortality through exposure of eggs or chicks to heat, cold, blowing sand, and/or

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predators. Repeated disturbances may cause plovers to nest in marginal habitat where their chances of reproductive success are reduced.

Vehicle traffic presents a very real threat to the survival of plover eggs and chicks. Circumstantial evidence indicates that vehicles crushed nests at Clam Beach/Little River in 1998 and 2002, although that has not been confirmed. A vehicle crushed an active nest on the Eel River gravel bar in 2002 (U.S. Fish and Wildlife Service unpublished data). Vehicles crushed adult plovers at Vandenberg Air Force Base and Oceano Dunes State Vehicular Recreation Area in 1994 and 1998, respectively. A snowy plover chick was stepped on during the 1998 nesting season by a pedestrian at Oceano Dunes State Vehicular Recreation Area, in a portion of the park closed to vehicle use (U.S. Fish and Wildlife Service unpublished data).

4.2 Analysis of Project Effects

4.2.1 *Likelihood of Species Presence*

The Service believes plovers may be present in the vicinity of the project site for the following reasons: 1) potentially suitable nesting habitat exists at the Van Duzen River Bridge site; 2) in May 2002, two snowy plovers were detected at the confluence of the Van Duzen and Eel rivers approximately 0.25 mile from the bridge site; 3) plovers have nested at the Hawk Bar site on the Eel River approximately 0.25 to 0.50 mile downstream from the confluence with the Van Duzen River; and 4) as many as 39 breeding plovers have been documented along the Eel River.

Habitat suitability may fluctuate at the project site and along the Eel River during the construction period, since habitat quality and availability can change annually. In high water years, many gravel bars may still be submerged early in the nesting season. In low water years, more gravel bars will be exposed; however, vegetation may become established earlier in the year and reduce the amount of available habitat (Mad River Biologists 2002).

4.2.2 *Habitat Modification*

Modification of suitable plover nesting habitat will occur at the project site during each of the two consecutive years of construction. Construction of facilities on the gravel bar, such as temporary roads, sedimentation basin, dikes, and berms, will physically modify suitable nesting habitat. As a result of construction activities, the topography of the natural gravel bar, adjacent to the bridge site, will be altered. An estimated two acres of gravel bar will be modified during each year of construction. At completion of the project, all dikes, berms, construction material, debris, temporary roads, and the sedimentation basin will be removed and the contours of the gravel bar restored to natural elevations. We do not anticipate that snowy plovers will be adversely affected due to habitat modification for the following reasons: 1) the topography of the gravel bar will be restored to its natural contours; 2) nesting habitat will be altered only during two nesting seasons; 3) plovers along the Eel River have nested successfully in areas mined for gravel in the previous year (Mad River Biologists 2001b); 4) the two acres of habitat altered during two breeding seasons represent only 0.2 percent of the 806 acres of suitable nesting habitat along the Eel River; 5) during all but a low water year, it is expected that water levels during the winter will redeposit gravel in the modified gravel bar; and 5) no long-term significant habitat impacts are anticipated.

Construction activities at the bridge site may attract potential plover predators, such as corvids and gulls, in the suitable nesting area. This is especially true if deliberate feeding of potential predators occurs or if food scraps or trash are left on-site. These activities can result in adverse affects to plovers by encourage greater numbers of predators and increasing the plovers' risk of predation.

4.2.3 *Harassment*

Project-generated noise and activities including the presence of workers and use of equipment, such as pile drivers, vibratory hammers, jack hammers, hydraulic hammers, cranes, and vehicles, may disturb adults and/or chicks within 0.25 mile of the bridge site. Repeated disturbances can interrupt brooding, incubating, and foraging of adults and cause chicks to be separated from their parents.

The project includes measures to reduce impacts. If chicks are located within 0.25 mile of the edge of the work area, a fence will be constructed to prevent plovers from utilizing the work area. If chicks are located on the work side of the fence, they will be herded back to the other side of the fence. This measure will help prevent direct injury or mortality, but will result in disturbance to chicks by hazing. Adult plovers and chicks within 0.25 mile of the work area will be subject to disturbance due to project-generated noise and activities within the work area. As a result of the potential hazing and construction activities, we anticipate that the level of activity associated with the proposed construction will likely result in adverse affects due to harassment to all plover adults or chicks in or within 0.25 mile of the project site during the two-year construction period.

Vehicle traffic on the existing northbound steel girder bridge-generates relatively high levels of noise, while noise levels under the existing southbound concrete box girder bridge are relatively quiet. The proposed project will replace the steel girder bridge with a concrete box girder bridge. We anticipated that after construction of the new bridge, noise levels on the gravel bar under the bridge will be generally less than existing background levels.

4.2.4 *Injury or Mortality*

Mortality of adults, chicks, and eggs may occur as a result of collisions with construction equipment and/or workers. The cryptic coloring of chicks and their habit of crouching in depressions make them especially vulnerable to vehicles. Construction activities will be restricted to the Caltrans right-of-way area and the temporary construction easement area. Project-related injury or mortality of western snowy plovers (adults, chicks, and eggs) is not expected to occur outside of the right-of-way and easement areas because all construction activities will be confined to these areas.

Within the construction areas the likelihood of injury or mortality will be minimized by the following protective measures in the project description: 1) daily plover surveys will be conducted within 0.25 mile of the project during all construction activities; 2) if successful nests/chicks are detected within 0.25 mile of the edge of the work area footprint, then a fence will

be constructed to exclude the adults and chicks from the work area; and 3) if chicks are detected on the work side of the fence, they will be herded to the other side of the fence.

Plover eggs in the gravel bar environment are especially difficult to detect. It is possible that chicks from an undetected nest or adults may enter the construction area prior to installation of the exclusionary fence. We believe that any nest, chicks, or adults in the right-of-way and easement areas will be highly vulnerable to injury or mortality. If the fence is not installed until after chicks are detected, then we believe there will be a risk of chicks entering the work area prior to detection and of undetected nest occurring within the work area. However, if the fence is installed when adult plovers are first detected within a 0.25 mile of the work area, this risk will be minimized. It is unlikely that more than one nest would be established within the construction area during the two-year construction period for the following reasons: 1) to date, no nesting plovers have been documented in the project site; 2) the 2002 plover sighting 0.25 mile downstream from the project site represents the most upstream known sighting of plovers along the Eel River (Mad River Biologists 2002); 3) only two plovers were observed during the 2002 sighting 0.25 mile from the project site; and 3) the suitable habitat within the construction area represents a small percentage of the available habitat along the Eel River (0.2 percent of the 806 acres of suitable nesting habitat). The typical plover clutch size is three. Therefore, if the fence is installed when adult plovers are first detected within 0.25 mile of the work area, we expect that three eggs associated with one nest could be lost either directly or indirectly due to construction activities.

4.2.5 *Effects on Numbers*

The proposed action could affect the number of snowy plovers by disturbing reproductive efforts and by injury or mortality. The Eel River is identified in the draft recovery plan as a breeding location important for recovery. Current plover use (34 breeding adults in 2002) along the Eel River is only slightly below the draft recovery plan's population target of 40 breeding adults for recovery. The proposed two-year construction activities will not likely prevent achievement of the draft recovery plan's population target for the following reasons: 1) the project site is located upstream of the area where all the documented nesting has occurred along the Eel River; 2) in 2002, only two plovers were documented near the project site (approximately 0.25 mile downstream); 3) the 2002 plover sighting is the farthest upstream record of plovers, to date; and 4) during the two-year construction period, we anticipate, at most, harm of one nest.

4.2.6 *Effects on Distribution*

The draft recovery plan identifies 12 breeding sites in Recovery Unit 2 that are important for recovery (Table 1). For the past three years, nesting has only occurred at three of these locations (Clam Beach/Little River, Eel River Wildlife Area, and Eel River gravel bars). The proposed construction activities will reduce the suitability of two acres of habitat during two breeding seasons. The natural contours of the gravel bar will be restored at completion of the project. The two acres of altered habitat represent 0.2 percent of the suitable nesting habitat along the Eel River and are located 0.25 mile upstream of the nearest known plover sighting. Due to the short-term nature of the habitat impacts and the project's location on the edge of the currently utilized

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nesting areas, it is unlikely that the project will influence the long-term distribution of breeding plovers along the Eel River.

4.2.7 *Effects on Reproduction*

In 2002, 47 percent of the nests (14 of 30) along the Eel River did not successfully hatch and 50 percent (20 of 40) of the hatched chicks failed to fledge (Colwell, et al. 2002). The cause of most of the clutch failures is unknown; however, predation is suspected in most cases and vehicles in three (Colwell, et al. 2002).

In 2002, 87 percent (20 of 23) of the chicks fledged in Humboldt County came from nests on the Eel River gravel bars (Colwell, et al. 2002). Males on the Eel River fledged 1.46 ± 1.13 chicks in 2002 (Colwell, et al. 2002) and 1.6 ± 1.6 chicks in 2001 (Colwell, et al. 2001). This represents a 2-year average productivity of 1.5 fledged chicks per male along the Eel River. The draft recovery plan indicates that a productivity of 1.2 or more chicks fledged per male should increase population size at a moderate rate. The delisting criteria is to maintain a 5-year average productivity of at least 1.0 fledged chicks per male. This level of productivity should result in a stable population.

We do not anticipate that the potential loss of one nest (three eggs) during the two years of construction will hinder the long-term attainment of the draft recovery plan's target for productivity. Since plovers readily renest after loss of their eggs, it is possible that if a nest is destroyed the adults may still be successful at fledging chicks that year. The 2-year average productivity for male plovers along the Eel River, during 2001 and 2002, was 1.5 fledged chicks. If one additional nest had failed in one of these two years the average productivity level would still have been above the level (1.0 fledged chicks per male) necessary to maintain a stable population. Therefore, assuming that the productivity during the two-year construction period is similar to the rates in 2001 and 2002, the potential loss of one additional nest is not expected to hinder the long-term attainment of the plan's target for productivity on the Eel River.

4.2.5 *Summary*

Snowy plovers are currently known to nest along the Eel River; however, no nesting has been documented within 0.25 mile of the project site. The proposed construction activities may harass plover adults and chicks within 0.25 mile of the project during two breeding seasons. Plovers will not be adversely affected due to habitat modification, since the topography of the gravel bar will be restored after construction and plovers are known to have successfully nested in areas mined for gravel the previous year. During the two-year construction period, a maximum of three eggs associated with one nest may be harmed. We do not expect the proposed project to effect any of the following: 1) attainment of the draft recovery plan's population target for the Eel River; 2) long-term distribution of breeding plovers along the Eel River; or 3) achievement of the draft recovery plan's target for productivity. Given that all known nesting of plovers along the Eel River has occurred downstream from the project site, the proposed project is not expected to impede recovery of plovers in this important breeding location.

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4.2.6 *Interrelated and Interdependent Activities*

Regulations implementing the Act require the Service to consider the effect of activities which are interrelated and interdependent to the proposed action (50 CFR 402.02). The Act defines interrelated activities as those which are part of a larger action and depend upon the larger action for their justification, and interdependent activities as those projects which have no independent utility apart from the action that is under consideration. No interrelated or interdependent activities are associated with this project.

5.0 Cumulative Effects

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The majority of the suitable nesting habitat along the Eel River is under private ownership; however, gravel mining and associated vehicle use along the Eel River is permitted through the U.S. Army Corps of Engineers.

6.0 Conclusion

After reviewing the current status of the western snowy plover, the environmental baseline for the action area, and the effects of the proposed replacement of the southbound Van Duzen Bridge in Humboldt County, and the cumulative effects, it is the Service's biological opinion that the bridge replacement, as proposed, is not likely to jeopardize the continued existence of the western snowy plover. Critical habitat for the western snowy plover has been designated; however, this action does not affect any designated critical habitat. No destruction or adverse modification of that critical habitat is anticipated.

The Service reached this conclusion based on the following factors:

1. Project measures will minimize the likelihood of injury, mortality, or harassment of snowy plovers.
2. Habitat alterations will be short-term (two nesting seasons) and the topography of the gravel bars will be restored to the pre-project conditions.
3. The relatively small number of plovers expected to occur and be affected within the vicinity of the project during the construction period.
4. Attainment of the draft recovery plan's management goals for the Eel River and Recovery Unit 2 will not be compromised by the proposed project.

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5. Potential long-term decrease in noise levels in suitable nesting habitat from vehicle traffic on the bridge, as a result of replacement of the existing steel girder bridge with a concrete box girder bridge.

INCIDENTAL TAKE STATEMENT

1.0 Introduction

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under that Act provided that such taking is in compliance with this Incidental Take Statement.

The measure described below is non-discretionary, and must be undertaken by the FHWA so that it becomes a binding condition of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If the FHWA (1) fail to assume and implement the terms and conditions or (2) fail to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the FHWA must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR §402.12(I)(3)].

2.0 Amount or Extent of Incidental Take

Western snowy plovers are small, cryptically-colored birds that are difficult to detect. The Service anticipates four adult western snowy plovers, six chicks, and three eggs could be taken as a result of this proposed action. The incidental take is expected to be in the form of harm of one plover nest containing three eggs as a result of construction activities within the Caltrans right-of-way. This amount of take (one nest containing three eggs) is the total amount of take due to harm for the two-year construction period. In addition, the Service anticipates take in the form of harassment of two adult plovers and three chicks in or within 0.25 mile of the project site during

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each of the two years of construction. We based this anticipated amount of take on past surveys of annual breeding plovers on the Eel River.

3.0 Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the western snowy plover or destruction or adverse modification of critical habitat.

4.0 Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measure is necessary or appropriate to minimize impacts of incidental take of western snowy plovers:

Minimize construction related impacts to adult plovers and their nests, chicks, and eggs.

5.0 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measure described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. To protect nests, the FHWA will contact Ray Bosch of the Service's Arcata Fish and Wildlife Office immediately if a nest is detected within the work area. If the Service determines that construction of a nest enclosure would reduce the likelihood of mortality of eggs or chicks, then FHWA or their non-Federal representative will facilitate timely construction of the nest enclosure. Nest enclosures will only be installed by qualified biologists with an appropriate recovery permit (section 10(a)(1)(A) permit) from the Service.
Mad River Biologists.
2. If *adult plovers or chicks* are detected in or within 0.25 mile of the edge of the work area footprint, then exclusionary fencing will be installed at the edge of the footprint between the plovers and the work area. The fencing will be installed within 24 hours of detecting the plovers. The fencing will be a silt fence fabric not less than 24 inches tall. The fabric will be keyed-in to the gravel bar so that no gaps greater than 0.5 inch exist below the fabric. The fabric will extend across the open gravel area from the riparian vegetation or channel embankment to the edge of the wetted river channel. The exclusionary fencing will remain in place until September 15 or until no plovers are detected within 0.25 mile of the fence.

3. All trash and food scraps brought into the project area will be removed daily from the site and secured in covered receptacles. Feeding wildlife, including corvids and gulls, will be prohibited.
4. Barricade signs will be placed on new temporary construction access routes during non-working hours and weekends to discourage additional public vehicle access to the gravel bars.
5. FHWA or their non-Federal representative will ensure that workers are aware of the boundaries of the construction area, plover protective measures described in the project description, and terms and conditions 1, 2, 3, and 4 in this biological opinion.
6. Prior to January 31st of each year for the duration of project, the FHWA shall provide the Service with an annual report. The report shall discuss plover survey results including but not limited to adult plover use of the survey area, nest numbers and locations, nest fates, brood activity, and reproductive success. This report shall include a complete list of survey dates, weather conditions, names of surveyors, and survey results, even for surveys when no plovers were detected.

6.0 Reporting Requirements

Upon locating a dead or injured western snowy plover, initial notification must be made to the Service's Division of Law Enforcement in Chico, California at (530) 342-8724 and the Field Supervisor of the Arcata Fish and Wildlife Office at (707) 822-7201 immediately, and in writing within three (3) working days. Notification must include the date, time, and location of the carcass; cause of death or injury, if known; and any other pertinent information. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state for later analysis of cause of death. The finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed, unless to remove it from the path of further harm or destruction. Should any treated listed species survive, the Service should be contacted regarding the disposition of the animal. In the case of take or suspected take of western snowy plovers not exempted in this biological opinion, the Arcata Fish and Wildlife Office and the Division of Law Enforcement shall be notified within 24 hours.

7.0 Coordination of Incidental Take with Other Laws, Regulations, and Policies

The Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), of the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

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8.0 Closing Paragraph

The Service believes that no more than two adults and three chicks will be incidentally taken as a result of harassment during each of the two construction years and that no more than three eggs will be incidentally taken as a result of harm during the two year period. The reasonable and prudent measure, with its implementing terms and conditions, is designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measure provided. The FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measure.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

Annually submit western snowy plover survey data to the Northern California western snowy plover recovery unit 2 working group.

To keep the Service informed of actions which minimize or avoid adverse effects or which benefit listed, proposed, or candidate species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in your September 19, 2002, request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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Mr. Gary N. Hamby

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If you have any questions regarding this biological opinion, please contact staff biologists Ray Bosch or Robin Hamlin at (707) 882-7201.

Sincerely,

Acting for Ameda Bruckey
Michael M. Long
Field Supervisor

cc:
CDFG, Eureka, CA (ATTN: K. Kovacs)

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LITERATURE CITED

- California Natural Diversity Database. 2001. Special Animals. California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. January 2001. 52 pp.
- Colwell, M. A., R. R. LeValley, A. N. Transou, S. E. McAllister, J. Hall, C. B. Millett, J. J. Meyer, and D. LeValley. 2002. Final report: 2002 snowy plover breeding in northern California, with emphasis on Humboldt County. Submitted to MRB Research, Inc. 14 pp.
- Colwell, M. A., R. R. LeValley, A. N. Transou, S. E. McAllister, J. Hall, and C. B. Millett. 2001. Final report: 2001 snowy plover breeding in Humboldt County, CA. Submitted to MRB Research, Inc. 11 pp.
- Fisher, M. R. 1993. Western snowy plover productivity at select Humboldt and Del Norte County beaches, 1993. Unpublished report to California Department of Fish and Game, Eureka, California. 11 pp.
- Fisher, M. R. 1992. Western snowy plover (*Charadrius alexandrinus nivosus*) seasonal distribution and productivity near Humboldt Bay, California. Unpublished report to California Department of Fish and Game, Eureka, California. 17 pp.
- Griggs, K. M. 1998. A snowy plover survey of Humboldt County State Park beaches. Unpublished report. 4 pp.
- LeValley, R. 1999. Snowy plover nesting season 1999. Prepared for Humboldt County Planning Department, Eureka, California. 22 pp.
- Mad River Biologists. 2002. Eel River gravel mining and excavation activities biological assessment (western snowy plover). Prepared for Eureka Sand and Gravel, Mercer Fraser, Leland Rock, and Humboldt County Department of Public Works. 15 pp.
- Mad River Biologists. 2001a. Biological assessment snowy plover habitat on the lower Eel River Humboldt County, CA. Prepared for Eureka Sand and Gravel, Mercer Fraser, Leland Rock, and Humboldt County Department of Public Works. 21 pp.
- Mad River Biologists. 2001b. Snowy plover abundance, distribution and nest success in coastal northern California 2000. Prepared for U.S. Fish and Wildlife Service, Arcata, California. 15 pp.
- Mad River Biologists. 2000. The effects of predator exclosures on snowy plover nests in Humboldt County, CA. 1999-2000. Prepared for U.S. Fish and Wildlife Service, Arcata, California. 13 pp.

- Nur, N., G. W. Page, and L. E. Stenzel. 1999. Population viability analysis for Pacific coast snowy plovers. In: U.S. Fish and Wildlife Service. 2001. Western snowy plover (*Charadrius alexandrinus nivosus*) Pacific coast population draft recovery plan, Appendix D, D1-D40.
- Page, G. W., F. C. Bidstrup, R. J. Ramer, and L. E. Stenzel. 1986. Distribution of wintering snowy plovers in California and adjacent states. *Western Birds* 17(4):145-170.
- Page, G. W., L. E. Stenzel, W. D. Shuford, and C. R. Bruce. 1991. Distribution and abundance of the snowy plover on its western breeding grounds. *J. Field Ornithol.* 62(2):245-255.
- Page, G. W., J. S. Warriner, J. C. Warriner, and P. W. C. Paton. 1995. Snowy plover (*Charadrius alexandrinus*). In: *The Birds of North American*, No. 154 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithological Union, Washington, D.C.
- Page, G. W. and L. E. Stenzel. 1981. The breeding status of the snowy plover in California. *Western Birds* 12(1):1-40.
- Point Reyes Bird Observatory. 2002. Unpublished data for the year 2002 breeding season snowy plover survey of California coast. Stinson Beach, California.
- Point Reyes Bird Observatory. 2000. Unpublished data for the year 2000 breeding season snowy plover survey of California coast. Stinson Beach, California.
- Tuttle, D. C., R. Stein, and G. Lester. 1997. Snowy plovers nesting on Eel River gravel bars, Humboldt County. *Western Birds*: Vol. 28, No. 3.
- U.S. Department of the Interior. 1999. Endangered and threatened wildlife and plants; designation of critical habitat for the Pacific coast population of the western snowy plover, final rule. Fish and Wildlife Service. *Federal Register* 64(234): 68508-68544.
- U.S. Department of the Interior. 1993. Endangered and threatened wildlife and plants; determination of threatened status for the Pacific coast population of the western snowy plover, final rule. Fish and Wildlife Service. *Federal Register* 58(42):12864-12874.
- USDI, Fish and Wildlife Service and USDC National Marine Fisheries Service. 1998. *Endangered Species Consultation Handbook Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act*. U.S. Government Printing Office, Washington, D.C.
- U.S. Fish and Wildlife Service. 2002. Unpublished data on snowy plovers. Arcata Fish and Wildlife Office, Arcata, California.

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Mr. Gary N. Hamby

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U.S. Fish and Wildlife Service. 2001. Western snowy plover (*Charadrius alexandrinus nivosus*) Pacific coast population draft recovery plan. Portland, Oregon. xix + 630 pp.

Washington Department of Fish and Wildlife. 2002. Unpublished data on snowy plover window surveys in Washington.

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TABLES

Table 1. Estimated numbers of breeding western snowy plovers by recovery unit from the draft recovery plan (Nur, et al. 1999).

Recovery Unit	Estimated Breeding
Washington and Oregon (Unit 1)	134
Del Norte through Mendocino Counties (Unit 2)	50
San Francisco Bay (Unit 3)	264
Sonoma through Monterey Counties (Unit 4)	300
San Luis Obispo through Ventura Counties (Unit 5)	886
Los Angeles through San Diego Counties (Unit 6)	316
Total	1,950

Table 2. Rangewide breeding season window survey results for 2002 (Point Reyes Observatory 2002 unpublished data; Washington Department of Fish and Wildlife 2002 unpublished data; U.S. Fish and Wildlife Service unpublished data).

Recovery Unit	Adult Plovers
Washington and Oregon (Unit 1)	86
Del Norte through Mendocino Counties (Unit 2)	49
San Francisco Bay (Unit 3)	78
Sonoma through Monterey Counties (Unit 4)	312
San Luis Obispo through Ventura Counties (Unit 5)	745
Los Angeles through San Diego Counties (Unit 6)	195
Total	1,465

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Table 3. Number of adult snowy plovers counted during breeding season window surveys along the California coast during surveys from 1977 to 2002.

Year	Adult Plovers Counted
1977-1980 ¹	1,593
1989 ¹	1,376
1991 ¹	1,384
1995 ¹	977 ²
2000 ³	976
2001	no data
2002 ³	1,379

¹ U.S. Fish and Wildlife Service 2001

² The 1995 survey did not include San Francisco Bay.
In 1977/1980, 1,242 plovers were counted in survey
area, excluding San Francisco Bay.

³ Point Reyes Bird Observatory 2002

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Table 4. Site specific management goals for the number of breeding adult birds for locations in Recovery Unit 2, as taken from Appendix B (Table B-1) in the draft western snowy plover Pacific coast population recovery plan (U.S. Fish and Wildlife Service 2001).

Western Snowy Plover Management Goals for Recovery	
Location	Breeding Numbers
DEL NORTE COUNTY	
Smith River Mouth	8
Lake Earl	10
Subtotal	18
HUMBOLDT COUNTY	
Big Lagoon	16
Clam Beach/Little River	6
Mad River Mouth and Beach	12
Humboldt Bay, North Spit	8
Humboldt Bay, South Spit	30
Eel River Wildlife Area	20
Eel River Mouth to Van Duzen	40
Eel River, South Spit and Beach	20
McNutt Gulch	10
Subtotal	162
MENDOCINO COUNTY	
MacKerricher Beach	20
Subtotal	20
TOTAL	200

Table 5. Number of adult snowy plovers and number of sites where adults were located during the breeding season window surveys, 1977 to 2002.

Location	Number of Adults/Number of Sites by Year					
	1977 to 1980	1989 ¹	1991	1995	2000	2002
Del Norte County	11/2	8/?	3/1	0/0	0/0	0/0
Humboldt County	54/6	32/?	30/6	19/4	39/3	49/4
Mendocino County	15/1	2/?	0/0	4/1	1/1	0/0
TOTAL	80/9	42/?	33/7	23/5	40/4	49/4

¹ Adult plover numbers are from Page, et al. (1991). Data were presented by county with no site specific information.

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Table 6. Management goals for number of breeding adult birds at important nesting locations in Recovery Unit 2 and the number of adult plovers counted during the 2002 window survey (U.S. Fish and Wildlife Service 2001; Point Reyes Bird Observatory 2002 unpublished data).

Western Snowy Plover Recovery Unit 2			
Location	Management Goal Breeding Numbers (adult birds)	2002 Window	
		adult birds	% of goal
DEL NORTE COUNTY			
Smith River Mouth	8	0	0
Lake Earl	10	0	0
Subtotal	18	0	0
HUMBOLDT COUNTY			
Big Lagoon	16	0	0
Clam Beach/Little River	6	12	150
Mad River Mouth and Beach	12	0	0
Humboldt Bay, North Spit	8	0	0
Humboldt Bay, South Spit	30	0	0
Eel River Wildlife Area	20	9	45
Eel River Mouth to Van Duzen	40	26	65
Eel River, South Spit and Beach	20	2	10
McNutt Gulch	10	0	0
Subtotal	162	49	30
MENDOCINO COUNTY			
MacKerricher Beach	20	0	0
Subtotal	20	0	0
TOTAL	200	49	25

Table 7. Wintering locations in Recovery Unit 2 identified as important for recovery (U.S. Fish and Wildlife Service 2001, Appendix B). Survey data presented are of varying efforts, for example window surveys and monthly surveys.

Wintering Location	Number of Adult Plovers					
	1979-1985 ¹	1992 ²	1993 ³	1998 ⁴	2001 ⁵	2002 ⁵
DEL NORTE COUNTY						
Smith River Mouth					1	0
Lake Earl	1	blank ⁶			0	0
HUMBOLDT COUNTY						
Gold Bluffs Beach	2				0	0
Stone Lagoon	9			0	0	0
Big Lagoon				0	6	5
Clam Beach/Little River	11	30	16	40	32	55+
Mad River Mouth and Beach					0	0
Humboldt Bay, North Spit	2				0	0
Humboldt Bay, South Spit	27		9		0	0
Eel River Wildlife Area	6	2	6		0	0
Eel River, Spit and Beach	6	5			75	22
McNutt Gulch					0	0
MENDOCINO COUNTY						
MacKerricher Beach	23				37	41
Manchester Beach	2				4	

¹ Median of the maximum bird numbers (Page, et al. 1986). This paper mentions a report of 6 wintering birds at the mouth of the Smith River; Mad River beach was not completely surveyed.

² Median number per survey Humboldt County surveys in January (Fisher 1992).

³ Monthly means Humboldt County surveys in February (Fisher 1993)

⁴ Maximum observed. Surveys were only conducted at Big Lagoon, Stone Lagoon, and Clam Beach/Little River (Griggs 1998).

⁵ Window survey data.

⁶ Blanks represent no data.

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File Copy 9/16/04



State of California - The Resources Agency

DEPARTMENT OF FISH AND GAME

Northern California-North Coast Region
619 Second Street
Eureka, CA 95501
(707) 445-6493

EXHIBIT NO. 6

APPLICATION NO.

1-04-014

CALTRANS

CDFG STREAM

ALTERATION AGREEMENT

(1 of 5)

GRAY DAVIS, Governor



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Page 1 of 3

NOTIFICATION NO.: 04-0097

CALIFORNIA
COASTAL COMMISSION

AGREEMENT REGARDING PROPOSED STREAM ALTERATION

THIS AGREEMENT, entered in between the State of California, Department of Fish and Game, hereafter called the Department, and Ms. Gail Popham/Caltrans hereafter called the operator, is as follows:

WHEREAS, pursuant to Division 2, Chapter 6 of California Fish and Game Code, the operator, on 4-26-04 notified the Department that he intends to substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of, the following water: Van Duzen River in the County of HUMBOLDT, State of California.

WHEREAS, the Department, represented by **DFG WARDEN Jon Dunn** has conducted an onsite inspection on 5-7-04 and has determined that such operations may substantially adversely affect existing fish and wildlife resources including: SALMON, STEELHEAD TROUT, and OTHER AQUATIC AND RIPARIAN SPECIES.

THEREFORE, the Department hereby proposes the following measures to protect fish and wildlife during the operator's work and the operator hereby agrees to accept these recommendations as part of his work. The operator, as designated by the signature on this agreement, shall be responsible for the execution of all elements of this agreement. A copy of this agreement must be provided to any contractor and/or subcontractor and must be in their possession at the worksite.

If the operator's work changes from that stated in the notification specified above, this agreement is no longer valid and a new notification shall be submitted to the Department of Fish and Game. **Failure to comply with the provisions of this agreement and with other pertinent DFG Code sections may result in prosecution and/or cancellation of this agreement.**

Nothing in this agreement authorizes the operator to trespass on any land or property, nor does it relieve the operator of responsibility for compliance with applicable federal, state, or local laws.

THIS AGREEMENT IS NOT INTENDED AS AN APPROVAL OR ENDORSEMENT OF A PROJECT OR OF SPECIFIC PROJECT FEATURES BY THE DEPARTMENT OF FISH AND GAME. INDEPENDENT REVIEW AND RECOMMENDATIONS WILL BE PROVIDED BY THE DEPARTMENT AS APPROPRIATE ON THOSE PROJECTS WHERE LOCAL, STATE, OR FEDERAL PERMITS OR OTHER ENVIRONMENTAL REPORTS ARE REQUIRED.

1. The following work conditions apply to the proposed replacement of the Hwy. 101 southbound bridge over the Van Duzen River near its confluence with the Eel River.
2. All work in or near the stream shall be confined to the period June ¹⁵ through October 15.
3. Except where noted in this Agreement, all construction shall be in accordance with work plan submitted with Notification #04-0097
4. Rock, riprap, or other erosion protection shall be placed in areas where vegetation cannot reasonably be expected to become re-established. All other areas of disturbed soil which drains toward the stream channel shall be seeded with native plant seed and mulched.
5. This agreement shall be in effect for five (5) years from date of signature of both parties ^{or for the life of the Caltrans project to which it pertains, whichever term may end first,} and the ^{BW} conditions outlined herein shall remain the same throughout the term of the agreement. If conditions change substantially either to the river bed, bank or channel or the operator wishes to substantially change the construction plans as outlined in the Project Description the operator shall notify the Dept. and amend this agreement or prepare a new Notification describing the new work plan.
6. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. The disturbed portions of any stream channel shall be restored to as near their original condition as possible. Restoration shall include the mulching of stripped or exposed dirt areas at crossing sites prior to the end of the work period
7. During construction in flowing water which can transport sediment downstream, the flow shall be diverted around the work area by pipe, pumping, or temporary diversion channel. When any dam or artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream to maintain fish life below the dam. Equipment may be operated in the stream channel of flowing live streams only as necessary to construct the described construction. The operator may channel the low flow into a pipe of adequate size to hold low flows and place native gravels over it to create an equipment work area.
8. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.
9. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from any logging, construction, or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any stream.
10. No servicing of equipment shall take place within the stream bed and all equipment shall be staged and stored when not in use out of the stream bed. No petroleum products shall be allowed to enter the stream channel. If a spill occurs, the Dept. shall be notified immediately and cleanup and containment shall commence. All work to the project shall cease until the spill has been cleaned to the Dept.'s satisfaction. Operator shall have onsite the necessary materials to begin removal of any spilled material. No concrete or washing of concrete trucks shall be allowed to take place within the stream channel
11. Operator/Caltrans shall provide access to the work area through any gates by assigning keys or lock

combinations to the appropriate Dept. personel.

Operator



DFG



Title

Project Manager

DONALD B. KOCH
Regional Manager

Organization

Caltrans

Department of Fish and Game

Date

8-5-04

9/13/04

NOTICE OF DETERMINATION

TO: Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

FROM: California Department of Fish and Game
1416 Ninth Street
Sacramento, CA 95814

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

PROJECT TITLE: Lake or Streambed Alteration Agreement for Notification #04-0097. Project proposes to replace the southbound two-lane bridge crossing the Van Duzen River at the mouth of the Eel River, Humboldt County.

STATE CLEARINGHOUSE NUMBER: 2003042067

LEAD AGENCY: California Department of Transportation
Environmental Management Office
Post Office Box 3700
Eureka, CA 95502-3700

CONTACT: Deborah Harmon
Chief, Environmental Management

RESPONSIBLE AGENCY: Department of Fish and Game
601 Locust Street
Redding, CA 96001

CONTACT: Bruce Webb
Environmental Scientist
(530) 225-2675

PROJECT LOCATION/DESCRIPTION: The California Department of Fish and Game is issuing a final Lake or Streambed Alteration Agreement pursuant to Section 1602 of the Fish and Game Code to the project applicant, [Ms. Gail Popham representing the California Department of Transportation]. The applicant proposes to replace the southbound two-lane bridge crossing the Van Duzen River near the mouth of the Eel River, Humboldt County.

This is to advise that the California Department of Fish and Game as a Responsible Agency approved the project described above on September 9, 2004, and has made the following determinations regarding the above described project.

1. The project will not have a significant effect on the environment.
2. A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures were not made a condition of the approval of the project.
4. A Statement of Overriding Considerations was not adopted for this project.
5. Findings were made pursuant to the provisions of CEQA.

This is to certify that a copy of the ND prepared for this project is available to the general public and may be reviewed at:

California Department of Transportation
Environmental Management Office
Post Office Box 3700
Eureka, CA 95502-3700, or

California Department of Fish and Game
601 Locust Street
Redding, CA 9600, or
Contact the person listed above.

Signed:


DONALD B. KOCH

Regional Manager, Northern California-North Coast Region
California Department Fish and Game


Date: September 9, 2004

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CALIFORNIA DEPARTMENT OF FISH AND GAME
CEQA FINDINGS FOR THE
AGREEMENT REGARDING PROPOSED LAKE OR STREAMBED
ALTERATION, NO. 04-0097

Introduction

The California Environmental Quality Act (CEQA) (Public Resources Code section 21000, *et seq.*) and the State CEQA Guidelines (Guidelines) (Section 15000, *et seq.*, Title 14, California Code of Regulations) require that no public agency shall approve or carry out a project for which a Negative Declaration (ND) has been completed unless a finding can be made that no significant effects will result from the project, or that changes in the project agreed to by the applicant will fully avoid any significant impacts that might otherwise result from the project.

As the lead agency for the Project, the California Department of Transportation (Caltrans) adopted the ND for the Project on **December 24, 2003**. Caltrans found that the Project will not result in significant environmental effects and that no mitigation measures were required.

The California Department of Fish and Game (Department) is issuing a Lake or Streambed Alteration Agreement (Agreement) to the project applicant [**Ms. Gail Popham representing the California Department of Transportation**]. The project is located on the **Van Duzen River near the mouth of the Eel River, Humboldt County**, in Section 23, Township 2 North, Range 1 East, HB&M.

Because the Department is issuing the Agreement, it is a "responsible agency" under CEQA for the Project. As a CEQA Responsible Agency, the Department is required by Guidelines §15096 to review the environmental document certified by the lead agency approving the projects or activities addressed in the Agreement and to make certain findings concerning a project's potential to cause significant, adverse environmental effects. However, when considering alternatives and mitigation measures approved by the lead agency, a responsible agency is more limited than the lead agency. In issuing the Agreement, the Department is responsible only for ensuring that the direct or indirect environmental effects addressed in the Agreement are adequately mitigated or avoided. Consequently, the findings adopted or independently made by the Department with respect to the approval of Agreements Regarding Proposed Lake or Streambed Alterations are more limited than the findings of the lead agency funding, approving, or carrying out the project activities addressed in such Agreements.

Findings

The Department has considered the ND adopted by Caltrans. The Department has independently concluded that the Agreement should be issued under the terms and conditions specified therein. In this regard, the Department hereby adopts the findings of Caltrans, as set forth in the ND and record of project approval, insofar as those findings pertain to the Project's impacts on biological resources.

Signed: _____

DONALD B. KOCH

Regional Manager, Northern California-North Coast Region
California Department Fish and Game

302
Date: September 8, 2004

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California Regional Water Quality Control Board

North Coast Region

William R. Massey, Chairman

Terry Tamminen
Secretary for
Environmental
Protection

<http://www.swrcb.ca.gov/rwqcb1/>
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone 1-877-721-9203 Office (707) 576-2220 FAX (707) 523-0135



Arnold
Schwarzenegger
Governor

May 5, 2004

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SEP 15 2004

CALIFORNIA
COASTAL COMMISSION

Ms. Deborah Harmon
California Department of Transportation
P.O. Box 3700
Eureka, CA 95502-3700

Dear Ms. Harmon:

Subject: Issuance of Clean Water Act Section 401 Certification (Water Quality Certification) for the Highway 101 - Van Duzen River, Southbound Bridge Replacement

File: CDOT - Hwy 101, Van Duzen River, Southbound Bridge Replacement
WDID No. 1B04029WNHU

This Order by the California Regional Water Quality Control Board, North Coast Region (Regional Water Board), is being issued pursuant to Section 401 of the Clean Water Act (33 USC 1341). The Order is being issued in response to your request, on behalf of the California Department of Transportation, for a Water Quality Certification to remove and replace the Van Duzen River Bridge on southbound Highway 101 in Humboldt County. The Regional Water Board received a complete application and processing fee in the amount of \$1,575 on March 17, 2004. Information describing the proposed project was noticed for public comment for a 21-day period starting on March 13, 2004, on the Regional Water Board's web site. No comments were received.

Project Description:

The purpose of the proposed project is to replace the southbound State Route 101 bridge over the Van Duzen River in Humboldt County. The project involves removal of the existing bridge piers and abutments and construction of new piers, abutments and a cast-in-place concrete box girder bridge superstructure. Approximately 3,400 cubic yards of rock slope protection will be placed at the new bridge abutments for bank protection and approximately 1,300 cubic yards of concrete will be used to construct the new piers and abutments. Access to the construction area and river will be from existing roads on either side of the existing bridge. Equipment and materials will also be transported along temporary roads graded on the gravel bar. An upland area on the northwest side of the bridge will be used for storage of materials and equipment, refueling operations, and concrete washout activities.

EXHIBIT NO. 7

APPLICATION NO.

1-04-014

CALTRANS

RWQCB SECTION 401
CERTIFICATION (1 of 6)

The proposed project requires temporary diversion of the Van Duzen River. A temporary dike will be constructed of river-run gravel to divert the river around the work areas. Sheet piles will be placed around footings to create cofferdams. Water pumped from

California Environmental Protection Agency

Recycled Paper

within the footings will be placed in a sediment-settling basin created with native gravel bar material. The sediment settling basin, temporary dikes, berms, and roads will be graded back to the preconstruction elevation contours of the gravel bar. Fine sediment collected in the settling basin will be removed and disposed above the high water level.

The National Marine Fisheries Service concurs that this project may affect, and is likely to adversely affect steelhead, coho salmon, chinook salmon and western snowy plover. An incidental take permit was issued for these listed species. The project is not anticipated to have any impact on any additional listed species. All in-stream work activities will be conducted between June 1 and October 15 to minimize impacts to juvenile salmonids and to avoid impacts to adult salmonids. The project is scheduled to begin in August 2004 and be completed by October 15, 2006.

Receiving Water: Van Duzen River

Hydrologic Unit: Ferndale Hydrologic Subarea No. 111.11

Filled or Excavated Area: Area Temporarily Impacted: 0.50 acre
Area Permanently Impacted: 0.30 acre

Federal Permits: U.S. Army Corps of Engineers Nationwide Permits 14, 23 and 33

Compensatory Mitigation: None

Noncompensatory Mitigation: Best Management Practices will be implemented to prevent adverse impacts to water quality. No equipment staging or refueling will take place within the river channel. Designated concrete washout areas will be created and used. The concrete washings will be fully contained and no concrete or concrete washings will be allowed to flow directly into the river or onto the gravel bar. The applicant has applied for a Lake or Streambed Alteration Agreement (1601 Permit) from California Department of Fish and Game.

CEQA Compliance: CDOT, acting as the lead California Environmental Quality Act (CEQA) agency, prepared a Negative Declaration (SCH # 2003042067) for the project dated December 24, 2003.

Standard Conditions: Pursuant to Title 23, California Code of Regulations, Section 3860 (23 CCR 3860), the following three standard conditions shall apply to this project:

- 1) This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code and 23 CCR 3867.

- 2) This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
- 3) The validity of any nondenial certification action (actions 1 and 2) shall be conditioned upon total payment of the full fee required under 23 CCR 3833, unless otherwise stated in writing by the certifying agency.

Additional Conditions:

Pursuant to 23 CCR 3859(a), the applicant shall comply with the following additional conditions:

- 1) The Regional Water Board shall be notified in writing at least five working days (working days are Monday – Friday) prior to the commencement of the project, with details regarding the construction schedule, in order to allow staff to be present on-site during construction, and to answer any public inquiries that may arise regarding the project.
- 2) No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature, other than that authorized by this permit, shall be allowed to enter into or be placed where it may be washed by rainfall into waters of the State. When operations are completed, any excess material or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any stream.
- 3) Best Management Practices for sediment and turbidity control shall be implemented and in place prior to, during, and after construction in order to ensure that no silt or sediment enters surface waters.
- 4) A copy of this permit must be provided to the contractor and all subcontractors conducting the work, and must be in their possession at the work site.
- 5) If, at any time, an unauthorized discharge to surface waters occurs, or any water quality problem arises, the project shall cease immediately and the Regional Water Board shall be notified promptly.

- 6) The project site may be visited and assessed by Regional Water Board staff to document compliance with this certification.
- 7) This Order is not transferable. In the event of any change in control of ownership of land presently owned or controlled by the Applicant, the Applicant shall notify the successor-in-interest of the existence of this Order by letter and shall forward a copy of the letter to the Regional Water Board at the above address.

To discharge dredged or fill material under this Order, the successor-in-interest must send to the Regional Water Board Executive Officer a written request for transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the person(s) responsible for contact with the Regional Water Board. The request must also describe any changes to the Project proposed by the successor-in-interest or confirm that the successor-in-interest intends to implement the Project as described in this Order.

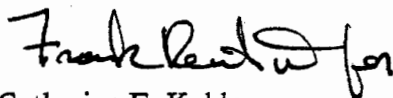
Water Quality Certification: I hereby issue an order [23 CCR Subsection 3831(e)] certifying that any discharge from the CDOT - Hwy 101, Van Duzen River, Southbound Bridge Replacement (Facility I.D. No. 1A04029WNHU) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act [33 USC Subsection 1341 (a)(1)], and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003-0017 - DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on: a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description, and b) compliance with all applicable requirements of the Regional Water Board's Water Quality Control Plan for the North Coast Region (Basin Plan).

Expiration: The authorization of this certification for any dredge and fill activities expires on October 15, 2008, or upon completion of the project, whichever occurs first. Conditions and monitoring requirements outlined in this certification are not subject to the expiration date outlined above, and remain in full effect and are enforceable.

Please notify Dean Prat of our staff at (707) 576-2801 prior to construction (pursuant to Additional Condition No. 1 above) so that we can answer any public inquiries about the work.

Sincerely,



Catherine E. Kuhlman
Executive Officer

DLP:js/050504cdothwy101vanduzen401cert041904

Enclosure: State Water Resources Control Board Order No. 2003-0017 - DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification"

cc: Ms. Sheryl Schaffner, SWRCB, Office of Chief Counsel
Mr. Erik Spiess, SWRCB, Office of Chief Counsel
Mr. Oscar Balaguer, 401 Program Manager, Water Quality Certification Unit
State Water Resources Control Board, 1001 I Street, 15th Floor, Sacramento, CA 95814
Mr. Tim Vendlinski, Supervisor of Wetlands Regulatory Office (WTR-8), U.S.
Environmental Protection Agency, Region 9, 75 Hawthorne Street, San Francisco, CA 94105
Ms. Jane Vorpapel, California Department of Fish and Game, 601 Locust Street, Redding, CA 96002
U.S. Army Corps of Engineers, District Engineer, P.O. Box 4863, Eureka, CA 95502
Ms. Jane Hicks, U.S. Army Corps of Engineers, Regulatory Functions, 333 Market Street, San Francisco, CA 94599
Mr. Jim Browning, Sacramento Field Office, U.S. Fish and Wildlife Service, 2800 Cottage Way, Room 2605, Sacramento, CA 95815

STATE WATER RESOURCES CONTROL BOARD

WATER QUALITY ORDER NO. 2003 - 0017 - DWQ

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR
DREDGED OR FILL DISCHARGES THAT HAVE RECEIVED
STATE WATER QUALITY CERTIFICATION (GENERAL WDRs)

The State Water Resources Control Board (SWRCB) finds that:

1. Discharges eligible for coverage under these General WDRs are discharges of dredged or fill material that have received State Water Quality Certification (Certification) pursuant to federal Clean Water Act (CWA) section 401.
2. Discharges of dredged or fill material are commonly associated with port development, stream channelization, utility crossing land development, transportation water resource, and flood control projects. Other activities, such as land clearing, may also involve discharges of dredged or fill materials (e.g., soil) into waters of the United States.
3. CWA section 404 establishes a permit program under which the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged or fill material into waters of the United States.
4. CWA section 401 requires every applicant for a federal permit or license for an activity that may result in a discharge of pollutants to a water of the United States (including permits under section 404) to obtain Certification that the proposed activity will comply with State water quality standards. In California, Certifications are issued by the Regional Water Quality Control Boards (RWQCB) or for multi-Region discharges, the SWRCB, in accordance with the requirements of California Code of Regulations (CCR) section 3830 et seq. The SWRCB's water quality regulations do not authorize the SWRCB or RWQCBs to waive certification, and therefore, these General WDRs do not apply to any discharge authorized by federal license or permit that was issued based on a determination by the issuing agency that certification has been waived. Certifications are issued by the RWQCB or SWRCB before the ACOE may issue CWA section 404 permits. Any conditions set forth in a Certification become conditions of the federal permit or license if and when it is ultimately issued.
5. Article 4, of Chapter 4 of Division 7 of the California Water Code (CWC), commencing with section 13260(a), requires that any person discharging or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the State,¹ file a report of waste discharge (ROWD). Pursuant to Article 4, the RWQCBs are required to prescribe waste discharge requirements (WDRs) for any proposed or existing discharge unless WDRs are waived pursuant to CWC section 13269. These General WDRs fulfill the requirements of Article 4 for proposed dredge or fill discharges to waters of the United States that are regulated under the State's CWA section 401 authority.

¹ "Waters of the State" as defined in CWC Section 13050(e)



EXHIBIT NO. 8

APPLICATION NO.

1-04-014
CALTRANS

BRIDGE RAIL FOR VAN
DUZEN RIVER BRIDGE
(1 of 3)

