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Staff: Melissa B. Kraemer
Staff Report: August 26, 2010
Hearing Date: September 16, 2010
Commission Action:

STAFF REPORT: PERMIT AMENDMENT

APPLICATION NO.:	**1-07-041-A1**
APPLICANT:	**Humboldt County Public Works Department**
PROJECT LOCATION:	Within the County right-of-way beneath Jacoby Creek Bridge at Post Mile 7.5 on Old Arcata Road, approximately 400 feet north of Graham Road, on the outskirts of Arcata, Humboldt County.
DESCRIPTION OF PROJECT ORIGINALLY APPROVED:	Removal of accumulated sediment for flood control purposes from the channel of Jacoby Creek within a 3,600-square-foot area beneath the 90-foot-long by 36-foot-wide Jacoby Creek Bridge and adjacent 12-foot-wide (upstream and downstream) County right-of-ways on a periodic basis as necessary for up to 10 years.
DESCRIPTION OF CURRENT AMENDMENT REQUEST:	Removal of accumulated sediment from the entire width of the channel within the County right-of-way, including the wetted channel, rather than from the dry banks only as approved under the original permit. The proposed amended development would involve fish relocation and temporary diversion of the summertime low creek flow around the work area prior to the start of annual sediment removal activities each year.

APPROVALS RECEIVED:

(1) U.S. Army Corps of Engineers Nationwide Permit (NWP) No. 3 (Maintenance) (File No. 2007-00778, as amended, dated August 10, 2010)

(2) California Department of Fish and Game Agreement No. R1-07-0556 (as amended, issued June 25, 2010)

(3) North Coast Water Quality Control Board Water Quality Certification WDID No. 1B07145WNHU (as amended)

SUBSTANTIVE FILE DOCUMENTS:

(1) CDP File No. 1-07-041 (approved December 12, 2008);

(2) NOAA-Fisheries Final Biological Opinion File No. 2010/03328:ZR, dated July 16, 2010;

(3) Humboldt County Local Coastal Program

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval with special conditions of the proposed amended development.

The project is located within the County right-of-way beneath Jacoby Creek Bridge at Post Mile 7.5 on Old Arcata Road, approximately 400 feet north of Graham Road, on the outskirts of Arcata, Humboldt County (Exhibit Nos. 1 and 2). The Jacoby Creek Bridge is an approximately 36-foot-wide by 90-foot-long concrete structure, and the County right-of-way extends an additional 12 feet beyond the bridge width both upstream (southward) and downstream (northward). The upstream end of the project coincides with the inland boundary of the coastal zone. Jacoby Creek Bridge is located approximately one mile from the creek's entrance into Humboldt Bay. The location of the bridge is above the tidally influenced portion of Jacoby Creek. The elevation of the channel at the project site is approximately 13 to 15 feet above mean sea level. The channel reach downstream of the bridge is characterized by a low-gradient, narrow channel that meanders through mostly agricultural land.

A channel capacity analysis completed in 2007 for the Jacoby Creek Bridge area estimates that over 900 cubic yards of sediment have accumulated within the project area since the bridge was constructed in 1988. Most of this sediment has been deposited under the bridge and on the upper streambanks, near the bridge abutments. Clearance under the bridge averages 2 feet near the abutments and 6 feet near the wetted channel. The excessive sediment accumulation contributes to annual flooding events that impact vehicular traffic along Old Arcata Road, a County road, as well as adjacent residential property and agricultural land downstream and upstream of the bridge. The road is temporarily closed (impassable) on an almost annual basis due to flooding of the roadway by the creek.

On December 12, 2008, The Commission approved CDP No. 1-07-041 for the County to remove accumulated sediment from an approximately 3,600-square-foot area of County right-of-way beneath the bridge within the channel and on the banks of Jacoby Creek using hand-operated, light-weight, mechanized equipment and hand tools (Exhibit No. 5). Approved work is authorized to be performed on an annual basis during the low-flow season and the driest period

of the year. A small front-end loader ("Bobcat") is used to clear an access route from the inland shoulder of Old Arcata Road to the top of the creek bank and also to haul excavated sediment to a temporary stockpile site located away from the creek in an upland area on an adjacent property owned by the Jacoby Creek Land Trust (outside of the coastal zone). Once sediment removal is complete, the area is to be raked by hand and left smooth, free-draining, and without depressions. The approved permit does not authorize the use of heavy equipment within the wetted channel, nor does it allow sediment to be removed from the wetted channel.

The existing permit authorizes the removal of an unspecified volume (though the County has specified that its removal would not exceed 350 cubic yards annually) of sediment and debris from underneath the bridge and within the County right-of-way each year for a period of five years (through December 12, 2013). One request for an additional five-year period of development authorization may be accepted, reviewed, and approved by the Executive Director for a maximum total of 10 years of development authorization (until December 12, 2018).

Under the current amendment request, the applicant proposes to remove accumulated sediment from the entire width of the channel within the County right-of-way, including from the wetted channel, rather than from the dry banks only as approved under the original permit. The proposed amended development would involve fish relocation and temporary diversion of the summertime low creek flow around the work area prior to the start of annual sediment removal activities each year (Exhibit No. 3). The County does not propose to increase the total volume of sediment removed in any given year.

Department of Fish and Game staff supports the County's proposal to remove as much sediment as possible from the County's right-of-way beneath and around the bridge, because it is believed that the sediment removal will benefit sensitive fish species, including sensitive salmonids, in multiple ways. First, removal of accumulated sediment will increase available habitat for rearing salmonids in the area (at least temporarily, until more sediment accumulates in the area) and provide a wider corridor for out-migrant smolts. Second, removal of accumulated sediment will decrease the potential for fish-stranding during flooding events in the area, since receding flood-flows have limited opportunities to return to the sediment-laden creek. DFG approved an amendment to the project's Streambed Alteration Agreement on June 25, 2010. In addition, NOAA-Fisheries staff determined that the proposed amended development "is not likely to jeopardize the continued existence" of listed salmonids and "is not likely to result in the destruction or adverse modification" of salmonid critical habitats. In its Biological Opinion prepared for the proposed amended development (Exhibit No. 4), NOAA-Fisheries recommends a number of terms and conditions to implement measures to minimize take of listed salmonids resulting from the proposed relocation of fish species associated with sediment removal activities. These include, in part, the following: (1) requiring that the County retain a qualified fisheries biologist to herd fish away from the area prior to performing any electroshocking, capture fish from the area to be dewatered, relocate fish to suitable habitat outside of the project area, and monitor the construction site during placement and removal of channel diversions and cofferdams to ensure that any take of fish species is minimized; and (2) requiring that all fish be kept in cool, shaded, aerated water protected from excessive noise, jostling, or overcrowding during relocation. The Corps required the same terms and conditions as recommended by NOAA-Fisheries in its Nationwide Permit issued for the proposed amended development.

Staff believes that as (1) the primary objective of the amended development is to manage the hydraulic competence and capacity of the Jacoby Creek channel for providing flood protection for the County road and lower creek watershed area, (2) no other feasible measures currently exist for protecting structures within the area, and (3) the project is necessary for the public safety and to protect existing development, the proposed substantial streambed alteration of the creek is for an allowable purpose under Coastal Act Section 30236. Staff further believes that as conditioned to incorporate various mitigation measures to protect sensitive fish species and habitats, as described below, the proposed amended development incorporates the best mitigation measures feasible to avoid or minimize the significant adverse environmental effects of the proposed project on sensitive fish species and habitat to less than significant levels, consistent with the requirements of Section 30236 of the Coastal Act. Staff recommends modifying and reimposing Special Condition Nos. 1 and 5 and attaching added new Special Condition Nos. 8 and 9 to ensure that the proposed amended development, as conditioned, would be consistent with the Commission's intent in granting the original permit with conditions to ensure that the best feasible mitigation measures are provided to minimize or avoid the significant adverse environmental effects of the project on coastal resources.

Therefore, staff believes that the proposed amended development, as conditioned, is consistent with all applicable policies of the Coastal Act.

The Motion to adopt the Staff Recommendation is found on Pages 6-7.

STAFF NOTES

1. Procedural Note

Section 13166 of the California Code of Regulations states that the Executive Director shall reject an amendment request if it lessens or avoids the intent of the approved permit, unless the applicant presents newly discovered material information, which he or she could not, with reasonable diligence, have discovered and produced before the permit was granted.

On December 12, 2008, the Commission approved CDP No. 1-07-041 for the County to remove accumulated sediment from an approximately 3,600-square-foot area of County right-of-way beneath the bridge within the channel and on the banks of Jacoby Creek using hand-operated, light-weight, mechanized equipment and hand tools (Exhibit No. 5). Approved work is authorized to be performed on an annual basis for up to 10 years during the low-flow season and the driest period of the year. A small front-end loader ("Bobcat") is used to clear an access route from the inland (southeastern) shoulder of Old Arcata Road to the top of the creek bank and also to haul excavated sediment to a temporary stockpile site located away from the creek in an upland area on an adjacent property owned by the Jacoby Creek Land Trust (outside of the coastal zone). Once sediment removal is complete, the area is raked by hand and left smooth, free-draining, and without depressions. The approved permit does not authorize the use of heavy equipment within the wetted channel nor sediment to be removed from the wetted channel.

Under the current amendment request, the applicant proposes to remove accumulated sediment from the entire width of the channel within the County right-of-way, including from the wetted channel, rather than from the dry banks only as approved under the original permit. The proposed amended development would involve fish relocation and temporary diversion of the summertime low creek flow around the work area prior to the start of annual sediment removal activities each year (Exhibit No. 3). The County does not propose to increase the total volume of sediment removed in any given year.

In its findings for approval of the original permit, the Commission found that the substantial streambed alteration of Jacoby Creek associated with managing the accumulated sediment within the County right-of-way is allowable as a flood control project consistent with the limitations of Section 30236(2) to protect Old Arcata Road and surrounding private properties containing residences and farmland. The Commission found that there was no other feasible method for protecting existing structures in the floodplain and such protection was necessary for public safety or to protect existing development. The Commission attached Special Condition Nos. 1 through 5 to ensure that the project would be consistent with the requirements of Section 30236 that the best feasible mitigation measures be provided to minimize or avoid the significant adverse environmental effects of the project on coastal resources.

In the original permit application, the County did not propose to remove sediment from the wetted channel both to avoid adverse impacts to sensitive fish species and to simplify the permitting process. However, after attempting to implement the permitted work in the summer of 2009 by removing sediment from the dry channel banks beneath the roadway bridge within the County right-of-way, the County determined that, due to the excessive load of sediment accumulated beneath the bridge, especially along the banks of the live (wetted) channel where there is very little clearance between the surface of the stream banks and the bottom of the overhanging bridge deck, it was not possible for personnel and equipment to adequately access the dry bank area to remove a significant quantity accumulated sediment. In fact, the County was only able to remove approximately one quarter (approximately 100 cubic yards) of the total volume of sediment that had been targeted for removal in the 2009 dry season under CDP No. 1-07-041. The small volume of sediment removed did little to relieve the localized flooding problems in the immediate vicinity of the bridge area this past winter.

Thus, the County consulted with the Department of Fish and Game to discuss alternatives to the extraction procedures so that more sediment could be removed to reduce the localized flooding problems in the immediate vicinity of the bridge area. DFG supports the County's proposal to remove as much sediment as possible from the County's right-of-way beneath and around the bridge, because it is believed that the sediment removal will benefit sensitive fish species, including sensitive salmonids, in multiple ways. First, removal of accumulated sediment will increase available habitat for rearing salmonids in the area (at least temporarily, until more sediment accumulates in the area) and provide a wider corridor for out-migrant smolts. Second, removal of accumulated sediment will decrease the potential for fish-stranding during flooding events in the area, since receding flood-flows have limited opportunities to return to the creek in its sediment-laden condition. DFG approved an amendment to the project's Streambed Alteration Agreement on June 25, 2010. In addition, NOAA-Fisheries has reviewed the proposed amended

development and determined that the proposed amended development "is not likely to jeopardize the continued existence" of listed salmonids and "is not likely to result in the destruction or adverse modification" of salmonid critical habitats. NOAA-Fisheries staff recommends a number of terms and conditions to implement measures to minimize take of listed salmonids resulting from the proposed relocation of fish species associated with sediment removal activities (Exhibit No. 4).

In its approval of the original permit, the Commission did not require additional mitigation measures to protect sensitive fish species beyond those proposed in the permit application. As the County now proposes to relocate fish and divert the live stream to facilitate the removal of accumulated sediment within the County right-of-way beneath the bridge, staff believes that modifying and reimposing Special Condition Nos. 1 and 5 and attaching added new Special Condition Nos. 8 and 9 would ensure that the proposed amended development, as conditioned, would be consistent with the Commission's intent in granting the original permit with conditions to ensure that the best feasible mitigation measures are provided to minimize or avoid the significant adverse environmental effects of the project on coastal resources.

Thus, the Executive Director has determined that the proposed amended development as conditioned would not lessen or avoid the intent of the approved permit and therefore has accepted the amendment request for processing.

2. Jurisdiction and Standard of Review

The project site is located in the Commission's retained permit jurisdiction. The County of Humboldt has a certified LCP, but the site is within an area shown on State Lands Commission maps over which the State retains a public trust interest. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

3. Scope

This staff report addresses only the coastal resource issues affected by the proposed permit amendment, provides recommended special conditions to reduce and mitigate significant impacts to coastal resources caused by the development as amended in order to achieve consistency with the Coastal Act, and provides findings for conditional approval of the amended development. All other analyses, findings, and conditions related to the originally permitted development, except as specifically affected by the current permit amendment request and addressed herein, remain as stated within the original permit approval adopted by the Commission on December 12, 2008 attached as Exhibit No. 5.

I. MOTION, STAFF RECOMMENDATION, & RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve the proposed amendment to Coastal Development Permit No. 1-07-041 pursuant to the staff recommendation.

Staff Recommendation of Approval:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit amendment 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 Permit:

The Commission hereby approves the proposed permit amendment and adopts the findings set forth below, subject to the conditions below, on the grounds that the development with the proposed amendment, as conditioned, will be in conformity with the Chapter 3 policies of the Coastal Act. Approval of the permit amendment complies with the California Environmental Quality Act because all feasible mitigation measures and alternatives have been incorporated to substantially lessen any significant adverse impacts of the amended development on the environment.

II. STANDARD CONDITIONS: See Appendix A.

III. SPECIAL CONDITIONS:

Note: The original permit (CDP No. 1-07-041) contains seven special conditions. Special Condition Nos. 2, 3, 4, 6, and 7 of the original permit are reimposed without any changes as conditions of CDP Amendment No. 1-07-041-A1 and remain in full force and effect. Special Condition Nos. 1 and 5 are modified as shown below and reimposed as conditions of CDP Amendment No. 1-07-041-A1. Special Condition Nos. 8 and 9 are additional new special conditions attached to CDP Amendment No. 1-07-041-A1. For comparison, the text of the original permit conditions is included in Exhibit No. 5.

Deleted wording within the modified special conditions is shown in ~~strikethrough~~ text, and new condition language appears as **bold double-underlined** text.

1. Construction Responsibilities

The permittee shall comply with the following Best Management Practices (BMPs) and construction-related responsibilities:

A. No construction materials, debris, or waste shall be placed or stored where it may be subject to entering coastal waters or wetlands, and any debris discharged into coastal waters or wetlands shall be recovered immediately and disposed of properly;

B. Any and all debris resulting from construction activities shall be removed from the project site immediately upon cessation of seasonal construction activities and disposed of at an authorized upland location;

C. All project activities shall be conducted during the low-flow period of June 15 through October 15 only;

D. Project activities shall be implemented in dry weather conditions only. If rainfall is forecast at any point during construction operations, any exposed soil areas shall be promptly mulched or covered with plastic sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation;

E. Any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas. Mechanized equipment and other vehicles used during the construction process shall not be stored or re-fueled within 100 feet of coastal waters or wetlands;

F. Fuels, lubricants, solvents, and similar materials shall not be allowed to enter coastal waters or wetlands. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call. Any accidental spill shall be rapidly contained and cleaned up;

G. Heavy equipment shall not operate within the ~~wetted channel~~ **low flow channel except during periods of time when the channel has been dewatered consistent with the requirements of Section J (below) of Special Condition No. 1 of CDP Amendment No. 1-07-041-A1**;

H. Appropriate sediment control measures shall be implemented for the duration of construction activities;

I. The work area within the bank full channel shall be left smooth, free draining, and without depressions that could lead to fish stranding;

J. Sediment removal activities shall (1) not cause braiding of the stream channel, (2) not be performed within the low flow channel **until the stream flow has been diverted around the site and sensitive salmonids have been captured and relocated in a manner consistent with the methods described in the permittee's revised project description dated April 2010 (included as Exhibit No. 3 of the staff recommendation dated August 26, 2010 for CDP Amendment No. 1-07-041-A1), as modified by the mandatory terms and conditions of the NOAA-Fisheries Biological Opinion dated July 16, 2010 (included as Exhibit No. 4 of the staff recommendation)**, and (3) leave a stable low flow channel with a minimum 6-inch vertical offset between the channel bottom and the excavation area within the project reach in an effort to contain low to moderate flows in a single channel;

K. No riparian trees within or adjacent to the project area shall be disturbed; and

L. Construction protocols and project activities shall conform to all provisions specified in Special Conditions Nos. 1 through ~~6~~ **9** of Coastal Development Permit No. 1-07-041**-A1**.

5. Submittal of Annual Sediment Management Plans

PRIOR TO COMMENCEMENT OF SEDIMENT REMOVAL OPERATIONS IN ANY YEAR IN WHICH SEDIMENT REMOVAL IS CONDUCTED, the applicant shall submit, for the review and approval of the Executive Director, a Sediment Management Plan for that season's proposed sediment removal work consistent with all terms and conditions of Coastal Development Permit No. 1-07-041**-A1**.

A. The Annual Sediment Management Plan shall demonstrate that sediment removal operations shall conform to all provisions specified in Special Conditions Nos. 1 through ~~5~~ **9** of Coastal Development Permit No. 1-07-041**-A1** including, but not limited to, the following:

1) All project activities shall be conducted during the low-flow period of June 15 through October 15 only;

2) Heavy equipment shall not operate within the ~~wetted channel~~ **low flow channel except during periods of time when the channel has been dewatered consistent with the requirements of Section J of Special Condition No. 1 (above) of CDP Amendment No. 1-07-041-A1**;

3) The work area within the bank full channel shall be left smooth, free draining, and without depressions that could lead to fish stranding;

4) Sediment removal activities shall (a) not cause braiding of the stream channel, (b) not be performed within the low flow channel **until the stream flow has been diverted around the site and sensitive salmonids have been captured and relocated in a manner consistent with the methods described in the permittee's revised project description dated April 2010 (included as Exhibit No. 3 of the staff recommendation dated August 26, 2010 for CDP Amendment No. 1-07-041-A1), as modified by the mandatory terms and conditions of the NOAA-Fisheries Biological Opinion dated July 16, 2010 (included as Exhibit No. 4 of the staff recommendation)**, and (c) leave a stable low flow channel with a minimum 6-inch vertical offset between the channel bottom and the excavation area within the project reach in an effort to contain low to moderate flows in a single channel;

5) Sediment removal along the left bank on the downstream side of the bridge shall be minimized and completed in such a way so as to avoid direct and indirect impacts (e.g., bank instability) to riparian vegetation by not removing portions of the bank that support riparian vegetation and not reconfiguring the bank full channel in a way that creates sharp angles in the bank that would be particularly prone to stream bank erosion; and

6) All staging and stockpiling areas shall be located outside of wetlands and other environmentally sensitive habitat areas.

B. The Annual Sediment Management Plan shall include, at a minimum, the following components:

1) A site plan and typical cross section(s) of the proposed sediment removal work area;

2) A schedule for implementing the proposed sediment removal activities;

3) A staging and stockpiling plan completed pursuant to Special Condition No. 3 of Coastal Development Permit No. 1-07-041; ~~and~~

4) Copies of all other necessary agency approvals for the proposed work**;**

5) An erosion, sedimentation, and runoff control plan detailing Best Management Practices to be used to ensure the sediment removal and stream diversion activities shall not increase sedimentation or pollutants in coastal waters or wetlands; and

6) A stream diversion and fish relocation plan for that year's sediment removal work.

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

8. Implementation of Sensitive Fish Species Mitigation Measures

The permittee shall undertake all development authorized by CDP No. 1-07-041-A1 in accordance with the measures and protocols proposed in the permittee's revised project description dated April 2010 (included as Exhibit No. 3 of the staff recommendation dated August 26, 2010 for CDP Amendment No. 1-07-041-A1), as modified by the mandatory terms and conditions of the NOAA-Fisheries Biological Opinion dated July 16, 2010 (included as Exhibit No. 4 of the staff recommendation), to ensure minimization of impacts to sensitive fish species and sensitive fish critical habitat within and around the project area.

9. Submittal of Annual Fish Relocation Monitoring Reports

The permittee shall submit to the Executive Director by January 15 of each year for the duration of permit authorization a copy of the annual fish relocation monitoring report required by term and condition No. 2(A) of the NOAA-Fisheries Biological Opinion dated July 16, 2010.

IV. FINDINGS & DECLARATIONS

The Commission hereby finds and declares as follows:

A. Environmental Setting

The project is located within the County right-of-way beneath Jacoby Creek Bridge at Post Mile 7.5 on Old Arcata Road, approximately 400 feet north of Graham Road, on the outskirts of Arcata, Humboldt County (Exhibit Nos. 1 and 2). The Jacoby Creek Bridge is an approximately 36-foot-wide by 90-foot-long concrete structure, and the County right-of-way extends an

additional 12 feet beyond the bridge width both upstream (southward) and downstream (northward). The bridge crosses the stream in a generally southwest/northeast direction, while the stream flows generally in a southeast to northwest direction under the bridge. The upstream end of the project coincides with the inland boundary of the coastal zone. Jacoby Creek Bridge is located approximately one mile from the creek's entrance into Humboldt Bay. The location of the bridge is above the tidally influenced portion of Jacoby Creek. The elevation of the channel at the project site is approximately 13 to 15 feet above mean sea level. The channel reach downstream of the bridge is characterized by a low-gradient, narrow channel that meanders through mostly agricultural land.

The Jacoby Creek watershed comprises a 17-square-mile area that contains 26 miles of perennial waterways and just under 50 miles of intermittent tributaries. The watershed is roughly 9 miles long and 2 miles wide, and elevations range from sea level to 2,388 feet at Boynton Prairie. The main stream channel is approximately 11 miles long and is a 5^{th}-order stream. First- and 2^{nd}-order streams contribute to most of the stream mileage in this basin. Jacoby Creek drains into the northeastern portion of Humboldt Bay, near the Arcata Marsh. The tidal marshes and lowland grass plain near the mouth of Jacoby Creek (approximately 1 mile downstream from the project area) provide abundant habitat for a diversity of migratory waterfowl and shorebirds. Portions of Jacoby Creek and its tributaries are inhabited by a diversity of sensitive fish species including Coho salmon, Chinook salmon, Steelhead trout, Coastal cutthroat trout, and Tidewater goby.

A channel capacity analysis completed in 2007 for the Jacoby Creek Bridge area estimates that over 900 cubic yards of sediment have accumulated within the project area since the bridge was constructed in 1988. Most of this sediment has been deposited under the bridge and on the upper streambanks, near the bridge abutments. Clearance under the bridge averages 2 feet near the abutments and 6 feet near the wetted channel. The excessive sediment accumulation contributes to annual flooding events that impact vehicular traffic along Old Arcata Road, a County road, as well as adjacent residential property and agricultural land downstream and upstream of the bridge. The road is temporarily closed (impassable) on an almost annual basis due to flooding of the roadway by the creek.

B. Description of Project Approved Under CDP No. 1-07-041

On December 12, 2008, The Commission approved CDP No. 1-07-041 for the County to remove accumulated sediment from an approximately 3,600-square-foot area of County right-of-way beneath the bridge within the channel and on the banks of Jacoby Creek using hand-operated, light-weight, mechanized equipment and hand tools (Exhibit No. 5). Approved work is authorized to be performed on an annual basis during the low-flow season and the driest period of the year. A small front-end loader ("Bobcat") is used to clear an access route from the inland (southeastern) shoulder of Old Arcata Road to the top of the creek bank and also to haul excavated sediment to a temporary stockpile site located away from the creek in an upland area on an adjacent property owned by the Jacoby Creek Land Trust (outside of the coastal zone). Once sediment removal is complete, the area is to be raked by hand and left smooth, free-draining, and without depressions. The approved permit does not authorize the use of heavy equipment within the wetted channel nor sediment to be removed from the wetted channel.

The permit authorizes the removal of an unspecified volume (though the County has specified that its removal would not exceed 350 cubic yards annually) of sediment and debris from underneath the bridge and within the County right-of-way each year for a period of five years (through December 12, 2013). One request for an additional five-year period of development authorization may be accepted, reviewed, and approved by the Executive Director for a maximum total of 10 years of development authorization (until December 12, 2018).

CDP No. 1-07-041 includes seven special conditions: (1) Special Condition No. 1 requires adherence to various construction-related responsibilities to minimize adverse impacts on water quality, riparian habitat, and sensitive salmonids; (2) Special Condition No. 2 requires adherence to certain standards and limitations for site revegetation; (3) Special Condition No. 3 required submittal of a final staging area and stockpiling plan to ensure that staged and stockpiled materials and equipment in no way impact coastal waters or wetlands; (4) Special Condition No. 4 requires adherence to certain standards and limitations for the protection of riparian vegetation at the project site; (5) Special Condition No. 5 requires submittal of an annual sediment management plan demonstrating in part that the particular sediment removal operations conducted each year conform to various requirements of the special conditions (e.g., all project activities shall be conducted during June 15 through October 15 only; heavy equipment shall not operate within the wetted channel; the work area within the bank full channel shall be left smooth, free draining, and without depressions that could lead to fish stranding; sediment removal activities shall not be performed within the low flow channel; and other specified provisions); (6) Special Condition No. 6 limits the authorized development to five years, but grants the Executive Director the authority to approve a request for an additional five years of sediment removal operations provided that the request would not substantively alter the project description and/or require modifications of the conditions due to new information or technology or other changed circumstances; and (7) Special Condition No. 7 requires in part that the County assume the risks of injury and damage from flood hazards in connection with the permitted development and to unconditionally waive any claim of damage or liability against the Commission for injury or damage from such hazards.

C. Description of the Proposed Amended Development

The proposed amended development, as summarized in Exhibit No. 3, involves removal of accumulated sediment from the entire width of the channel within the County right-of-way, including from the wetted channel, rather than from the dry banks only as approved under the original permit. The proposed amended development would involve fish relocation and temporary diversion of the summertime low creek flow around the work area prior to the start of annual sediment removal activities each year. The County does not propose to increase the total volume of sediment removed in any given year.

Since Jacoby Creek contains sensitive salmonid species during all times of the year, the County is proposing to enlist the help and guidance of staff from the Department of Fish and Game (DFG) to conduct fish relocation efforts prior to any water diversion. Prior to any fish relocation activities administered by DFG or other qualified professionals, the following site preparation activities would occur:

- Silt fences would be placed along the non-wetted portion of the channel at both the upstream and downstream channel width to prevent sediment from entering the live stream during construction activities.
- A longitudinal ditch would be excavated along the non-wetted portion of the stream channel using small equipment or hand-tools. The ditch would be wide and deep enough to contain approximately 120-feet of 18-inch-diameter HDPE culvert pipe. The pipe would be used to convey the stream through the project site.
- A sandbag cofferdam would be installed on the upstream end in front of the culvert pipe. Sandbags would be stacked and shaped in such a manner so to help convey the stream through the pipe. If available, a water bladder device may be used instead of sandbags.
- Fish exclusion fencing (¼-inch mesh hardware cloth) would be placed across the wetted channel at both upstream and downstream locations. Once the site is prepared for fish exclusion and relocation, DFG would then be notified for assistance. If DFG is not available to assist the County in relocation efforts, then the County would either hire a qualified biologist approved by DFG or eliminate the relocation efforts and proceed with sediment removal activities as approved under the original permit, CDP No. 1-07-041 (i.e., not working within the wetted channel). Also, there may be future maintenance years when diversion of the stream and fish relocation efforts would not be necessary due to basic maintenance activities outside the wetted channel width.

Once all fish have been relocated outside the project site area, stream diversion activities would commence. The County is proposing two options for stream diversion, as described below:

1. The first and preferred option would be to divert the stream flow using the sandbag cofferdam or water bladder device to direct the flow through a culvert pipe within an excavated ditch as described above. This method is preferred because the need for water pumps would be eliminated along with the need to constantly observe and maintain the pumps. Diverting the low-flow stream through a culvert pipe would most likely occur in two stages. This first stage would be to divert the stream flow along one side of the streambank while work is being conducted on the opposite side. Once sediment is removed from one half of the channel, the stream would be diverted to the other side to allow excavation activities on the non-worked side. The method of diversion would be the same for both sides: excavation of a longitudinal ditch to house the culvert pipe, construction of a sandbag cofferdam (or water bladder device) on the upstream inlet side of the culvert pipe, and connection of active stream flow through the culvert pipe.
2. Another method of diverting the stream flow around the project site would include pumping the flow. Diesel or electric water pumps would be situated on the banks outside of the stream channel and work area. Any necessary generators and/or fueling areas would take place on the top of bank and outside of the work area. To prepare the site for mechanical pumping/diversion, a small hole would be excavated outside the wetted channel and near the upstream end of the project area. The stream flow would then be conveyed into the hole where it would be pumped out and transported downstream. Sandbags and hand tools would be used to convey the stream flow into the hole. The water would be transported downstream and allowed to filter through a vegetated embankment before entering the stream channel. The discharge point would occur below

(downstream) the fish exclusion fencing and into the stream channel where the thalweg (deepest part) occurs.

Temporary increases in turbidity potentially could result from the proposed diversion activities, but the County asserts that any increases would be minimal in amount and duration and would have no adverse impact on fish species immediately downstream of the project site, as fish would be able to move further downstream if conditions were to become unfavorable.

Once the project area has been excluded of fish and the stream has been properly diverted, excavation of accumulated sediment within the County right-of-way would commence. The procedures for excavation would follow those described in the CDP No. 1-07-041 project description. A 12-foot-long platform bridge would be constructed over the diversion pipe so that equipment can enter the channel without damaging the diversion pipe. As authorized under the existing permit, excavated sediment would be temporarily stockpiled on the adjacent property (owned by the Jacoby Creek Land Trust) and then hauled off to a County disposal site once the project is complete. Equipment proposed to be used would continue to be small hand-operated earthmovers, small bobcat, hand tools, and possibly a small excavator or backhoe.

D. Development Within Coastal Rivers & Streams

1. Applicable Coastal Act Policies and Standards:

Section 30236 of the Coastal Act provides the following:

> *Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.* [Emphases added.]

Section 30236 sets forth a number of different limitations on what development may be allowed that causes substantial alteration of rivers and streams. For analysis purposes, a particular development proposal must be shown to be for one of three purposes: (1) for a necessary water supply project; (2) flood control projects where there is no other feasible methods for protection of existing structures within the floodplain and the project is necessary for public safety and the protection of existing development; or (3) primarily for fish and wildlife habitat improvement. In addition, the development proposed must provide the best mitigation measures feasible to minimize the significant adverse environmental effects of the subject channelization, damming, or other substantial alteration of a river or stream.

2. Consistency Analysis:

The first test set forth by Coastal Act Section 30236 is that any proposed channelization or other substantial alteration of a river or stream may be allowed only for three purposes enumerated in Section 30236, including "*flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development.*" In its approval of CDP No. 1-07-041, the Commission found that the substantial streambed alteration of Jacoby Creek associated with managing the

accumulated sediment within the County right-of-way is allowable as a flood control project consistent with the limitations of Section 30236(2) to protect Old Arcata Road and surrounding private properties containing residences and farmland. The Commission found that there was no other feasible method for protecting existing structures in the floodplain and such protection was necessary for public safety or to protect existing development. The project is still needed to protect existing structures in the floodplain, and the proposed amended development does not change the basic method originally approved for controlling the flooding. Therefore, the Commission finds that the amended development is consistent with the allowable purposes enumerated in Section 30236 for substantial alteration of a river or stream.

The second test set forth by the stream alteration policies of Section 30236 of the Coastal Act is whether the best feasible mitigation measures have been provided to avoid or minimize the significant adverse environmental impacts of the subject channelization, damming, and/or substantial alteration of rivers or streams. The proposed sediment management project would be conducted in a riverine environment and could have potentially significant adverse effects on a number of threatened, endangered, and special status species and/or their habitats. Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*O. tshawytscha*), and Steelhead trout (*O. mykiss*) all spawn and rear within Jacoby Creek, and the creek is designated critical habitat for the three sensitive salmonid species. Additionally, Jacoby Creek provides habitat for Coastal Cutthroat trout (*O. clarki clarki*), another sensitive fish species with known occurrences in the project area. The proposed project could impact fish habitat by increasing turbidity levels in the creek, and sensitive fish individuals could be directly impacted during channel excavation if work were to occur within the wetted channel while fish were present.

In the original permit application, the County did not propose to remove sediment from the wetted channel both to avoid adverse impacts to sensitive fish species and to simplify the permitting process. However, after attempting to implement the permitted work in the summer of 2009 by removing sediment from the dry channel banks beneath the roadway bridge within the County right-of-way, the County determined that, due to the excessive load of sediment accumulated beneath the bridge, especially along the banks of the live (wetted) channel where there is very little clearance between the surface of the stream banks and the bottom of the overhanging bridge deck, it was not possible for personnel and equipment to adequately access the dry bank area to remove a significant quantity accumulated sediment. In fact, the County was only able to remove approximately one quarter (approximately 100 cubic yards) of the total volume of sediment that had been targeted for removal in the 2009 dry season under CDP No. 1-07-041. The small volume of sediment removed did little to relieve the localized flooding problems in the immediate vicinity of the bridge area, which occurred this past winter.

Thus, the County consulted with the Department of Fish and Game to discuss alternatives to the extraction procedures so that more sediment could be removed to reduce the localized flooding problems in the immediate vicinity of the bridge area. DFG supports the County's proposal to remove as much sediment as possible from the County's right-of-way beneath and around the bridge, because it is believed that the sediment removal will benefit sensitive fish species, including sensitive salmonids, in multiple ways. First, removal of accumulated sediment will increase available habitat for rearing salmonids in the area (at least temporarily, until more sediment accumulates in the area) and provide a wider corridor for out-migrant smolts. Second,

removal of accumulated sediment will decrease the potential for fish-stranding during flooding events in the area, since receding flood-flows have limited opportunities to return to the sediment-laden creek. DFG approved an amendment to the project's Streambed Alteration Agreement on June 25, 2010.

Under the original project application, NOAA-Fisheries was consulted on the project by the Army Corps of Engineers (as part of the Clean Water Act Section 404 permitting process) and found that project would not likely adversely affect sensitive salmonids or their designated critical habitats due to the fact that: (1) heavy equipment will not operate in the wetted channel; (2) sediment control measures will be implemented; (3) sediment removal activities will be conducted during the low flow season only (June 15 to October 15); (4) sediment removal activities will be implemented in dry weather conditions only; (5) the work area will be left smooth and free draining, without depressions that could strand fish when the flows increase; and (6) equipment will be maintained to ensure that there is no leakage of fuels, lubricants, or other similar material, and spill kits will be placed on all equipment.

As part of the permit amendment application process, NOAA-Fisheries was re-consulted on the project by the Corps, and due to the County's proposal to relocate fish and divert the live stream which could, among other impacts, lead to an increased potential for mobilization of sediment, NOAA-Fisheries staff determined that proposed project activities are expected to affect listed salmonids. According to the Biological Opinion completed for the project dated July 16, 2010 (Exhibit No. 4), NOAA-Fisheries staff concludes that the proposed amended development "is not likely to jeopardize the continued existence" of listed salmonids and "is not likely to result in the destruction or adverse modification" of salmonid critical habitats. NOAA-Fisheries staff anticipates that "a few juvenile steelhead and coho salmon are expected to be captured and relocated, and a small number of fish are likely to be harmed during these efforts." NOAA-Fisheries staff recommends a number of terms and conditions to implement measures to minimize take of listed salmonids resulting from the proposed relocation of fish species associated with sediment removal activities. These include, in part, the following: (1) requiring that the County retain a qualified fisheries biologist to herd fish away from the area prior to performing any electroshocking, capture fish from the area to be dewatered, relocate fish to suitable habitat outside of the project area, and monitor the construction site during placement and removal of channel diversions and cofferdams to ensure that any take of fish species is minimized; and (2) requiring that all fish be kept in cool, shaded, aerated water protected from excessive noise, jostling, or overcrowding during relocation. The Corps required the same terms and conditions as recommended by NOAA-Fisheries in its Nationwide Permit issued for the proposed amended development (File No. 2007-00778, amended August 10, 2010).

In its approval of the original permit, the Commission did not require additional mitigation measures to protect sensitive fish species beyond those proposed in the permit application for the following reasons: (1) heavy equipment was not proposed to operate in the wetted channel; (2) sediment control measures were proposed to be implemented; (3) sediment removal activities were proposed to be conducted during the low flow season only (June 15 to October 15); (4) sediment removal activities were proposed be implemented in dry weather conditions only; (5) the work area was proposed to be left smooth and free draining, without depressions that could strand fish when the flows increase; and (6) equipment was proposed to be maintained to ensure

that there is no leakage of fuels, lubricants, or other similar material, and spill kits will be placed on all equipment. The Commission attached Special Condition No. 1 to require adherence to various construction-related responsibilities including the above-listed provisions.

As the County now proposes to relocate fish and divert the live stream to facilitate the removal of accumulated sediment within the County right-of-way beneath the bridge, the Commission attaches **Special Condition No. 8**. Special Condition No. 8 is an added new special condition requiring that the permittee undertake all development authorized by CDP No. 1-07-041-A1 in accordance with the measures and protocols proposed in the application (summarized in Finding IV-C and attached as Exhibit No. 3), as modified by the terms and conditions of the NOAA-Fisheries Biological Opinion dated July 16, 2010 (Exhibit No. 4), to ensure minimization of impacts to sensitive fish species and sensitive fish critical habitat within and around the project area. In addition, **Special Condition No. 1** is modified and reimposed to require adherence to various construction-related responsibilities including (but not limited to) not performing sediment removal activities within the low flow channel until the mandatory terms and conditions of the NOAA-Fisheries Biological Opinion dated July 16, 2010 to minimize take of sensitive fish species have been fully and appropriately implemented. Moreover, **Special Condition No. 5** is modified and reimposed to require that the annual sediment management plan, which is required to be submitted prior to commencement of sediment removal work in any year during permit authorization that sediment removal activities are conducted, demonstrates that sediment removal activities will not be performed within the low flow channel until the stream flow has been diverted around the site and sensitive salmonids have been captured and relocated in a manner consistent with the methods described in the revised project description dated April 2010 (Exhibit No. 3), as modified by the mandatory terms and conditions of the NOAA-Fisheries Biological Opinion dated July 16, 2010 (Exhibit No. 4). In addition, the annual sediment management plan is required to include, in part, (1) an erosion, sedimentation, and runoff control plan detailing Best Management Practices to be used to ensure the sediment removal and stream diversion activities do not increase sedimentation or pollutants in coastal waters or wetlands, and (2) a stream diversion and fish relocation plan for that year's sediment removal work. Finally, added new **Special Condition No. 9** requires the County to submit to the Executive Director by January 15 of each year for the duration of permit authorization a copy of the annual fish relocation monitoring report required by term and condition No. 2(A) of the NOAA-Fisheries Biological Opinion dated July 16, 2010. The required report must detail in part the location from which fish were removed and the release site, the equipment and methods used to relocate fish, the type and number of fish relocated, and the type, number, and reasons for any fish injured or killed during the relocation process.

Thus, the Commission finds that as conditioned to incorporate the above-listed mitigation measures to protect sensitive fish species and habitats, the proposed amended development incorporates the best mitigation measures feasible to avoid or minimize the significant adverse environmental effects of the proposed project on sensitive fish species and habitat to less than significant levels consistent with the requirements of Section 30236 of the Coastal Act. As (1) the primary objective of the amended development is to manage the hydraulic competence and capacity of the Jacoby Creek channel for providing flood protection for the County road and lower creek watershed area, (2) no other feasible measures currently exist for protecting structures within the area, and (3) the project is necessary for the public safety and to protect

existing development, the Commission concludes that the proposed substantial streambed alteration of the creek is for an allowable purpose under Coastal Act Section 30236. As discussed above, the proposed amended development, as conditioned, incorporates all feasible mitigation measures. Therefore, the Commission finds that as conditioned herein, the proposed amended development is consistent with the requirements of Section 30236 of the Coastal Act that the best feasible mitigation measures have been provided to minimize or avoid significant adverse environmental effects.

E. California Environmental Quality Act (CEQA)

The County of Humboldt, as the lead agency for CEQA purposes, filed a Notice of Exemption for the proposed project on September 5, 2007. The project was determined to be Categorically Exempt pursuant to CEQA Sections 15301 (Existing Facilities) and 15304 (Minor Alterations to Land), as the project was categorized as Class 1 to maintain an existing roadway facility and Class 4 to minimally alter the dry stream channel.

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any 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 amended development has been conditioned to be consistent with the policies of the Coastal Act. The 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. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may have on the environment. Therefore, the Commission finds that the proposed amended development, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act to conform to CEQA.

V. EXHIBITS:

1. Regional Location
2. Project Vicinity
3. Revised Project Description
4. NOAA-Fisheries Biological Opinion dated July 16, 2010
5. Staff Report for CDP No. 1-07-041 adopted by the Commission on December 12, 2008

APPENDIX A

STANDARD CONDITIONS

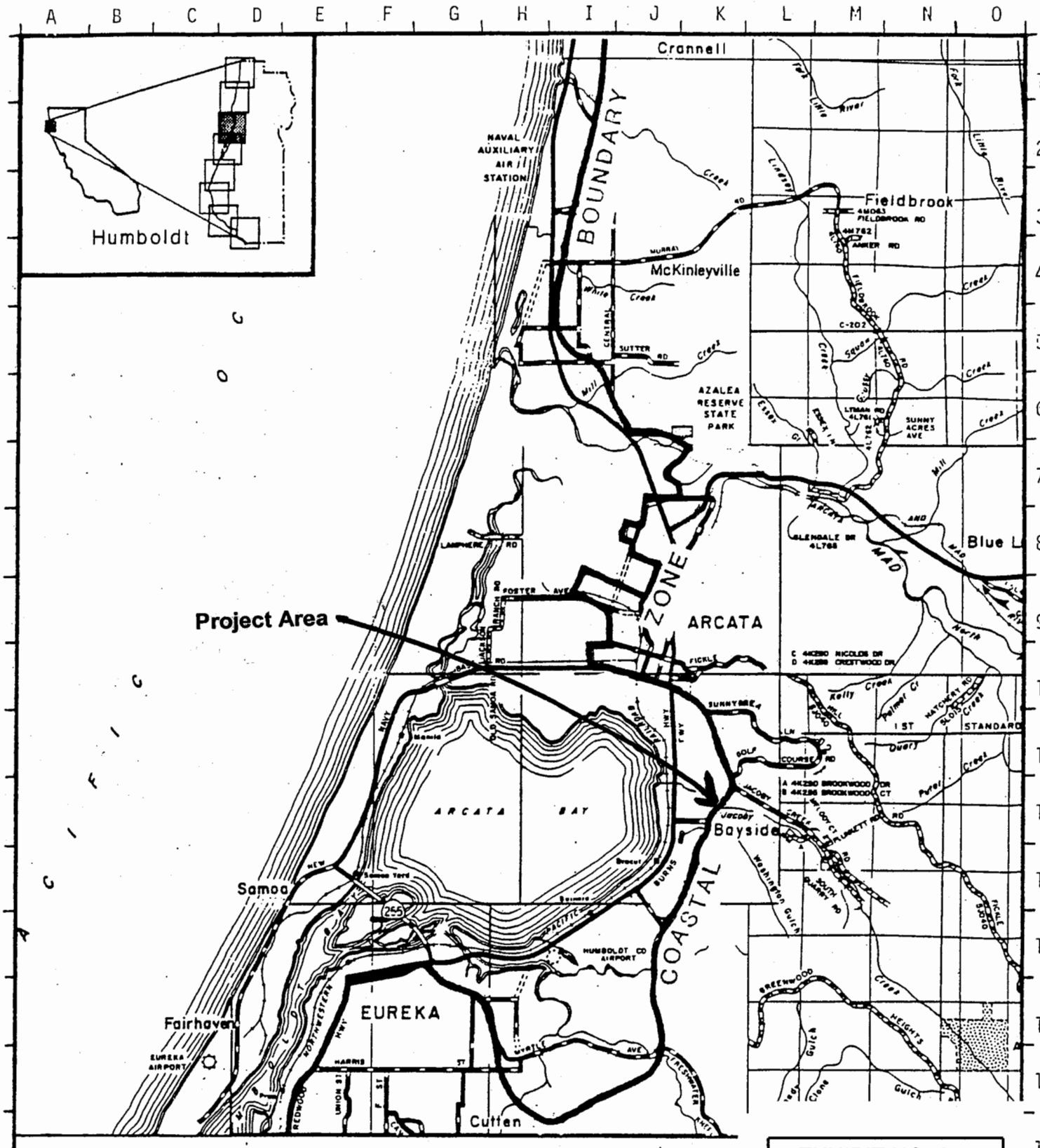
1. Notice of Receipt and Acknowledgement. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

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 amount of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of 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.



California Coastal Commission

LOCATION MAP

County of Humboldt

EXHIBIT NO. 1

APPLICATION NO.

1-07-041-A1

HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT

REGIONAL LOCATION

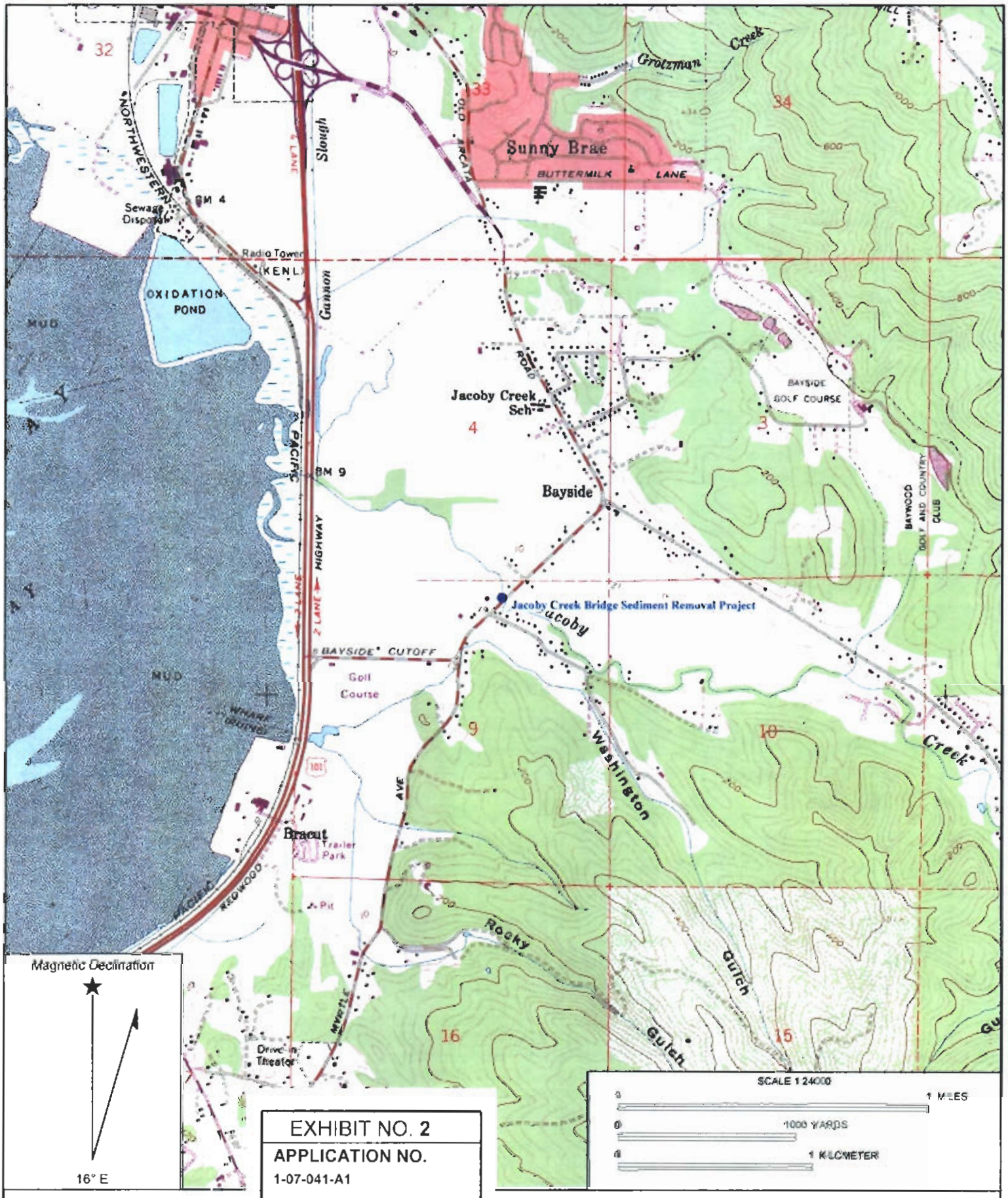


EXHIBIT NO. 2

APPLICATION NO.

1-07-041-A1

HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT

VICINITY MAP

Name: ARCATA SOUTH
Date: 4/5/2010
Scale: 1 inch equals 2000 feet

Location: 040° 50' 16.30" N 124° 04' 07.39" W NAD 27
Caption: Jacoby Creek Bridge Sediment Removal Project

COUNTY OF HUMBOLDT
DEPARTMENT OF PUBLIC WORKS
NATURAL RESOURCES DIVISION

1106 SECOND STREET
EUREKA, CA 95501-0579
707.445.7741 / FAX 445-7409

REVISED PROJECT DESCRIPTION

Jacoby Creek Bridge Sediment Removal

Old Arcata Road Post Mile 7.5
Humboldt County Department of Public Works
Revised April, 2010

EXHIBIT NO. 3
APPLICATION NO.
1-07-041-A1
HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT
REVISED PROJECT DESCRIPTION (1 of 4)

Background

Humboldt County Department of Public Works conducted sediment removal activities from underneath the Jacoby Creek Bridge in September 2009 to help alleviate frequent winter flooding in the immediate area. Please refer to the attached 2008 Project Description that discusses the original project scope. During the September 2009 activities, the County was only able to remove approximately 100 cubic yards of an allowable annual extraction amount 350 cy of sediment. In December 2009 and January 2010, localized flooding once again occurred within the County roadway and surrounding private properties. Soon thereafter, County staff met with staff from the Department of Fish and Game (DFG) to discuss options that would allow removal of more material during future activities.

Location

The Jacoby Creek Bridge (#4C-182) is located on Old Arcata Road at post mile 7.5 in the town of Bayside, California. It is located in Section 9, Township 5 North, Range 1 East, and can be seen on the Arcata South 7.5' USGS quadrangle map (see attached map).

Project Description

The proposed "revised" project is basically identical to the original 2008 project description. The project goal continues to be for the alleviation of frequent flooding in the immediate area during the winter months when Jacoby Creek rises and overtops its banks. The project involves annual bridge maintenance in the form of sediment removal from the stream channel underneath the bridge and within the County right-of-way (60 feet total distance, which equates to 12 feet beyond each side of the bridge). Previously, the sediment removal was restricted to the left and right banks, outside of the active "wetted" stream channel. Now the County is proposing diverting the summertime low creek flow around the bridge site and excavating the entire width of the stream channel in an attempt to remove as much sediment as possible (up to the 350 cy annual allotment). The County is proposing two options for diverting the low creek flows and each is described below. Since Jacoby Creek contains listed fish species during all times of the

year, the County is proposing to enlist the help and guidance of DFG to conduct fish relocation efforts prior to any water diversion. Adding this new activity would require amendments to all permits and additional Section 7 consultation with the National Marine Fisheries Service (NMFS) via Army Corps of Engineer permitting process. A site visit with staff from all the regulatory agencies was conducted on March 4, 2010 to discuss the proposed new activities. Removing as much sediment as allowed from underneath the Jacoby Creek Bridge is highly supported by DFG, local residents, and the County.

Fish Relocation Activities
Prior to any fish relocation activities administered by DFG, or other qualified professionals, the following site preparation activities will occur.

- Silt fence will be placed along the non-wetted portion of the channel at both the upstream and downstream channel width. This will prevent sediment from entering the live stream during construction activities.
- A longitudinal ditch will be excavated along the non-wetted portion of the stream channel using small equipment or hand-tools. The ditch will be wide and deep enough to contain an 18-inch-diameter HDPE culvert pipe. The pipe will be used to convey the stream through the project site (see Figure 1). Once the ditch is completed, approximately 120-feet of culvert will be placed within the ditch.
- A sandbag cofferdam will be installed on the upstream end in front of the culvert pipe. Sandbags will be stacked and shaped in such a manner so to help convey the stream through the pipe. If available, a water bladder device could be used instead of sandbags.
- Fish exclusion fencing (1/4-inch mesh hardware cloth) will be placed across the wetted channel at both upstream and downstream locations.

Once the site is prepared for fish exclusion and relocation, then DFG will be notified for assistance. If DFG is not available to assist the County in relocation efforts, then the County would either hire a qualified biologist approved by DFG or eliminate the relocation efforts and proceed with sediment removal activities as described in the original project description (not working in the wetted channel). Also, there may be future maintenance years when diversion of the stream and fish relocation efforts would not be necessary due to basic maintenance activities outside the wetted channel width.

Stream Diversion Activities
Once all fish have been relocated outside the project site area, stream diversion activities will commence. The County is proposing two options for water diversion. The first and preferred option is to divert stream flow using a sandbag cofferdam or water bladder device through a culvert pipe within an excavated ditch as described above. This method is preferred because the need for water pumps would be eliminated along with the need to constantly observe and maintain the pumps.

Diverting the low-flow stream through a culvert pipe would most likely occur in two stages. This first stage would be to divert the stream flow along one side of the streambank while work is being conducted on the opposite side. Once sediment is removed from one half of the channel, the stream would be diverted to the other side to allow excavation activities on the non-worked side. The method of diversion would be the same for both sides: Excavation of a longitudinal

ditch to house the culvert pipe, construction of a sandbag cofferdam (or water bladder device) on the upstream inlet side of the pipe, connection of active stream flow through pipe. It is probable that there will be temporary increases in turbidity during diversion activities, but any increases should be minimal in both amount and in duration. Temporary increases in turbidity should not have an impact on any fish species immediately downstream of the project site. Fish will be able to move further downstream if conditions become unfavorable.

Another methodology of diverting the stream flow around the project site would include pumping the flow. Diesel or electric water pumps would be situated on the banks outside of the stream channel and work area. Any necessary generators and/or fueling areas would take place on the top of bank and outside of the work area. To prepare the site for mechanical pumping/diversion, a small hole would be excavated outside the wetted channel and near the upstream end of the project area. Once the hole was dug, the stream flow would be conveyed into the hole where it would then be pumped out and transported downstream. Sandbags and hand tools would be used to convey the stream flow into the hole. The water would be transported downstream and allowed to filter through a vegetated embankment before entering the stream channel. The discharge point would occur below (downstream) the fish exclusion fencing and into the stream channel where the deepest part, or thalweg, occurs.

Excavation Activities

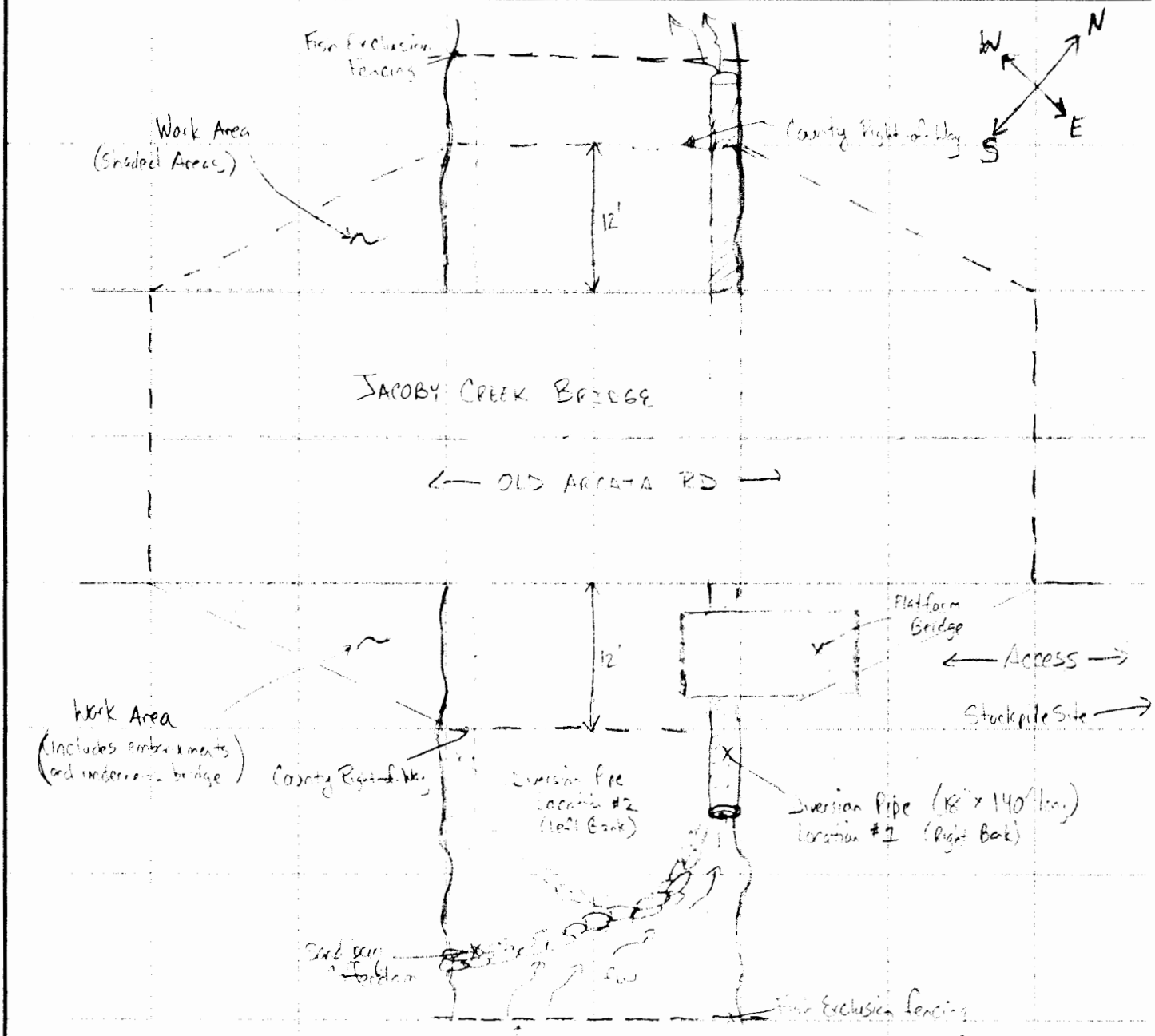
Once the project area has been excluded of fish and the stream has been properly diverted, excavation of accumulated sediment within the County right-of-way will commence. The procedures for excavation will follow the same guidelines as described in the 2008 project description. It is likely that a platform bridge will need to be constructed over the diversion pipe so that equipment can enter the channel without damaging the diversion pipe. In 2009, a platform bridge was built over the wetted stream channel and it was constructed out of 4" x 12" x 12' boards. This allowed the bobcat and hand-operated excavator to cross over the wetted channel from one side to the other. This operation worked very well and would most likely be utilized again to cross over the diversion pipe. If the stream is not diverted, then the temporary platform bridge will be constructed as it was in 2009 to allow equipment and personnel to cross over the wetted portion of the channel.

As in 2009, excavated sediment will be temporarily stockpiled on the adjacent property (Jacoby Creek Land Trust) and then hauled off to a County disposal site once the project is complete. Equipment to be used will continue to be small hand-operated earthmovers, small bobcat, hand-tools, and possibly a small excavator or backhoe.

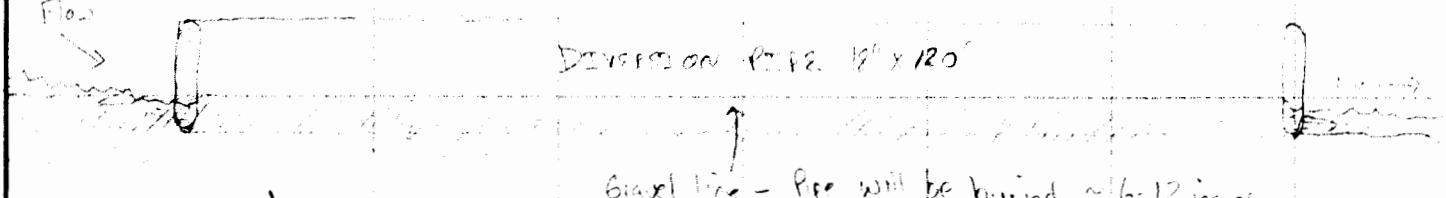
Please see the attached 2008 Project Description for more information pertaining to the overall project.

HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
1106 SECOND STREET • EUREKA, CA 95501
PHONE (707) 445-7377 FAX (707) 445-7409

DATE	PROJ. NO.	MADE BY	CHK'D BY	PAGE
4-5-10	Jacoby Creek Bridge	AB		



Diversion Pipe Profile



494

BIOLOGICAL OPINION

ACTION AGENCY: U.S. Army Corps of Engineers

ACTION: Jacoby Creek Bridge Sediment Removal Project (Corps File No. 2007-00778)

CONSULTATION CONDUCTED BY: National Marine Fisheries Service, Southwest Region

FILE NUMBER: 151422SWR2010AR00048

DATE ISSUED: July 16, 2010

I. CONSULTATION HISTORY

On June 10, 2010, NMFS received a letter from the U.S. Army Corps of Engineers (Corps), San Francisco District, requesting initiation of formal consultation on the Jacoby Creek Bridge Sediment Removal Project in the Bayside area of Humboldt County, California. The project site occurs within the right-of-way of Old Arcata Road. The Corps determined that the project, as described, may adversely affect the Federally threatened Northern California (NC) steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS), California Coastal (CC) Chinook salmon (*O. tshawytscha*) Evolutionarily Significant Unit (ESU), and Southern Oregon/Northern California Coast (SONCC) coho salmon (*O. kisutch*) ESU, and their designated critical habitats.

On March 4, 2010, NMFS conducted a site visit to the project site, along with representatives from the Corps, California Coastal Commission, and Humboldt County Department of Public Works (County). The purpose of the visit was to observe current habitat conditions and to discuss potential project impacts.

On April 10, 2010, a biological assessment and mitigation and monitoring plan was completed by the County (project applicant).

This biological opinion is based on information provided to NMFS by the Corps with the submittal for formal consultation. NMFS also considered other sources of scientific and commercial information, including journal articles and technical reports. A complete administrative record of this consultation is on file in the NMFS Northern California Office (File Number 151422SWR2010AR00048).

II. DESCRIPTION OF THE PROPOSED ACTION

The Corps proposes to issue a permit (Corps File No. 2004-28601N) to the County under section 404 of the Clean Water Act for the Jacoby Creek Bridge Sediment Removal Project. The objective of the proposed project is to alleviate frequent flooding in the immediate area during the winter months when Jacoby Creek rises and overtops its banks. The Project excavation activities would occur once annually for the proposed 10 year permit period.

A. Description of Proposed Work

The County proposes to use Bobcat excavators to remove approximately 350 cubic yards of sediment and debris from underneath the bridge and within the County right-of-way (60 feet total road distance and 12 lateral feet beyond each side of the bridge). The County will divert summer low flow around the site and excavate the entire width of the stream channel. The excavation and removal activities are estimated to take 2 to 4 days to complete each year and will occur between June 15 and October 15. The stream diversion will likely require fish capture and relocation prior to the start of sediment removal work.

Prior to fish capture and relocation, which will be performed by California Department of Fish and Game (CDFG) or other qualified professionals, the following site preparation activities will occur:

1. A silt fence would be placed across the non-wetted portion of the channel at both the upstream and downstream channel width.
2. A ditch would be excavated along the non-wetted portion of the stream channel using small equipment or hand-tools. The ditch would be wide and deep enough to contain a high-density polyethylene (HDPE) culvert pipe appropriately sized for flow conditions. The pipe would be used to convey the stream through the project site. The length of the culvert would be approximately 120-feet.
3. A sandbag cofferdam would be constructed on the upstream end in front of the culvert inlet. Sandbags would be stacked and shaped to convey the creek into the pipe. If available, a water bladder could be substituted for the sandbags.
4. Fish exclusion fencing (1/4-inch mesh hardware cloth) would be placed across the wetted channel at both upstream and downstream locations.

Cofferdams and associated structures used for dewatering will be removed from the work area following project completion. Bulldozers or other heavy equipment will be used to grade the dewatered channel.

If personnel and/or equipment are not available for fish relocation, the County will only remove sediment outside of the wetted channel. In this case, a 12-foot long platform bridge will be used to keep equipment and personnel out of the wetted channel.

B. Description of Proposed Minimization Measures

To minimize direct impacts to fish, all fish present will be captured and relocated to a nearby area with suitable habitat outside of the action area. Fish relocation will occur as the channels are dewatered prior to sediment removal. Fish relocation activities will be conducted by qualified fisheries biologists following both California Department of Fish and Game (CDFG) and NMFS guidelines. To reduce turbidity, dredging will not occur until the channel is dewatered. The applicant will use best management practices (BMPs) to control sediment and other potential pollutants from entering Jacoby Creek during project activities. Some riparian vegetation will be removed during the project; however, no riparian trees (that could potentially provide shade over the water) will be removed. Any disturbed areas (access ramps and spoils areas) will be seeded with native grasses.

The Corps proposes to incorporate special conditions in its permit provided to the County to further minimize effects to threatened salmonids, and include:

1. Temporary erosion control measures (including silt fences, staked straw bales, and mulch) will be applied. Where applicable, disturbed areas will be seeded and mulched with hay to protect against erosion.
2. Stockpiles will be located away from waterways on the adjacent upland Jacoby Creek Land Trust property. Stockpiles will be isolated with silt fences and hay bales to prevent sediment from entering nearby stream or drainage ditches in case of an unexpected precipitation event. Excavated sediment will be hauled off to a County disposal site once the project is complete.
3. Workers will be instructed to minimize disturbance of vegetation. Any vegetation, debris, or other material removed during construction will be taken off site for disposal.
4. Equipment will be monitored regularly for leaks. In the event of an identified leak, the equipment will be immediately taken off site for repair. Spill response kits will be present and readily accessible. Fueling or equipment maintenance will be performed in a pre-designated area, with containment and clean-up BMPs in place.
5. Any change in the project design, materials, or construction methods, must be approved by the Corps in writing.

C. Description of the Action Area

The Jacoby Creek Bridge is located on Old Arcata Road at post mile 7.5 in the Bayside area of Humboldt County, California. The bridge is 90-feet long by 36-feet wide and is located approximately one stream-mile from the creek's entrance into Humboldt Bay. The reach downstream of the bridge is characterized by a low gradient, narrow channel that meanders through agricultural land

III. STATUS OF THE SPECIES

In the *Status of the Species* section, we present the effects of all past human and natural activities or events that have led to the current status of the species. This section focuses specifically on

the discrete recovery unit at the ESU or DPS scale. Additionally, when designated critical habitat may be affected a summary of the current condition of the habitat is included. Appropriate information on the species' life history, its habitat and distribution, and other data on factors necessary for their continued existence, is included to provide background for analysis in later sections.

The following listed species or their critical habitat may be affected by the action:

Threatened Northern California (NC) steelhead (*Oncorhynchus mykiss*)
Listing determination (71 FR 834, January 5, 2006)
Critical habitat designation (70 FR 52488, September 2, 2005)

Threatened California Coastal (CC) Chinook salmon (*O. tshawytscha*)
Listing determination (70 FR 37160, June 28, 2005)
Critical habitat designation (70 FR 52488, September 2, 2005)

Threatened Southern Oregon/Northern California coho salmon (*O. kisutch*)
Listing determination (70 FR 37160, June 28, 2005)
Critical habitat designation (64 FR 24049, May 5, 1999)

The SONCC coho salmon and CC Chinook salmon ESUs include hatchery-born salmon. Also, the NC steelhead DPS includes the North Fork Gualala River Hatchery.

A. Species Life History, Distribution, and Abundance

Life history diversity of imperiled Pacific salmon (*Oncorhynchus spp.*) substantially contributes to their persistence, and conservation of such diversity is a critical element of recovery efforts (Beechie *et al.* 2006). Waples *et al.* (2001) and Beechie *et al.* (2006) found that life history and genetic diversity show a strong, positive correlation with the extent of a species' ecological diversity.

1. NC Steelhead

a. Life History

There are two basic steelhead life history patterns, winter-run and summer-run (Moyle 2002, Quinn 2005). Winter-run steelhead enter rivers and streams from December to March in a sexually mature state and spawn in tributaries of mainstem rivers, often ascending long distances (Moyle 2005). Summer run steelhead (also known as spring-run steelhead) enter rivers in a sexually immature state during receding flows of spring and migrate to headwater reaches of tributary streams where they hold in deep pools until spawning the following winter or spring (Moyle 2002). Spawning for all runs generally takes place in the late winter or early spring. Eggs hatch in 3 to 4 weeks and fry emerge from the gravel 2 to 3 weeks later (Moyle 2002). Juveniles spend 1 to 4 years in freshwater before migrating to estuaries and the ocean where they spend 1 to 3 years before returning to freshwater to spawn. "Half pounder" steelhead are

sexually immature steelhead that spend about 3 months in estuaries or the ocean before returning to lower river reaches on a feeding run (Moyle 2002). Then they return to the ocean where they spend 1 to 3 years before returning to freshwater to spawn. Some steelhead "residualize," becoming resident trout and never adopt the anadromous life history.

b. Current Distribution and Abundance

As of the most recent comprehensive comparison, the most abundant NC steelhead run is in the Middle Fork of the Eel River, with about 2,000 fish in 1996 (McEwan and Jackson 1996). Substantial declines from historic levels at major dams have indicated a probable decline from historic levels at the DPS scale. Adams (2000) concluded that the status of the population had changed little since the 1996 status review. Based on this and a lack of implementation of State conservation measures, NMFS concluded that the NC steelhead ESU warranted listing as a threatened species. Steelhead abundance estimates are summarized in a recent NMFS west coast steelhead status review (Good *et al.* 2005). The Biological Review Team (BRT) made a few conclusions, albeit with limited data: (1) population abundances are low, compared to historical estimates; (2) recent trends are downward (except for a few small summer-run stocks), and (3) summer-run steelhead abundance was "very low" (Good *et al.* 2005). Lack of data on run sizes within the DPS was a major source of uncertainty in the BRT's assessment.

2. CC Chinook Salmon

a. Life History

Healey (1991) describes two basic life history strategies (races) for Chinook salmon, stream-type and ocean-type, within which there is a tactical component that encompasses variation within race. Like most salmonids, Chinook salmon have evolved variation in juvenile and adult behavior patterns which can help decrease the risk of catastrophically high mortality in a particular year or habitat (Healey 1991). Spring-run Chinook salmon are often stream-type (Healey 1991, Moyle 2002). Adults return to lower-order, headwater, streams in the spring or early summer, before they have reached sexual maturity, and hold in deep pools and coldwater areas until spawning in early fall (Healey 1991, Moyle 2002). This strategy allowed spring-run Chinook salmon to take advantage of mid-elevation habitats inaccessible during the summer and fall due to low flows and high temperatures (Moyle 2002). Juveniles emerge from the gravel in the early spring and typically spend one year in freshwater before migrating downstream to estuaries and then the ocean (Moyle 2002).

Fall-run Chinook salmon are unambiguously ocean-type (Moyle 2002); specifically adapted for spawning in lowland reaches of big rivers and their tributaries (Moyle 2002, Quinn 2005). Adults move into rivers and streams from the ocean in the fall or early winter in a sexually mature state and spawn within a few weeks or days upon arrival on the spawning grounds (Moyle 2002). Juveniles emerge from the gravel in late winter or early spring and within a matter of months, migrate downstream to the estuary and the ocean (Moyle 2002, Quinn 2005). This life history strategy allows fall-run Chinook salmon to utilize quality spawning and rearing areas in the valley reaches of rivers, which are often too warm to support juvenile salmonid

rearing in the summer (Moyle 2002).

b. Current Distribution and Abundance

Low abundance, generally negative trends in abundance, reduced distribution, and profound uncertainty as to risk related to the relative lack of population monitoring in California, have contributed to NMFS' outlook for CC Chinook salmon to be at risk of becoming endangered in the foreseeable future throughout all or a significant portion of their range (64 FR 50394, September 16, 1999; Good *et al.* 2005).

Good *et al.* (2005) found that historical and current information indicates that CC Chinook salmon populations are depressed in basins where they are being monitored. Uncertainty about abundance, natural productivity, introduction of hatchery fish, and distribution continues to substantially contribute to risks facing this ESU. Concerns about current abundances relative to historical abundances, mixed trends in the few time series available, and potential extirpations in the southern part of the range contributed to the conclusion that CC Chinook salmon are "likely to become endangered" in the foreseeable future (Good *et al.* 2005).

3. SONCC Coho Salmon

a. Life History

Coho salmon adults migrate and spawn in small streams that flow directly into the ocean, or tributaries and headwater creeks of larger rivers (Sandercock 1991, Moyle 2002). Adults migrate upstream to spawning grounds from September through late December, peaking in October and November. Spawning occurs mainly in November and December, with fry emerging from the gravel in the spring, approximately 3 to 4 months after spawning. Juvenile rearing usually occurs in tributary streams with a gradient of 3 percent or less, although they may move up to streams of 4 percent or 5 percent gradient. Juveniles have been found in streams as small as 1 to 2 meters wide. They may spend 1 to 2 years rearing in freshwater (Bell and Duffy 2007), or emigrate to an estuary shortly after emerging from spawning gravels (Tschaplinski 1988). Coho salmon juveniles are also known to "redistribute" into non-natal rearing streams, lakes, or ponds, often following rainstorms, where they continue to rear (Peterson 1982). At a length of 38 to 45 mm, fry may migrate upstream a considerable distance to reach lakes or other rearing areas (Godfrey 1965 *op. cit.* Sandercock 1991, Nickelson *et al.* 1992). Emigration from streams to the estuary and ocean generally takes place from March through May.

b. Current Distribution and Abundance

The main stocks in the SONCC coho salmon ESU (Rogue, Klamath, and Trinity Rivers) remain heavily influenced by hatcheries and have little natural production in mainstem rivers (Weitkamp *et al.* 1995, Good *et al.* 2005). The listing of SONCC coho salmon includes all within-ESU hatchery programs (70 FR 37160, June 28, 2005). Trinity River Hatchery maintains high production, with a significant number of hatchery SONCC coho salmon straying into the wild population (NMFS 2001). Mad River has ceased and Iron Gate Hatcheries has reduced coho

salmon production in recent years (NMFS 2001). The apparent decline in wild production in these rivers, in conjunction with significant hatchery production, suggests that natural populations of coho salmon are not self-sustaining (Weitkamp *et al.* 1995, Good *et al.* 2005). Coho salmon populations continue to be depressed relative to historical numbers, and there are strong indications that breeding groups have been lost from a significant percentage of streams within their historical range (Good *et al.* 2005).

Reliable current time series of naturally produced adult migrants or spawners are not available for SONCC coho salmon ESU rivers (Good *et al.* 2005). For a summary of historical and current distributions of SONCC coho salmon in northern California, refer to CDFG's (2002) coho salmon status review, historical population structure by Williams *et al.* (2006), as well as the presence and absence update for the northern California portion of the SONCC coho salmon ESU (Brownell *et al.* 1999). Good *et al.* (2005) concluded that SONCC coho salmon were likely to become endangered in the foreseeable future, this conclusion being consistent with an earlier assessment (Weitkamp *et al.* 1995). Although there are little data, the information that is available for SONCC coho salmon indicates the component populations are in decline and strongly suggests the ESU is at risk of extinction (Weitkamp *et al.* 1995, CDFG 2002, Good *et al.* 2005). NMFS (2001) concluded that population trend data for SONCC coho salmon from 1989 to 2000 show a continued downward trend throughout most of the California portion of the SONCC coho salmon ESU.

B. Factors Responsible for Salmonid Decline (ESU or DPS Scale)

The factors that have caused declines in the SONCC coho salmon ESU, CC Chinook salmon ESU, and NC steelhead DPS are similar. These factors include hatchery practices, climate change, ocean conditions, habitat loss due to dam building, degradation of freshwater habitats due to a variety of agricultural and forestry practices, water diversions, urbanization, over-fishing, mining, and severe recent flood events, which are exacerbated by land use practices (Good *et al.* 2005). Sedimentation and loss of spawning gravels associated with poor forestry practices and road building are particularly chronic problems that can reduce the productivity of salmonid populations. Nonnative Sacramento pikeminnow (*Ptychocheilus grandis*) had been observed in the Eel River basin and could be acting as predators on juvenile steelhead, depending on thermal conditions leading to niche overlap of the two species (Good *et al.* 2005). Late 1980s and early 1990s droughts and unfavorable ocean conditions were identified as further likely causes of decreased abundance (Good *et al.* 2005).

MacFarlane *et al.* (2008) recently summarized information on low returns of coho salmon in California which showed there was a 72 percent decline in returning adults in 2007/08 compared to the same cohort in 2004/05. Because of the broad spatial extent of the decline, preliminary data from the Oregon coast showed a 70 percent decline, ocean conditions were suspected as a main causative agent.

Current trends in climate change are postulated to negatively affect salmonids throughout the Pacific Northwest due to large reductions in available freshwater habitat (Battin *et al.* 2007). Widespread declines in springtime snow water equivalent (SWE) have occurred in much of the

North American West since the 1920s, especially since mid-century (Knowles and Cayan 2004, Hamlet *et al.* 2005, Mote *et al.* 2005, Regonda *et al.* 2005, Mote 2006). These climactic changes have resulted in earlier onsets of springtime snowmelt and stream flow across western North America (Regonda *et al.* 2005, Stewart *et al.* 2005), as well as lower flows in the summer (Stewart *et al.* 2005).

When hatchery salmonids spawn in a river or stream and exchange genetic material with natural salmonids, the result can be progeny with lower survival (McGinnity *et al.* 2003, Kostow 2004) and ultimately, a reduction in the reproductive success of the natural stock (Reisenbichler and McIntyre 1977, Fleming *et al.* 2000, Chilcote 2003, Araki *et al.* 2007). Flagg *et al.* (2000) found that, except in situations of low wild fish density, increasing release numbers of hatchery fish can negatively impact naturally produced fish because naturally produced fish can get displaced from portions of their habitat. Kostow *et al.* (2003) and Kostow and Zhou (2006) found that over the duration of the steelhead hatchery program on the Clackamas River, Oregon, the number of hatchery steelhead in the upper basin regularly caused the total number of steelhead to exceed carrying capacity, triggering density-dependent mechanisms that impacted the natural population. Competition between hatchery and wild salmonids in the ocean can also lead to density-dependent mechanisms that effect wild salmonid populations (Unwin 1996, Beamish *et al.* 1997, Levin *et al.* 2001, Sweeting *et al.* 2003), especially during periods of poor ocean productivity (Beamish *et al.* 1997, Levin *et al.* 2001, Sweeting *et al.* 2003), such as the ocean regime salmonids are currently experiencing in the Pacific Ocean off the California and Oregon coasts (MacFarlane *et al* 2008).

IV. STATUS OF CRITICAL HABITAT

This Opinion analyzes the effects of the proposed action on critical habitat for SONCC coho salmon, CC Chinook salmon, and NC steelhead. Critical habitat is defined as the specific areas within the geographical areas occupied by the species, at the time it is listed, on which are found those physical and biological features essential to the conservation of the species and which may require special management considerations or protection, or specific areas outside the geographical area occupied by the species at the time it is listed when the Secretary determines that such areas are essential for the conservation of listed species.

This Opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 C.F.R. 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

The ESA defines conservation as "to use all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the ESA are no longer necessary." As a result, NMFS approaches its "destruction and adverse modification" determinations by examining the effects of actions on the conservation value of the designated critical habitat, that is, the value of the critical habitat for the conservation of threatened or endangered species.

A. NC Steelhead and CC Chinook Salmon Critical Habitat

Designated critical habitat for NC steelhead and CC Chinook salmon steelhead includes the stream channels up to the ordinary high-water line (50 CFR Part 226.211). In areas where the ordinary high-water line has not been defined pursuant to 50 CFR Part 226.211, the lateral extent is defined by the bankfull elevation. Critical habitat in estuaries is defined by the perimeter of the water body as displayed on standard 1:24,000 scale topographic maps or the elevation of extreme high water, whichever is greater.

Critical habitat for NC steelhead was designated as occupied watersheds from the Redwood Creek watershed, south to and including the Gualala River watershed. Critical habitat for CC Chinook salmon was designated as occupied watersheds from the Redwood Creek watershed, south to and including the Russian River watershed (70 FR 52488, September 2, 2005). Humboldt Bay and the Eel River estuary are designated as critical habitat for both the NC steelhead DPS and CC Chinook salmon ESU. Some areas within the geographic range were excluded due to economic considerations or because they overlap with Indian lands.

Designated critical habitat for NC steelhead and CC Chinook salmon overlaps the project action area. In designating critical habitat for NC steelhead and CC Chinook salmon, NMFS focused on the known primary constituent elements (PCEs) essential for the conservation of each species. PCEs are those sites and habitat components that support one or more life stages, including: (1) freshwater spawning, (2) freshwater rearing, (3) freshwater migration, (4) estuarine areas, (5) nearshore marine areas, and (6) offshore marine areas. Within the PCEs, essential elements of CC Chinook salmon and NC steelhead critical habitats include adequate (1) substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, (10) safe passage conditions, and (11) salinity conditions (70 FR 52488, September 2, 2005).

B. SONCC Coho Salmon Critical Habitat

Critical habitat for the SONCC coho salmon ESU encompasses accessible reaches of all rivers (including estuarine areas and tributaries) between Cape Blanco, Oregon and Punta Gorda, California (64 FR 24049, May 5, 1999). Excluded are: (1) areas above specific dams identified in the FR notice, (2) areas above longstanding natural impassible barriers (*i.e.*, natural waterfalls in existence for at least several hundred years), and (3) tribal lands.

Designated critical habitat for SONCC coho salmon overlaps the project action area. In designating critical habitat for SONCC coho salmon, NMFS focused on the known physical and biological features within the designated area that are essential to the conservation of the species. These essential features may include, but are not limited to, spawning sites, food resources, water quality and quantity, and riparian vegetation. Within the essential habitat types (spawning, rearing, migration corridors), essential features of coho salmon critical habitat include adequate (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 (64 FR 24049, May 5, 1999). The current condition of critical habitat for SONCC coho salmon is

discussed in the factors affecting the species below.

C. Conservation Value of Critical Habitat

The essential habitat types of designated critical habitat for SONCC coho salmon and PCEs of designated critical habitat for NC steelhead and CC Chinook salmon are those accessible freshwater habitat areas that support spawning, incubation and rearing, migratory corridors free of obstruction or excessive predation, and estuarine areas with good water quality and that are free of excessive predation. Timber harvest and associated activities, road construction, urbanization and increased impervious surfaces, migration barriers, water diversions, and large dams throughout a large portion of the freshwater range of the ESUs and DPS continue to result in habitat degradation, reduction of spawning and rearing habitats, and reduction of stream flows. The result of these continuing land management practices in many locations has limited reproductive success, reduced rearing habitat quality and quantity, and caused migration barriers to both juveniles and adults. These factors limit the conservation value *(i.e.*, limiting the numbers of salmonids that can be supported) of designated critical habitat within freshwater habitats at the ESU/DPS scale.

Watershed restoration activities have improved freshwater critical habitat conditions in some areas, especially on Federal lands. In addition, the five northern California counties affected by the Federal listing of coho salmon (which includes Humboldt County) have created a 5 County Conservation Plan that will establish continuity among the counties for managing anadromous fish stocks (Voight and Waldvogel 2002). The plan identifies priorities for monitoring, assessment, and habitat restoration projects.

Although watershed restoration activities have improved freshwater critical habitat conditions in isolated areas, reduced habitat complexity, poor water quality, and reduced habitat availability as a result of continuing land management practices continue to persist in many locations.

D. Current Condition of the Critical Habitat

1. NC Steelhead

The condition of NC steelhead critical habitat, specifically its ability to provide for their conservation, has been degraded from conditions known to support viable salmonid populations. NMFS has determined that present depressed population conditions are, in part, the result of the following human-induced factors affecting critical habitat: logging, agricultural and mining activities, urbanization, stream channelization, dams, freshwater and estuarine wetland loss, and water withdrawals for irrigation. All of these factors were identified when NC steelhead were listed as threatened under the ESA, and they all continue to affect this DPS. However, efforts to improve NC steelhead critical habitat have been widespread and are expected to benefit the DPS.

2. CC Chinook Salmon

The condition of CC Chinook salmon critical habitat, specifically its ability to provide for their conservation, has been degraded from conditions known to support viable salmonid populations. NMFS has determined that present depressed population conditions are, in part, the result of the following human-induced factors affecting critical habitat: logging, agricultural and mining activities, urbanization, stream channelization, dams, freshwater and estuarine wetland loss, and water withdrawals for irrigation. All of these factors were identified when CC Chinook salmon were listed as threatened under the ESA, and they all continue to affect this ESU. However, efforts to improve CC Chinook salmon critical habitat have been widespread and are expected to benefit the ESU.

3. SONCC Coho Salmon

The condition of SONCC coho salmon critical habitat, specifically its ability to provide for their conservation, has been degraded from conditions known to support viable salmonid populations. NMFS has determined that present depressed population conditions are, in part, the result of the following human-induced factors affecting critical habitat: logging, agricultural and mining activities, urbanization, stream channelization, dams, freshwater and estuarine wetland loss, and water withdrawals for irrigation. All of these factors were identified when SONCC coho salmon were listed as threatened under the ESA, and they all continue to affect this ESU. However, efforts to improve SONCC coho salmon critical habitat have been widespread and are expected to benefit the ESU. Within the SONCC recovery domain, from 2000 to 2006, the following improvements were completed: 242 stream miles have been treated; 31 stream miles of instream habitat were stabilized; 41 cubic feet per second of water has been returned for instream flow; and thousands of acres of upland, riparian, and wetland habitat have been treated (NMFS 2007). Therefore, the condition of SONCC coho salmon critical habitat is likely improved or trending toward improvement compared to when it was designated in 1999.

4. Summary

Although watershed restoration activities have improved freshwater and estuarine critical habitat conditions in isolated areas, reduced habitat complexity, poor water quality, and reduced habitat availability as a result of historical and continuing land management practices persist in many locations and are limiting the conservation value of designated critical habitat within these freshwater and estuarine habitats at the ESU scale.

IV. ENVIRONMENTAL BASELINE

A. Status of Listed Species in the Action Area

NMFS is unaware of any rigorous estimates of salmonid abundance from Jacoby Creek. However, a limited fish survey was conducted in recent years (2007-2010) by CDFG (2010) in

the reach of Jacoby Creek approximately one mile downstream of the project site. Juvenile coho salmon were present mostly during smolt migration in April and May, but were also present in low numbers during the months of the proposed action (June 15 to October 15). The largest number of juvenile coho salmon (14 individuals) captured during the months of the proposed action occurred in August 2008. Six juvenile steelhead were seined from a 40-foot reach in August 2008, but no more than three individuals were captured during a sampling event the following two years. Juvenile CC Chinook salmon are not expected to be encountered in the action area due to their absence in the recent CDFG surveys.

B. Salmonid Habitat within the Action Area

The stream channel within the action area is very low gradient, and readily floods beyond its banks during high-flow events. The channel bankfull width under the bridge is much wider (60 to 70 feet) than the natural channel above and below the bridge (20 to 30 feet). Sediment enters Jacoby Creek upstream of the Old Arcata Road Bridge from a variety of sources including but not limited to road building, timber operations, residential development, and natural erosion processes (*e.g.*, landslides). The excessive accumulation of sediment in the lower reach of Jacoby Creek contributes to flooding events upstream and downstream of the bridge crossing. The stream corridor up and downstream of the bridge has a dense, well developed, shady over-story of alders, willows, and blackberry bramble, which provide shade for fish during warm summer temperatures. The streambed is mostly composed of medium sized gravel, along with sand, silt, and fines. NMFS is unaware of water temperature data for the action area, but temperatures recorded downstream (CDFG 2010) are preferable for all three species of listed salmonids. The action area provides rearing habitat for juvenile salmonids and also serves as a corridor for out-migrant smolts. Salmonid habitat affected by the project will be the work area as well as the reach immediately downstream as sediment from the project will likely travel a short distance.

C. Factors Affecting Species Environment within the Action Area

Urban and rural residential development, flood control and bank stabilization, legacy timber harvest, and agricultural activities likely contribute to excessive sedimentation, low woody debris abundance and recruitment, elevated water temperature, chemical toxicity, and atypical stream hydrology throughout the Jacoby Creek watershed including the action area. These factors likely limit habitat in the action area. Downstream gradient issues impede water flow, and have consequently affect sediment transport and temperature. An estimated 9 feet of sediment (approximately 910 yds^3) has accumulated within the County's 60-foot right-of-way since the bridge's construction in 1988 (A. Bundschuh, pers. comm.).

V. EFFECTS OF THE ACTION

The project activities that are expected to affect listed salmonids include fish relocation, dewatering of stream reaches, and increased mobilization of sediment. The potential effects of these activities are presented in detail below.

A. Fish Relocation Activities

Before and during dewatering the construction sites, the applicant proposes to capture and relocate fish away from the work site to avoid direct mortality and minimize the possible stranding of fish in isolated pools. Fish in the project site will electrofished and then transported and released to a suitable habitat outside of the action area. Data to precisely quantify the amount of steelhead and coho salmon that will be relocated prior to construction are not available. However, given the timing of the project, NMFS anticipates only a small number of listed salmonids to be present during the proposed action. Fish relocation activities will occur during the summer and fall low-flow periods after smolts have emigrated and before adults have immigrated to the proposed project site.

Fish relocation activities pose a risk of injury or mortality to rearing juvenile salmonids. Any fish collecting gear, whether passive (Hubert 1996) or active (Hayes *et al.* 1996) has some associated risk to fish, including stress, disease transmission, injury, or death. The amount of unintentional injury and mortality attributable to fish capture varies widely depending on the method used, the ambient conditions, and the expertise and experience of the field crew. Since fish relocation activities will be conducted by qualified fisheries biologists following both the CDFG and NMFS guidelines, direct effects to and mortality of juvenile steelhead during capture will be minimized. Data from two years of similar salmonid relocation activities in Humboldt County indicate that average mortality rate is below one percent (Collins 2004). Those fish that avoid capture may be exposed to risks described in the following section on dewatering.

Although sites selected for relocating fish should have ample habitat, in some instances relocated fish may endure short-term stress from crowding at the relocation sites. Relocated fish may also have to compete with other fish causing increased competition for available resources such as food and habitat (Keeley 2003). Some of the fish released at the relocation sites may choose not to remain in these areas and may move either upstream or downstream to areas that have more habitat and a lower density of fish. As each fish moves, competition remains either localized to a small area or quickly diminishes as fish disperse. NMFS cannot accurately estimate the number of fish affected by competition, but does not believe this impact will be large enough to affect the fitness of individual fish. For example, the use of multiple release sites will help facilitate fish dispersion, limiting competition. Once the project is complete, juvenile salmonid rearing habitat will be restored to the dewatered area.

B. Dewatering

NMFS anticipates temporary changes in stream flow within and downstream of project sites during dewatering activities. These fluctuations in flow are anticipated to be small, gradual, and short-term. Stream flow in the vicinity of the project sites should be the same as free-flowing conditions except during dewatering and at the dewatered reach where stream flow is bypassed. Stream flow diversion and project site dewatering are expected to cause temporary loss, alteration, and reduction of aquatic habitat.

Stream flow diversions could harm individual rearing juvenile salmonids by concentrating or stranding them in residual wetted areas before they are relocated (Cushman 1985). Rearing steelhead could be killed or injured if crushed during diversion activities, though direct mortality is expected to be minimal due to relocation efforts prior to installation of the diversion. Juvenile salmonids that avoid capture in the project site will likely die during dewatering activities. NMFS expects that the number of juvenile salmonids that will be killed as a result of stranding during dewatering activities will be significantly less than those killed during relocation (below one percent).

Benthic (*i.e.*, bottom dwelling) aquatic macroinvertebrates within the project site may be killed or their abundance reduced when the creek is dewatered (Cushman 1985). However, effects to aquatic macroinvertebrates resulting from stream flow diversions and dewatering will be temporary because construction activities will be relatively short-lived, and rapid recolonization (about two to three months) of disturbed areas by macroinvertebrates is expected to follow (Cushman 1985, Thomas 1985, Harvey 1986). In addition, the effect of macroinvertebrate loss on juvenile salmonids is likely to be negligible because juvenile salmonids are not anticipated in the areas downstream of the dewatered work area. Based on this information, the loss of aquatic macroinvertebrates as a result of dewatering activities is not expected to adversely affect threatened salmonids.

C. Increased Mobilization of Sediment within the Stream Channel

NMFS anticipates that short-term increases in turbidity will occur during proposed dewatering activities, construction and removal of cofferdams, and sediment removal activities. In-stream and near-stream construction activities may cause temporary increases in turbidity (reviewed in Furniss *et al.* 1991, Reeves *et al.* 1991, and Spence *et al.* 1996). Sediment may affect salmonids feeding behavior and efficiency, resulting in reduced growth rates. High turbidity concentrations can reduce dissolved oxygen in the water column, effecting respiratory function. Also, because of turbidity, salmonids disperse from established territories, which can displace fish into less suitable habitat and/or increase competition and predation, decreasing chances of survival.

Much of the research discussed in the previous paragraph focused on turbidity levels higher than those expected to occur during implementation of the proposed activities. Recent monitoring of newly replaced culverts within Humboldt County indicated temporary increases in turbidity following winter storm events in which the measured turbidity was generally less than the turbidity threshold commonly cited as beginning to cause minor behavioral changes (Henley *et al.* 2000), and always less than turbidity levels necessary to injure or kill salmonids. Impacts associated with degraded water quality will likely be limited to behavioral effects, such as temporarily vacating preferred habitat or temporarily reduced feeding efficiency. These behavioral changes are not likely to reduce the fitness of individual salmonids. The County has included minimization measures to reduce the likelihood of sediment from entering the creek. NMFS assumes that these actions will be effective at reducing sedimentation rates. Therefore, any short-term impact associated with turbidity during implementation of this project is expected to be insignificant.

Equipment refueling, fluid leakage, and equipment maintenance near the stream channel pose some risk of contamination of aquatic habitat and subsequent injury or death to listed salmonids. The County has proposed to maintain any and all fuel storage and refueling sites in an upland location well away from the stream channel; that vehicles and construction equipment be in good working condition, showing no signs of fuel or oil leaks, and that any and all servicing of equipment be conducted in an upland location. For instream construction activities, NMFS does not anticipate any localized or appreciable water quality degradation from toxic chemicals or adverse effects to listed salmonids associated with the proposed project, as the stream will be dewatered, giving the applicant and its contractors ample opportunity to attend to any spill prior to toxic chemicals reaching the waters of Jacoby Creek. NMFS anticipates that proposed minimization measures and responses by the County to any accidental spill of toxic materials should be sufficient to restrict the effects to the immediate area and not enter the waterway.

D. Interdependent and Interrelated Actions

Regulations implementing section 7(a)(2) of the ESA require NMFS to consider the effects of activities that are interrelated or interdependent with the proposed Federal action (50 CFR 402.02). Interrelated actions are those that are part of the larger action and depend upon the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consultation. Both interrelated and interdependent activities are assessed by applying the "but for" test which asks whether any action and its resulting impact would occur "but for" the proposed action.

NMFS does not anticipate any interdependent or interrelated actions associated with the proposed action.

VI. CUMULATIVE EFFECTS

Regulations implementing section 7(a)(2) of the ESA require NMFS to consider the 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 (50 CFR 402.02). NMFS did not identify any such activities in the action area. The Humboldt County General Plan update web site (http://co.humboldt.ca.us/gpu/) was used as a source of information. Humboldt County has no other major highway projects planned within the Jacoby Creek basin.

VII. CONCLUSION

After reviewing the best scientific and commercial information available, the current status of NC Steelhead, CC Chinook salmon, and SONCC coho salmon, and their designated critical habitats, the environmental baseline for the action area, the effects of the proposed Jacoby Creek Bridge Sediment Removal Project, and the cumulative effects, it is NMFS' biological opinion that the Project, as proposed, is not likely to jeopardize the continued existence of NC steelhead, CC Chinook salmon, or SONCC coho salmon, and is not likely to result in the destruction or adverse modification of NC steelhead, CC Chinook salmon, or SONCC coho salmon critical habitats.

VIII. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. 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. Harm is further defined by NMFS as an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which 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 the purpose 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 an incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by the Corps and its permittee for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps: (1) fails to assume and implement the terms and conditions, or (2) fails to require any permittee to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to any permit, grant document, or contract, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps 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)).

A. Amount or Extent of Take

A few juvenile steelhead and coho salmon are expected to be captured and relocated, and a small number of fish are likely to be harmed during these efforts. Because mortality resulting from electrofishing is expected to be about one percent (see *Fish Relocation Activities* effects discussion above), and the number of threatened salmonids that will be relocated is anticipated to be a few fish, no more than one juvenile steelhead and one juvenile coho salmon is expected to die. A few fish may avoid relocation efforts and be killed when the work area is dewatered.

B. Effect of the Take

As described in the Opinion, NMFS determined that the level of anticipated incidental take associated with the Project is not likely to jeopardize the continued existence of NC steelhead and SONCC coho salmon.

C. Reasonable and Prudent Measures

NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of NC steelhead and SONCC coho salmon:

1. Undertake measures to minimize take of NC steelhead and SONCC coho salmon resulting from relocation.

2. Prepare and submit a report to document the effects of relocation activities.

D. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, Humboldt County/Corps, and their designees must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:

    A. The applicant shall retain a qualified biologist with expertise in the areas of anadromous salmonid biology, including handling, collecting, and relocating salmonids, salmonid/habitat relationships, and biological monitoring of salmonids. The biologist shall attempt to herd fish away from the area prior to performing any electroshocking. The biologist shall capture fish, by any reasonable means, from the area to be dewatered and relocate them to suitable habitat outside of the project area. Electrofishing, if used, shall be performed by a qualified biologist and conducted according to NMFS and CDFG guidelines.

    B. The biologist shall monitor the construction site during placement and removal of channel diversions and cofferdams to ensure that any take to NC steelhead and SONCC coho salmon are minimized. The biologist shall be on site during all dewatering events to capture, handle, and safely relocate listed salmonids. The County shall notify NMFS biologist Zane Ruddy at (707) 825-5173 or zane.ruddy@noaa.gov 24 hours prior to capture activities in order to provide an opportunity for NMFS staff to observe the activities.

    C. All fish shall be kept in cool, shaded, aerated water protected from excessive noise, jostling, or overcrowding any time they are not in the stream, and fish shall not be removed from this water except when released. To avoid predation, the biologist shall have at least two containers and segregate young-of-year fish from larger age-classes and other potential aquatic predators.

    D. If any dead or injured NC steelhead or SONCC coho salmon are found, the biologist shall contact NMFS biologist Zane Ruddy by phone immediately at (707) 825-5173. The purpose of the contact is to review the activities resulting in take and to determine if additional protective measures are required. All salmonid mortalities shall be retained, placed in an appropriately-sized sealable plastic bag, labeled with the date and location of collection, fork length, and be frozen as soon as possible. Frozen samples shall be retained by the biologist until specific

instructions are provided by NMFS. The biologist may not transfer biological samples to anyone other than NMFS Northern California Office without obtaining prior written approval from the Northern California Office. Any such transfer will be subject to such conditions as NMFS deems appropriate.

2. The following term and condition implements reasonable and prudent measure 2:

   The County shall provide a written report to NMFS by January 15 of each year following implementation. The report shall be submitted to NMFS Northern California Office, 1655 Heindon Road, Arcata California 95521. The report shall contain, at a minimum, the following information:

   A. Fish Relocation – The report shall include a description of the location from which fish were removed and the release site, including: photographs, the date and time of the relocation effort, a description of the equipment and methods used to collect, hold, and transport listed salmonids, whether an electroshocker was used for fish collection, a copy of the logbook, the number of fish relocated by species, the number and species of fish injured or killed, a brief narrative of the circumstances surrounding listed salmonid injuries or mortalities, and a description of any problems which arose during the relocation activities and a statement as to whether or not the activities had any unforeseen effects.

IX. 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, or to develop information.

The County is encouraged to analyze the conveyance conditions of the action area before and after sediment excavation in order to determine the effectiveness of the project. If the removal of sediment is not shown to alleviate flooding, alternative solutions should be developed and proposed for subsequent years. In order to prevent ongoing maintenance activities, NMFS also supports the development of a long-term plan that evaluates and addresses downstream flood controls and improved conveyance capacity for lower Jacoby Creek.

X. REINITIATION NOTICE

This concludes formal consultation on the proposed Jacoby Creek Bridge Sediment Removal Project. 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 action that may affect listed species or critical habitat in a

manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in the biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. In instances where the amount or extent of incidental take is exceeded, formal consultation shall be reinitiated immediately.

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MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT CONSULTATION

I. INTRODUCTION

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267, 16 U.S.C. 1801 *et seq.*), established new requirements for Essential Fish Habitat (EFH) descriptions in Federal fishery management plans and require Federal agencies to consult with the NOAA's National Marine Fisheries Service (NMFS) on activities that may adversely affect EFH. EFH for Pacific Coast salmon has been described in Appendix A, Amendment 14 to the Pacific Coast Salmon Fishery Management Plan (Pacific Fishery Management Council 2000). The U.S. Army Corps of Engineers' (Corps) permitting of sediment removal under the County's individual permit application affects Jacoby Creek, which has been designated EFH for Pacific salmon.

Only species managed under a Federal fishery management plan are covered under the MSFCMA. Coho salmon and Chinook salmon are managed under Federal fishery management plans, whereas steelhead are not managed. Therefore, these EFH conservation recommendations address only coho salmon and Chinook salmon.

II. LIFE HISTORY AND HABITAT REQUIREMENTS

General life history information and Evolutionarily Significant Unit (ESU) status for Southern Oregon/Northern California Coast (SONCC) coho salmon and California Coastal (CC) Chinook are discussed in the associated biological opinion. Further detailed information on coho salmon ESUs is available in the NOAA Fisheries status review for coho salmon from Washington, Oregon, and California (Weitkamp *et al.* 1995). Detailed information on Chinook salmon ESUs available in the NOAA Fisheries status review for Chinook salmon from Washington, Idaho, Oregon, and California (Myers *et al.* 1998).

III. PROPOSED ACTION

The proposed action is the removal of sediment within the right-of-way of Jacoby Creek Bridge in Humboldt County, California. A detailed description is provided in the associated biological opinion.

IV. EFFECTS OF THE PROPOSED ACTION

Effects of the proposed action on coho salmon and Chinook salmon EFH are those associated with habitat degradation from dewatering the wetted channel, increased sedimentation, and channel instability. These effects are described in the associated biological opinion.

V. CONCLUSION

After reviewing the effects of the project, NOAA Fisheries has determined that the proposed action would adversely affect coho salmon and Chinook salmon EFH.

VI. EFH CONSERVATION RECOMMENDATIONS

NOAA Fisheries has no conservation measures to recommend over what is currently proposed. Conservation recommendations provided in past sediment removal consultations were incorporated into the proposed action.

VII. FEDERAL AGENCY STATUTORY REQUIREMENTS

The MSFCMA [section 305(b)(4)(B)] and Federal regulations [50 CFR § 600.920(j)] to implement the EFH provisions of the MSFCMA require Federal action agencies to provide a written response to EFH conservation recommendations within 30 days of their receipt. A preliminary response is acceptable if a final response cannot be completed within 30 days. The final response must include a description of measures proposed to avoid, mitigate, or offset the adverse effects of the activity on EFH. If your response is inconsistent with our EFH conservation recommendations, the Corps must provide an explanation for not implementing those recommendations.

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NORTH COAST DISTRICT OFFICE
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EXHIBIT NO. 5
APPLICATION NO.
1-07-041-A1 - HUMBOLDT CO. PUBLIC WORKS DEPARTMENT
STAFF REPORT FOR CDP NO. 1-07-041 AS APPROVED BY THE COMMISSION ON 12/12/08
(1 of 19)

Filed:	April 17, 2008
49th Day:	June 5, 2008
180th Day:	October 14, 2008
Staff:	Melissa B. Kraemer
Staff Report:	November 21, 2008
Hearing Date:	December 12, 2008
Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.:	**1-07-041**
APPLICANT:	**Humboldt County Public Works Department**
PROJECT LOCATION:	Within the County right-of-way beneath Jacoby Creek Bridge at Post Mile 7.5 on Old Arcata Road, approximately 400 feet north of Graham Road, on the outskirts of Arcata, Humboldt County.
PROJECT DESCRIPTION:	Removal of accumulated sediment for flood control purposes from the channel of Jacoby Creek within a 3,600-square-foot area beneath the 90-foot-long by 36-foot-wide Jacoby Creek Bridge and adjacent 12-foot-wide (upstream and downstream) County right-of-ways on a periodic basis as necessary for up to 10 years.
APPROVALS RECEIVED:	(1) U.S. Army Corps of Engineers Clean Water Act Section 404 and Rivers and Harbors Act Section 10 Nationwide Permit (NWP) No. 3 (Maintenance) (File No. 2007-00778 authorized pending CDP approval) (2) California Department of Fish and Game CFGC Sec. 1603 Streambed Alteration Agreement No. R1-07-0556 (3) North Coast Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification WDID No. 1B07145WNHU
SUBSTANTIVE FILE DOCUMENTS:	Humboldt County Local Coastal Program

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval with special conditions of the proposed development.

The project is located within the County right-of-way beneath Jacoby Creek Bridge at Post Mile 7.5 on Old Arcata Road, approximately 400 feet north of Graham Road, on the outskirts of Arcata, Humboldt County (Exhibit Nos. 1 and 2). The Jacoby Creek Bridge is an approximately 36-foot-wide by 90-foot-long concrete structure, and the County right-of-way extends an additional 12 feet beyond the bridge width both upstream (southward) and downstream (northward). The upstream end of the project coincides with the inland boundary of the coastal zone. Jacoby Creek Bridge is located approximately one mile from the creek's entrance into Humboldt Bay. The location of the bridge is above the tidally influenced portion of Jacoby Creek. The elevation of the channel at the project site is approximately 13 to 15 feet above mean sea level. The channel reach downstream of the bridge is characterized by a low-gradient, narrow channel that meanders through mostly agricultural land.

A channel capacity analysis completed in 2007 for the Jacoby Creek Bridge area estimates that over 900 cubic yards of sediment have accumulated within the project area since the bridge was constructed in 1988. Most of this sediment has been deposited under the bridge and on the upper stream banks, near the bridge abutments (see Exhibit No. 4, photos). Clearance under the bridge averages 2 feet near the abutments and 6 feet near the wetted channel. The excessive sediment accumulation contributes to annual flooding events that impact vehicular traffic along Old Arcata Road, a County road, as well as adjacent residential property and agricultural land downstream and upstream of the bridge. The road is temporarily closed (impassable) on an almost annual basis due to flooding of the roadway by the creek.

The project area encompasses approximately 3,600 square feet of County right-of-way beneath the bridge within the channel and on the banks of Jacoby Creek. The County proposes to remove accumulated sediment using hand-operated, light-weight, mechanized equipment and hand tools. Work would be performed during the low-flow season and the driest period of the year (approximately September). A small front-end loader ("Bobcat") would be used to clear an access route from the inland (southeastern) shoulder of Old Arcata Road to the top of the creek bank and would also be used to haul excavated sediment to a temporary stockpile site located away from the creek in an upland area on an adjacent property owned by the Jacoby Creek Land Trust (outside of the coastal zone). Mechanized equipment would not enter the wetted channel at any time, nor would sediment be removed from the wetted channel. Once sediment removal is complete, the area would be raked by hand and left smooth, free-draining, and without depressions.

The County is seeking multiyear authorization for the proposed work. The County proposes to monitor, on an annual basis, the amount of accumulated sediment within the bridge right-of-way, and if the accumulated sediment is found to be greater than 400 cubic yards in any given year,

then the County would excavate accumulated sediment as described above. The County estimates that sediment removal activities would occur one to three times over a 5-year period.

Staff believes that the substantial streambed alteration associated with the proposed project is allowable as a flood control project consistent with the limitations of Coastal Act Section 30236(2) because (a) there is currently no other feasible method for protecting existing structures in the floodplain; and (b) such protection is necessary for public safety or to protect existing development. Staff believes that without the proposed project to remove accumulated sediment from the channel, the area will continue to aggrade with sediment deposits transported from the creek's upper reaches, further reducing the hydraulic competence and capacity of the channel. As it currently does on an almost annual basis each rainy season, the bridge will continue to be over-topped by creek flows generated from moderate high flow events resulting in localized flooding of this heavily traveled public roadway as well as flooding of adjacent and downstream residential and agricultural property. This periodic flooding seriously jeopardizes the public safety of travelers along Old Arcata Road and could involve extensive damage to existing structures within the lower creek drainage.

Staff recommends Special Condition Nos. 1 through 5 to ensure that the proposed project would be consistent with the requirements of Section 30236 that the best feasible mitigation measures be provided to minimize or avoid the significant adverse environmental effects of the proposed project on coastal resources. The applicant has been issued several other permits and associated authorizations for the project that contain terms and conditions similar to those either proposed by the applicant or recommended below to avoid or minimize the significant adverse impacts of the proposed project on coastal resources and the environment (see "Other Approvals" listed on page 2).

Special Condition No. 1 would require adherence to various construction-related responsibilities. Special Condition No. 2 would require adherence to certain standards and limitations for site revegetation. Special Condition No. 3 would require submittal of a final staging area and stockpiling plan to ensure that staged and stockpiled materials and equipment in no way impact coastal waters or wetlands. Special Condition No. 4 would require adherence to certain standards and limitations for the protection of riparian vegetation at the project site. Finally, Special Condition No. 5 would require submittal of an annual sediment management plan, prior to commencement of sediment removal work in any year during permit authorization that sediment removal activities are proposed demonstrating that sediment removal operations shall conform to all provisions specified in Special Conditions Nos. 1 through 5 of Coastal Development Permit No. 1-07-041.

Additionally, staff recommends Special Condition No. 6, which would limit the authorized development to five years, but grant the Executive Director the authority to approve a request for an additional five years of sediment removal operations provided that the request would not substantively alter the project description and/or require modifications of the conditions due to new information or technology or other changed circumstances.

Staff believes that the proposed project, as conditioned, is consistent with all applicable policies of the Coastal Act.

The Motion to adopt the Staff Recommendation is found on Page 4.

STAFF NOTES

1. Jurisdiction and Standard of Review

The project site is located in the Commission's retained permit jurisdiction. The County of Humboldt has a certified LCP, but the site is within an area shown on State Lands Commission maps over which the State retains a public trust interest. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

I. MOTION, STAFF RECOMMENDATION, & RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-07-041 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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 Permit:

The Commission hereby approves a 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: See Appendix A.

III. SPECIAL CONDITIONS:

1. Construction Responsibilities

The permittee shall comply with the following Best Management Practices (BMPs) and construction-related responsibilities:

A. No construction materials, debris, or waste shall be placed or stored where it may be subject to entering coastal waters or wetlands, and any debris discharged into coastal waters or wetlands shall be recovered immediately and disposed of properly;

B. Any and all debris resulting from construction activities shall be removed from the project site immediately upon cessation of seasonal construction activities and disposed of at an authorized upland location;

C. All project activities shall be conducted during the low-flow period of June 15 through October 15 only;

D. Project activities shall be implemented in dry weather conditions only. If rainfall is forecast at any point during construction operations, any exposed soil areas shall be promptly mulched or covered with plastic sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation;

E. Any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas. Mechanized equipment and other vehicles used during the construction process shall not be stored or re-fueled within 100 feet of coastal waters or wetlands;

F. Fuels, lubricants, solvents, and similar materials shall not be allowed to enter coastal waters or wetlands. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call. Any accidental spill shall be rapidly contained and cleaned up;

G. Heavy equipment shall not operate within the wetted channel;

H. Appropriate sediment control measures shall be implemented for the duration of construction activities;

I. The work area within the bank full channel shall be left smooth, free draining, and without depressions that could lead to fish stranding;

J. Sediment removal activities shall (1) not cause braiding of the stream channel, (2) not be performed within the low flow channel, and (3) leave a stable low flow channel with a minimum 6-inch vertical offset between the channel bottom and the excavation area within the project reach in an effort to contain low to moderate flows in a single channel;

K. No riparian trees within or adjacent to the project area shall be disturbed; and

L. Construction protocols and project activities shall conform to all provisions specified in Special Conditions Nos. 1 through 6 of Coastal Development Permit No. 1-07-041.

2. Site Revegetation

Erosion control seeding and other revegetation undertaken in the project area shall comply with the following standards and limitations:

A. Only native plant species shall be planted and/or seeded. All proposed plantings and/or seeds shall be obtained from local genetic stocks within Humboldt County. If documentation is provided to the Executive Director that demonstrates that native plantings and/or seeds from local genetic stock are not available, native plantings and/or seeds obtained from genetic stock outside of the local area may be used. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property;

B. Seeding and mulching (with weed-free rice straw) for erosion control purposes shall be completed prior to the onset of any runoff-generating precipitation. Any other site revegetation (e.g., installation of riparian plantings) shall be conducted by the end of the first full optimal planting season that occurs after completion of construction activities;

C. The use of rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone, Brodifacoum or Diphacinone shall not be used.

3. Final Staging Area & Stockpiling Plan

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-07-041,** the applicant shall submit a final Staging Area and Stockpiling Plan for the review and approval of the Executive Director, which, at a minimum, demonstrates the following:

1) All staging and stockpiling areas shall be located outside of wetlands and other environmentally sensitive habitat areas; and

2) Appropriate sediment and runoff control devices shall be implemented around staging and stockpiling areas to ensure containment of sediment and sediment-laden runoff within the bounds of the designated area.

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

4. Protection of Riparian Vegetation

The permittee shall undertake development authorized by CDP No. 1-07-041 in accordance with the following measures to avoid direct and indirect impacts to riparian vegetation at the project site:

A. Construction access to the project site shall be from the right bank (looking downstream) of the upstream side of the bridge only as shown on Exhibit No. 3. The downstream side of the channel shall be accessed via a wooden platform placed across the channel (elevated atop sandbag abutments) on the downstream side of the bridge to avoid impacts to riparian vegetation along the streambank in this area. Construction equipment and workers shall use the platform to haul excavated material under the bridge to the upstream side of the bridge for transfer along the access route to the designated stockpile areas; and

B. Sediment removal along the left bank (looking downstream) on the downstream side of the bridge shall be minimized and completed in such a way so as to avoid direct and indirect impacts (e.g., bank instability) to riparian vegetation by not removing portions of the bank that support riparian vegetation and not reconfiguring the bank full channel in a way that creates sharp angles in the bank that would be particularly prone to streambank erosion.

5. Submittal of Annual Sediment Management Plans

PRIOR TO COMMENCEMENT OF SEDIMENT REMOVAL OPERATIONS IN ANY YEAR IN WHHICH SEDIMENT REMOVAL IS CONDUCTED, the applicant shall submit, for the review and approval of the Executive Director, a Sediment Management Plan for that season's proposed sediment removal work consistent with all terms and conditions of Coastal Development Permit No. 1-07-041.

A. The Annual Sediment Management Plan shall demonstrate that sediment removal operations shall conform to all provisions specified in Special Conditions Nos. 1 through 5 of Coastal Development Permit No. 1-07-041 including, but not limited to, the following:

1) All project activities shall be conducted during the low-flow period of June 15 through October 15 only;

2) Heavy equipment shall not operate within the wetted channel;

3) The work area within the bank full channel shall be left smooth, free draining, and without depressions that could lead to fish stranding;

4) Sediment removal activities shall (a) not cause braiding of the stream channel, (b) not be performed within the low flow channel, and (c) leave a stable low flow channel with a minimum 6-inch vertical offset between the channel bottom and the excavation area within the project reach in an effort to contain low to moderate flows in a single channel;

5) Sediment removal along the left bank on the downstream side of the bridge shall be minimized and completed in such a way so as to avoid direct and indirect

impacts (e.g., bank instability) to riparian vegetation by not removing portions of the bank that support riparian vegetation and not reconfiguring the bank full channel in a way that creates sharp angles in the bank that would be particularly prone to stream bank erosion; and

6) All staging and stockpiling areas shall be located outside of wetlands and other environmentally sensitive habitat areas.

B. The Annual Sediment Management Plan shall include, at a minimum, the following components:

1) A site plan and typical cross section(s) of the proposed sediment removal work area;

2) A schedule for implementing the proposed sediment removal activities;

3) A staging and stockpiling plan completed pursuant to Special Condition No. 3 of Coastal Development Permit No. 1-07-041; and

4) Copies of all other necessary agency approvals for the proposed work.

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

6. Length of Development Authorization

Development authorized by this permit is valid for five (5) years from the date of Commission approval (until December 12, 2013). One request for an additional five-year period of development authorization may be accepted, reviewed, and approved by the Executive Director for a maximum total of ten (10) years of development authorization (until December 12, 2018), provided that the request would not substantively alter the project description and/or require modifications of conditions due to new information or technology or other changed circumstances. The request for an additional five-year period of development authorization shall be made prior to December 12, 2013. If the request for an additional five-year period would substantively alter the project description and/or require modifications of conditions due to new information or technology or other changed circumstances, an amendment to this permit will be necessary. All sediment removal operations proposed after December 12, 2018, or after 2013 if no additional five-year period of authorization has been granted by the Executive Director or amendment has been obtained, shall require a new coastal development permit.

7. Assumption of Risk

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from flooding; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this

permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

IV. FINDINGS & DECLARATIONS

The Commission hereby finds and declares as follows:

A. Environmental Setting & Project Description

The project is located within the County right-of-way beneath Jacoby Creek Bridge at Post Mile 7.5 on Old Arcata Road, approximately 400 feet north of Graham Road, on the outskirts of Arcata, Humboldt County (Exhibit Nos. 1 and 2). The Jacoby Creek Bridge is an approximately 36-foot-wide by 90-foot-long concrete structure, and the County right-of-way extends an additional 12 feet beyond the bridge width both upstream (southward) and downstream (northward). The bridge crosses the stream in a generally southwest/northeast direction, while the stream flows generally in a southeast to northwest direction under the bridge (see Exhibit No. 3). The upstream end of the project coincides with the inland boundary of the coastal zone. Jacoby Creek Bridge is located approximately one mile from the creek's entrance into Humboldt Bay. The location of the bridge is above the tidally influenced portion of Jacoby Creek. The elevation of the channel at the project site is approximately 13 to 15 feet above mean sea level. The channel reach downstream of the bridge is characterized by a low-gradient, narrow channel that meanders through mostly agricultural land.

The Jacoby Creek watershed comprises a 17-square-mile area that contains 26 miles of perennial waterways and just under 50 miles of intermittent tributaries. The watershed is roughly 9 miles long and 2 miles wide, and elevations range from sea level to 2,388 feet at Boynton Prairie. The main stream channel is approximately 11 miles long and is a 5th-order stream. First- and 2nd-order streams contribute to most of the stream mileage in this basin. Jacoby Creek drains into the northeastern portion of Humboldt Bay, near the Arcata Marsh. The tidal marshes and lowland grass plain near the mouth of Jacoby Creek (approximately 1 mile downstream from the project area) provide abundant habitat for a diversity of migratory waterfowl and shorebirds. Portions of Jacoby Creek and its tributaries are inhabited by a diversity of sensitive fish species including Coho salmon, Chinook salmon, Steelhead trout, Coastal cutthroat trout, and Tidewater goby.

A channel capacity analysis completed in 2007 for the Jacoby Creek Bridge area estimates that over 900 cubic yards of sediment have accumulated within the project area since the bridge was constructed in 1988. Most of this sediment has been deposited under the bridge and on the upper stream banks, near the bridge abutments (see Exhibit No. 4, photos). Clearance under the bridge averages 2 feet near the abutments and 6 feet near the wetted channel. The excessive sediment

accumulation contributes to annual flooding events that impact vehicular traffic along Old Arcata Road, a County road, as well as adjacent residential property and agricultural land downstream and upstream of the bridge. The road is temporarily closed (impassable) on an almost annual basis due to flooding of the roadway by the creek.

The project area encompasses approximately 3,600 square feet of County right-of-way beneath the bridge within the channel and on the banks of Jacoby Creek. The County proposes to remove accumulated sediment using hand-operated, light-weight, mechanized equipment and hand tools. Work would be performed during the low-flow season and the driest period of the year (approximately September). A small front-end loader ("Bobcat") would be used to clear an access route from the inland (southeastern) shoulder of Old Arcata Road to the top of the creek bank and would also be used to haul excavated sediment to a temporary stockpile site located away from the creek in an upland area on an adjacent property owned by the Jacoby Creek Land Trust (outside of the coastal zone). Mechanized equipment would not enter the wetted channel at any time, nor would sediment be removed from the wetted channel. Once sediment removal is complete, the area would be raked by hand and left smooth, free-draining, and without depressions.

The County is seeking multiyear authorization for the proposed work. The County proposes to monitor, on an annual basis, the amount of accumulated sediment within the bridge right-of-way, and if the accumulated sediment is found to be greater than 400 cubic yards in any given year, then the County would excavate accumulated sediment as described above. The County estimates that sediment removal activities would occur one to three times over a 5-year period.

The County proposes to use sand bags and silt fences to separate the work area from the low-flow water elevation of the creek. The County also proposes to access the downstream side of the channel via a wooden platform placed across the channel (elevated atop sandbag abutments) on the downstream side of the bridge to avoid impacts to riparian vegetation along the streambank in this area. The low-profile loader and workers would use the platform to haul excavated material to the upstream side of the channel, under the bridge to the upstream side of the bridge, for transfer to the stockpile areas. Rakes and hoes would be used to smooth the disturbed areas, remove depressions, and restore gradual slopes along the streambanks.

The Commission notes that the applicant has been issued several other permits and associated authorizations for the project that contain terms and conditions similar to those either proposed by the applicant or recommended below to avoid or minimize the significant adverse impacts of the proposed project on coastal resources and the environment (see "Other Approvals" listed on page 2).

B. Development Within Coastal Rivers & Streams

1. Applicable Coastal Act Policies and Standards:

Section 30236 of the Coastal Act provides the following:

> *Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.* [Emphases added.]

Section 30236 sets forth a number of different limitations on what development may be allowed that causes substantial alteration of rivers and streams. For analysis purposes, a particular development proposal must be shown to be for one of three purposes: (1) for a necessary water supply project; (2) flood control projects where there is no other feasible methods for protection of existing structures within the floodplain and the project is necessary for public safety and the protection of existing development; or (3) primarily for fish and wildlife habitat improvement. In addition, the development proposed must provide the best mitigation measures feasible to minimize the significant adverse environmental effects of the subject channelization, damming, or other substantial alteration of a river or stream.

2. Consistency Analysis:

a) Permissible Uses for Channelization & Substantial Alteration of Streams

The first test set forth above is that any proposed channelization or other substantial alteration of a river or stream may be allowed only for three purposes enumerated in Section 30236, including "*flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development.*" The proposed project entails the management of accumulated sediment within the Old Arcata Road/Jacoby Creek Bridge right-of-way to protect Old Arcata Road and surrounding private properties containing residences and farm land. Thus, the substantial streambed alteration associated with the proposed project is allowable as a flood control project consistent with the limitations of Section 30236(2) of the Coastal Act provided: (a) there is no other feasible method for protecting existing structures in the floodplain; and (b) such protection is necessary for public safety or to protect existing development.

(i) Availability of Other Feasible Methods for Protecting Floodplain Structures

Flooding hazards in the lower Jacoby Creek drainage could hypothetically be managed through other methods than proposed. For example, a flood control dam hypothetically could be constructed upstream, impounding floodwaters into a reservoir and allowing their release over time at flow rates that would not result in inundation of lands within the lower watershed. Another hypothetical option would be to route Jacoby Creek around flood-prone areas in the lower drainage through a bypass canal that would convey and discharge floodwaters safely into Humboldt Bay. There also are options for flood hazard mitigation downstream of the Jacoby Creek Bridge (some of which are being undertaken by the City of Arcata using grant funds received from the Wildlife Conservation Board and the National Fish and Wildlife Foundation), such as increasing the hydraulic capacity of the lower channel, upgrading tidegate and crossing structures, and increasing riparian vegetative cover. However, the County of Humboldt does not possess either the land base or the capital necessary to develop such large public works facilities.

Notwithstanding these financial limitations, damming or diversions would result in far greater and wide-reaching significant adverse environmental impacts than would the proposed sediment management program. Thus, the Commission finds that no other feasible measures currently exist to protect Old Arcata Road and surrounding residences and farm land from flooding within the lower Jacoby Creek floodplain.

(ii) Necessity of Project for Public Safety or to Protect Existing Structures

The proposed sediment management project is necessary to prevent a continuation of the periodic flooding of the County road (Old Arcata Road) and surrounding residential and agricultural properties in the lower watershed. Without the proposed project to remove accumulated sediment from the channel, the area will continue to aggrade with sediment deposits transported from the creek's upper reaches, further reducing the hydraulic competence and capacity of the channel. As it currently does on an almost annual basis each rainy season, the bridge will continue to be over-topped by creek flows generated from moderate high flow events resulting in localized flooding of this heavily traveled public roadway as well as flooding of adjacent and downstream residential and agricultural property. This periodic flooding seriously jeopardizes the public safety of travelers along Old Arcata Road and could involve extensive damage to existing structures within the lower creek drainage. Accordingly, the Commission finds that the proposed sediment management project is necessary for public safety and the protection of existing development.

b) Incorporation of the Best Mitigation Measures Feasible

The second test set forth by the stream alteration policies of Section 30236 of the Coastal Act is whether the best feasible mitigation measures have been provided to avoid or minimize the significant adverse environmental impacts of the subject channelization, damming, and/or substantial alteration of rivers or streams.

(i) Protection of Sensitive Fish Species and Aquatic Habitat

The proposed sediment management project would be conducted in a riverine environment and could have potentially significant adverse effects on a number of threatened, endangered, and special status species and/or their habitats. For example, there are various sensitive fish species that inhabit Jacoby Creek that could potentially be adversely affected by proposed project activities. Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), and Steelhead trout (*Oncorhynchus mykiss*) all spawn and rear within Jacoby Creek, and the creek is designated critical habitat for the three sensitive salmonid species. Additionally, Jacoby Creek provides habitat for Coastal Cutthroat trout (*Oncorhynchus clarki clarki*), another sensitive fish species with known occurrences in the project area. The proposed project could impact fish habitat by increasing turbidity levels in the creek, and sensitive fish individuals could be directly impacted during channel excavation if work were to occur within the wetted channel.

According to the informal consultation completed for the project by the National Marine Fisheries Service (NOAA Fisheries) dated June 11, 2008, it is possible that juvenile sensitive fish species may be present during the summer months when the project is proposed to be

implemented, but no sensitive adult fish are expected to be present during the typically low flow period of June 15 through October 15 (the period for which sediment removal is proposed). NOAA-Fisheries concludes that the proposed project is not likely to adversely affect sensitive salmonids or their designated critical habitats. NOAA-Fisheries bases this conclusion on the fact that the project proposes to implement the following impact minimization measures: (1) heavy equipment will not operate in the wetted channel; (2) sediment control measures will be implemented; (3) sediment removal activities will be conducted during the low flow season only (June 15 to October 15); (4) sediment removal activities will be implemented in dry weather conditions only; (5) the work area will be left smooth and free draining, without depressions that could strand fish when the flows increase; and (6) equipment will be maintained to ensure that there is no leakage of fuels, lubricants, or other similar material, and spill kits will be placed on all equipment.

The Department of Fish and Game (DFG), in its issuance of a Streambed Alteration Agreement for the project (see "Other Approvals" page 2), determined that the project would not likely adversely affect sensitive fish or other aquatic and riparian species provided that various mitigation measures were adhered to, including many of those measures listed above. Th e Department attached general and site-specific conditions of approval to its Streambed Alteration Agreement, including, among others, (1) all disturbed soils shall be seeded and mulched prior to the onset of runoff-generating precipitation; (2) no riparian trees within or adjacent to the project area shall be disturbed; and (3) sediment removal activities shall not cause braiding of the stream channel, and a stable streambank with a minimum height of 6 inches from the channel bottom shall be left in place within the project reach in an effort to contain low to moderate flows in a single channel.

Therefore, to avoid or minimize the significant adverse environmental effects of the proposed project on sensitive fish species and the aquatic habitat of Jacoby Creek, the Commission incorporates the above provisions, among others, into the attached special conditions. **Special Condition No. 1** requires adherence to various construction-related responsibilities including (a) no construction materials, debris, or waste shall be placed or stored where it may be subject to entering coastal waters or wetlands, and any debris discharged into coastal waters or wetlands shall be recovered immediately and disposed of properly; (b) any and all debris resulting from construction activities shall be removed from the project site immediately upon cessation of seasonal construction activities and disposed of at an authorized upland location; (c) all project activities shall be conducted during the low-flow period of June 15 through October 15 only; (d) project activities shall be implemented in dry weather conditions only; (e) any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas; (f) fuels, lubricants, solvents, and similar materials shall not be allowed to enter coastal waters or wetlands, and hazardous materials management equipment shall be available immediately on-hand at the project site; (g) heavy equipment shall not operate within the wetted channel; (h) appropriate sediment control measures shall be implemented for the duration of construction activities; (i) the work area within the bank full channel shall be left smooth, free draining, and without depressions that could lead to fish stranding; (j) sediment removal activities shall (1) not cause braiding of the stream channel, (2) not be performed within the low flow channel, and (3) leave a

stable low flow channel with a minimum 6-inch vertical offset between the channel bottom and the excavation area within the project reach in an effort to contain low to moderate flows in a single channel; and (k) no riparian trees within or adjacent to the project area shall be disturbed.

Special Condition No. 2 requires adherence to certain standards and limitations for site revegetation including (a) only native plant species of local genetic stock, if available, shall be planted and/or seeded, and no invasive plant species shall be employed on the site; (b) seeding and mulching (with weed-free rice straw) for erosion control purposes shall be completed prior to the onset of any runoff-generating precipitation; and (c) rodenticides containing anticoagulant compounds shall not be used.

Additionally, **Special Condition No. 3** requires submittal of a final staging area and stockpiling plan to ensure that staged and stockpiled materials and equipment in no way impact coastal waters or wetlands. The applicant has indicated that sediment material removed from the creek will be stockpiled on an adjacent property outside of the coastal zone owned by the Jacoby Creek Land Trust. However, no plan or details were given as to the location or characteristics of the proposed staging and stockpiling area. Therefore, the final staging area and stockpiling plan required by Special Condition No. 3 must demonstrate that the area(s) shall be located outside of wetlands and other environmentally sensitive habitat areas, and appropriate sediment and runoff control devices shall be implemented at all times at staging and stockpiling areas to ensure containment of sediment and sediment-laden runoff within the bounds of the designated area.

Therefore, the Commission finds that as conditioned as described above to incorporate the above-listed mitigation measures to protect sensitive fish species and habitats, the proposed project incorporates the best mitigation measures feasible to avoid or minimize the significant adverse environmental effects of the proposed project on sensitive fish species and habitat to less than significant levels consistent with the requirements of Section 30236 of the Coastal Act.

(ii) Protection of Riparian Habitat

In addition to the project's potential impacts to sensitive fish species and aquatic habitat, the project also could adversely impact riparian vegetation located downstream of the bridge within the County right-of-way where mature riparian vegetation lines the creek banks (see Exhibit No. 4, photos). As discussed above, the DFG Streambed Alteration Agreement issued for the project prohibits disturbance of riparian trees within or adjacent to the project area, and this condition has been included in subsection (K) of Special Condition No. 1. It is possible, however, that significant sediment removal on the downstream side of the bridge, if not carefully implemented, could indirectly impact existing riparian vegetation by increasing streambank erosion and instability from the redirection and increase of creek flows. The applicant has provided only a general plan and profile for the sediment removal area (Exhibit No. 3), but no typical cross section or details have been proposed that describe the extent of sediment removal in relation to existing riparian vegetation along the streambank.

To ensure that riparian vegetation is not adversely impacted by project activities, the Commission therefore attaches Special Condition Nos. 4 and 5. **Special Condition No. 4**

requires adherence to certain standards and limitations for the protection of riparian vegetation at the project site including limitations that: (a) construction access to the project site shall be from the right bank (looking downstream) of the upstream side of the bridge only as shown on Exhibit No. 3, and the downstream side of the channel shall be accessed via a wooden platform placed across the channel (elevated atop sandbag abutments) on the downstream side of the bridge to avoid impacts to riparian vegetation along the streambank in this area; construction equipment and workers shall use the platform to haul excavated material under the bridge to the upstream side of the bridge for transfer along the access route to the designated stockpile areas; and (b) sediment removal along the left bank (looking downstream) on the downstream side of the bridge shall be minimized and completed in such a way so as to avoid direct and indirect impacts (e.g., bank instability) to riparian vegetation by not removing portions of the bank that support riparian vegetation and not reconfiguring the bank full channel in a way that creates sharp angles in the bank that would be particularly prone to streambank erosion.

Special Condition No. 5 requires submittal of an annual sediment management plan, prior to commencement of sediment removal work in any year during permit authorization that sediment removal activities are conducted demonstrating that sediment removal operations shall conform to all provisions specified in Special Conditions Nos. 1 through 5 of Coastal Development Permit No. 1-07-041 including, but not limited to, the following (1) all project activities shall be conducted during the low-flow period of June 15 through October 15 only; (2) heavy equipment shall not operate within the wetted channel; (3) the work area within the bank full channel shall be left smooth, free draining, and without depressions that could lead to fish stranding; (4) sediment removal activities shall (a) not cause braiding of the stream channel, (b) not be performed within the low flow channel, and (c) leave a stable low flow channel with a minimum 6-inch vertical offset between the channel bottom and the excavation area within the project reach in an effort to contain low to moderate flows in a single channel; and (5) sediment removal along the left bank on the downstream side of the bridge shall be minimized and completed in such a way so as to avoid direct and indirect impacts (e.g., bank instability) to riparian vegetation by not removing portions of the bank that support riparian vegetation and not reconfiguring the bank full channel in a way that creates sharp angles in the bank that would be particularly prone to stream bank erosion.

Therefore, the Commission finds that as conditioned as described above to incorporate the above-listed mitigation measures to protect riparian habitat, the proposed project incorporates the best mitigation measures feasible to avoid or minimize the significant adverse environmental effects of the proposed project on riparian habitat consistent with the requirements of Section 30236 of the Coastal Act.

c) Conclusion

As (1) the primary objective of the development is to manage the hydraulic competence and capacity of the Jacoby Creek channel for providing flood protection for the County road and lower creek watershed area, (2) no other feasible measures currently exist for protecting structures within the area, and (3) the project is necessary for the public safety and to protect existing development, the proposed substantial streambed alteration of the creek is for an

allowable purpose under Coastal Act Section 30236. The proposed project, as conditioned, incorporates all feasible mitigation measures. Therefore, the Commission finds that as conditioned herein, the proposed project is consistent with the requirements of Section 30236 of the Coastal Act that the best feasible mitigation measures have been provided to minimize or avoid significant adverse environmental effects.

C. Hazards

1. Applicable Coastal Act Policies and Standards:

Coastal Act Section 30253 states in relevant part:

> *New development shall: (1) Minimize risks to life and property in areas of high geologic, flood; and fire hazard. (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

2. Consistency Analysis:

The primary purpose of the proposed project is to minimize the risk of flooding developed areas surrounding lower Jacoby Creek, including the County roadway itself and adjacent residential and agricultural properties, through sediment removal activities within the creek channel beneath and adjacent to the Jacoby Creek Bridge. The proposed project will improve the hydraulic capacity of the channel and manage sediment accumulation to accommodate higher flows and reduce flooding events in the immediate area. Moreover, the proposed project, as conditioned, effectively protects the important habitat values of the lower Jacoby Creek riparian system while minimizing the risk to life and property from flood and geologic (i.e., erosion) hazards. The Commission therefore finds that the proposed project is consistent with Coastal Act Section 30253.

D. Period of Authorization

The applicant has requested authorization to undertake sediment management activities on an annual basis as needed for a period of ten years. The Commission has, on occasion, granted special districts multi-year permits for such activities (e.g., CDP No. 3-04-72 Moss Landing Harbor District routine pier replacement; CDP No. 3-00-034 Santa Cruz Port District routine maintenance dredging; CDP No. 3-02-047 Monterey Harbor routine operations and maintenance; CDP No. 1-03-004 Reclamation District levee repair and maintenance; etc.) in order to reduce both Commission and District staff workload associated with processing repetitive, routine coastal permits. However, given the fact that circumstances can change over time and techniques for addressing sediment removal needs can also evolve, the Commission chooses to grant an initial five year period of development authorization with a one-time ability to extend the period of development authorization for another five years for a maximum total of 10 years of development authorization, if there are no changed circumstances that require review of the sediment management operations to ensure the development remains consistent with the Chapter 3 policies of the Coastal Act. Therefore, the Commission attaches **Special Condition No. 6,**

which limits the authorized development to five years, but grants the Executive Director the authority to approve a request for an additional five years of sediment removal operations provided that the request would not substantively alter the project description and/or require modifications of the conditions due to new information or technology or other changed circumstances.

E. Public Access

1. Applicable Coastal Act Policies and Standards:

Coastal Act Sections 30210, 30211, and 30212 require the provision of maximum public access opportunities, with limited exceptions. Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety. In applying Sections 30211 and 30212, the Commission is 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 public access.

2. Consistency Analysis:

The project site is not located between the sea and the first designated through public road, which is U.S. Highway 101 located approximately 0.5-mile to the west of the project area. The proposed development will improve the Old Arcata Road corridor by reducing annual flooding events on Jacoby Creek that impact road traffic, which will enhance use of the corridor for public access and other purposes. Furthermore, the proposed project will not adversely affect public access. The proposed project activities will not require road closure during construction. There are no trails that provide shoreline access within the vicinity of the project that would be affected by the project. In addition, the proposed development would not create any new demand for public access or otherwise create any additional burdens on public access.

Therefore, the Commission finds that the proposed project will not have an adverse effect on public access, and the project, as proposed, is consistent with the requirements of Coastal Act Sections 30210, 30211, and 30212.

F. California Environmental Quality Act

The County of Humboldt, as the lead agency for CEQA purposes, filed a Notice of Exemption for the proposed project on September 5, 2007. The project was determined to be Categorically Exempt pursuant to CEQA Sections 15301 (Existing Facilities) and 15304 (Minor Alterations to

Land), as the project was categorized as Class 1 to maintain an existing roadway facility and Class 4 to minimally alter the dry stream channel.

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements 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 any 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 consistent with the policies of the Coastal Act. The 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. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may 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 to conform to CEQA.

V. EXHIBITS:

1. Regional Location
2. Project Vicinity
3. Site Plan
4. Project Area Photographs

APPENDIX A

STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgement. 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 amount of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of 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.