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STAFF REPORT: MATERIAL AMENDMENT

Amendment Application No.:	**1-09-021-A1**
Applicant:	**Leland Rock and Charles Dwelley**
Project Location:	North side of the lower Van Duzen River from its confluence with the Eel River up to river mile 0.7, west of the Highway 101 Bridge, in Humboldt County (APNs 201-261-09 & 205-121-01).
Description of CDP 1-09-021:	Continued seasonal extraction of up to 100,000 cubic yards of river run aggregate (sand and gravel) per year for a period of five years from the dry river channel and stockpiling of gravel up to 30 feet high within a 220-foot wide by 535-foot-long upland area.
Amendment Request:	Permit seasonal gravel extraction operations for one additional year from November 1, 2013 to November 1, 2014.
Staff Recommendation:	Approval with Special Conditions

SUMMARY OF STAFF RECOMMENDATION

The Rock and Dwelley Company proposes to amend Coastal Development Permit (CDP) 1-09-021 granted by the Commission for the seasonal extraction of up to 100,000 cubic yards (cy) of river run aggregate from the dry river channel of the lower Eel River. The proposed amendment would change the period of development authorization of CDP 1-09-021 from November 1, 2013 to November 1, 2014.

Following approval by the Commission of CDP 1-09-021, a delay in the issuance of other agency approvals required for the project including, the U.S. Army Corps of Engineers (Corps) Letter of Permission (LOP) and Endangered Species Act Biological Opinions by the National Marine Fisheries Service (NMFS) and the U.S. Fish & Wildlife Service (FWS) resulted in a year's difference in the period of authorization for gravel extraction operations between CDP 1-09-021, the Corps permit, and the other required permits and environmental documents. The original CDP authorizes one less year of extraction than the other agency approvals. Therefore, Mercer-Fraser proposes to amend the period of authorization for gravel extraction operations under CDP 1-09-021 from November 1, 2013 to November 1, 2014 to align with the operation date of the other agency approvals. Aligning the authorization periods of the various agency approvals will allow for a more streamlined and coordinated environmental review and permit application review process for gravel extraction in years after 2014.

Other than the addition of one additional year of gravel extraction under the permit, there will be no other changes to the approved project. Staff recommends that all of the existing special conditions in CDP 1-09-021 continue to be implemented and not be modified except for **Special Condition 12**, which will be modified to allow gravel extraction in 2014. In addition, as the project has vested, staff is recommending that Standard Condition No. 2, "Expiration" be deleted. Since the time of permit issuance, there have been no significant changes to habitat conditions or the status of any identified rare or threatened species located within, or dependent on, the coastal resources in the project area. Staff therefore believes that the development, as amended, will continue to be consistent with the policies of the Coastal Act.

The motion to adopt the staff recommendation of **approval** with special conditions is found on page 4.

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APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

I move that the Commission approve the proposed amendment to Coastal Development Permit 1-09-021 pursuant to the staff recommendation.

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

The Commission hereby approves the coastal development permit amendment on the ground that the development as amended and subject to conditions, will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit amendment complies with the California Environmental Quality Act because feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the amended development on the environment.

II. STANDARD AND SPECIAL CONDITIONS

Note: The standard conditions and 14 Special Conditions of CDP 1-09-021 remain in full force and effect except that Standard Condition No. 2, "Expiration," is deleted, and **Special Condition No. 12** is modified as shown below. CDP Amendment 1-09-021-A1 does not include any new special conditions. The text of all of the original permit conditions is included in Exhibit No. 6.

Changes to the special conditions appear in highlighted text format. Deleted language is shown in ~~**bold double strikethrough type**~~; new text appears in **bold double-underlined font**.

12. ~~Permit Termination Date~~ Gravel Extraction Termination Date

The gravel operations authorized by this permit shall terminate on ~~**November 1, 2013**~~ **November 1, 2014.** Continued gravel operations after that date shall require a new coastal development permit.

III. FINDINGS AND DECLARATIONS

A. AMENDMENT DESCRIPTION

Project Background

On August 13, 2009, the Commission approved with conditions, Coastal Development Permit (CDP) 1-09-021 for the seasonal extraction of river run aggregate. CDP 1-09-021 permitted the

continued seasonal extraction of up to 100,000 cubic yards of river run aggregate (sand and gravel) annually for a period of five years from the dry river channel of the lower Eel River. The project has operated within the conditioned terms of the permit for the past five years, and there have been no amendments made prior to this time. The gravel extraction area consists of a large gravel bar formed by the action of both the Van Duzen and Eel Rivers. The bar is largely exposed during low flow conditions during the dry season and largely submerged during high flow conditions in the winter. The project area excludes a dense riparian forest area located closer to Highway 101. Additionally, as needed, the project has included the implementation of salmonid barrier modification projects at the confluence of the Van Duzen and Eel Rivers annually since 2001, as well as the installation of large woody debris (LWD), alcoves, and off-channel trenching. The project was approved with 15 special conditions, including limiting gravel extraction operations to specific extraction techniques described in the Army Corps of Engineers (Corps) Letter of Permission (LOP; LOP-2009) and guidelines established in the National Marine Fisheries Service (NMFS) Biological Opinion. See the Coastal Commission staff report for CDP 1-09-021 for more information about these documents (Findings Section IV-B-(1,2,3) "Background on Past & Current Permitting of Gravel Operations on the Lower Eel & Van Duzen Rivers").

The originally approved development as conditioned avoids and minimizes impacts to aquatic fish and wildlife, including federal- and state-listed endangered and threatened resident and migratory anadromous fish species, as well as protected riparian vegetation and instream salmonids habitat. Gravel extraction operations were limited to specific extraction techniques described in the Army Corps of Engineers (Corps) Letter of Permission (LOP; LOP-2009) and guidelines established in the National Marine Fisheries Service (NMFS) Biological Opinion. See Findings Section IV-B-(1,2,3) of Exhibit 3 "Background on Past & Current Permitting of Gravel Operations on the Lower Eel & Van Duzen Rivers" for more information about these documents. Gravel removal is restricted except in certain limited cases to skimming from dry gravel bars. The gravel extraction terms and limitations set forth in proposed LOP-2009 include, in part, the following:

- All applicants shall use the CHERT process for annual review and recommendations.
- A minimum head-of-bar length, generally defined as that portion of the bar that extends from at least the upper third of the bar to the up-stream end of the bar as exposed at summer low flow shall not be mined or otherwise altered.
- The minimum skim floor elevation will remain above the water surface elevation of the 35% exceedence flow for each site, on an annual basis.
- Temporary channel crossings locations will avoid known spawning areas. Where bridges are not able to span the entire wetted channel, the crossing location will be determined on a site-specific basis.
- Temporary crossings will be placed after June 30 only. All crossings and associated fills will be removed after excavation ceases but before October 15 on the Eel River with possible extensions of time.

- The amount of time heavy equipment is in the wetted channel shall be minimized by limiting the number of equipment crossings to two (2) occurrences during placement and removal of the crossing structures.
- Temporary storage of excavated material may occur on the gravel bar, but must be removed by October 1. In order to minimize the turbidity associated with excavating wet sediment, all wet excavated sediment must be stockpiled on the gravel bar away from the low flow channel and allowed to drain prior to hauling across the temporary channel crossing.
- All riparian woody vegetation and wetlands must be avoided to the maximum extent possible. Any riparian vegetation or wetland that is to be disturbed must be clearly identified by mapping. Woody vegetation that is part of a contiguous 1/8-acre complex, or is at least 2 inches diameter breast height (DBH) that is disturbed must be mitigated;
- Gravel removal must remain a minimum distance of 500 feet from any structure (i.e. bridge, water intake, dam, etc.) in the river. For bridges, the minimum setback distance is the length of the bridge or 500 feet, whichever is greater; Gravel removal may encroach within this setback if approval is given by owners of these structures and approved by the Corps;
- The project area must be regraded, if necessary, before the water levels rise in the rainy season and must be completed by October 15 each year. Regrading includes filling in depressions, grading the construction/excavation site according to the approved configuration, leaving the area in a free-draining configuration (no depressions and sloping toward the low flow channel), and removing all temporary fills from the project area.
- Unless the Letter of Permission is specifically modified, gravel extraction shall cease by October 15 each year. Regrading, if necessary, shall be completed prior to October 15th. Requests for a extension will be reviewed by the Corps on a case by case basis. The applicant, however, must have regraded the site before an extension can be authorized.
- All applicants shall submit, as part of the application, a written assessment by a qualified biologist describing the potential effects of the project on federally threatened, endangered, or proposed species under the Endangered Species Act.
- There is a potential for gravel operations downstream of the confluence of the Eel River and the Van Duzen River to adversely affect the western snowy plover. Appendix E (of the LOP-2009 public notice) contains requirements necessary to assure the extraction activities (including pre-season surveys) are not likely to adversely affect the western snowy plover.
- There is a potential for operations anywhere in the rivers and streams of Humboldt County to adversely affect SONCC coho salmon, CC Chinook salmon and NC steelhead. Appendix M (of the LOP-2009 public notice) contains the most recent NOAA-Fisheries Biological Opinion. The BO contains restrictions (reasonable and prudent measures), which are mandatory conditions of the LOP-2009.
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- The actions authorized by this LOP are expected to include certain activities at project areas, during extraction seasons, that will enhance habitat for salmonids and other riverine species. The specific details of such habitat enhancement activities shall be determined during, and follow, the same multiagency pre-extraction design review process that is used for gravel extraction operations. Many of the habitat enhancement activities shall be consistent in scope, size and cost impact as restoration activities that have occurred in the past under LOP-2004. These activities included, but were not limited to, trenching designed to improve salmon migration, alcove construction, placement of edge water large woody debris, and construction of wetland pits to improve aquatic and riparian habitat. Some habitat enhancement activities will be new to this LOP, including, but not limited to, riparian planting and strategic placement of large wood and boulders in the stream.
- Large woody debris (LWD) in the wetted channel and on floodplains and terraces is an important component of aquatic and riparian habitat. However, it is common practice for LWD to be gathered by local residents for firewood and other uses. To reduce the adverse effects of this longstanding practice, educational signing regarding the importance of LWD for salmonids shall be placed at access roads owned, controlled, or utilized by the gravel operators. In addition, in order to protect LWD deposited on mined gravel bars, all access roads owned or controlled by commercial gravel operators shall be gated and locked to reduce access; the County shall be exempt from this requirement. Operators should consult with NMFS for suggestions on the wording and design of this sign.
- Impacts to snowy plovers shall be avoided to the maximum extent possible. Appendix E (of LOP-2009 public notice) further describes the operating requirements that are required for gravel activities, including pre-extraction planning and surveys. The Corps will not participate in on-site pre-extraction reviews until after September 15 or after the plover biologist provides the Corps written confirmation that the pre-extraction surveys have been completed in accordance with the FWS final Biological Opinion for LOP-2009 and Appendix E of the LOP.
- Alternative extraction techniques shall be preferred over traditional skimming (bar scalping). These alternative techniques may include, but are not limited to horseshoe extractions, wetland pits, trenches, and dry-trenches, as described in the Appendix L of the LOP.

Proposed Amendment

Following issuance of CDP 1-09-021, a delay in the issuance by the Corps of the LOP and the Biological Opinions by NMFS and FWS created a time lag between the expiration dates of CDP 1-09-021 and the other required permits and environmental documents. Therefore, the applicant proposes to amend CDP 1-09-021 to add authorization for an additional year of gravel extraction operations from November 1, 2013 to November 1, 2014 to allow for gravel extraction during the 2014 gravel extraction season. The Corps LOP-2009, the NMFS Biological Opinion (Exhibit 4), the FWS Biological Opinion (Exhibit 5), and the California Department of Fish and Wildlife (CDFW) Streambed and Lake Alteration Agreement (LSA) all allow for an extraction season in 2014 and all expire on December 31, 2014. Amending the period of the CDP's development authorization will align the timing of the Commission review process with the renewal of LOP-

2009, the CDFW LSA, and the NMFS and FWS Biological Opinions, allowing for a more streamlined environmental review and permit issuance process.

Following the 2014 gravel extraction season, the state and federal permit authorizations for gravel extraction operations on the lower Eel River will undergo a complete re-examination, which is anticipated to result in the reissuance of the NMFS Biological Opinion, the FWS Biological Opinion, the CDFW LSA and the Corps LOP. As part of this process, new Biological Opinions will be drafted and meetings among the federal, state, and local reviewing agencies and the gravel operators will be held. The suite of restrictions and special conditions associated with the various gravel operations on the lower Eel River, including the applicant's operation, will be re-evaluated, and changes to the project descriptions, restrictions, and special conditions may be incorporated if needed to avoid and minimize potential significant adverse environmental impacts and protect coastal resources.

Under the proposed amendment, the project description will remain the same as approved under the original permit except that extraction will now be authorized for the 2014 gravel extraction season. Gravel mining operations under the proposed amendment would continue to operate under the same restrictions and conditions imposed under the original permit except that **Special Condition No. 12** would be amended to allow for the additional year of gravel mining, and Standard Condition No. 2 requiring the permit to expire if development has not commenced within two years of Commission approval of the original permit would be deleted as obsolete. Maintaining the established restrictions will ensure the continued avoidance and minimization of impacts to aquatic fish and wildlife, including federal- and state listed endangered and threatened resident and migratory anadromous fish species and the federally threatened resident and California species of special concern Western Snowy Plover.

B. OTHER AGENCY APPROVALS

The amended development requires approval from several local, state and federal government agencies and other non-governmental review boards. Pursuant to the **Special Condition Nos. 3,4,8,10,11, and 14** prior to commencing gravel extraction operations in 2014, the permittee must submit evidence of approval from seven agencies, including: County of Humboldt Extraction Review Team (CHERT); California Department of Fish and Wildlife; California Regional Water Quality Control Board; U.S. Army Corps of Engineers; California State Lands Commission; NOAA-Fisheries; and the U.S. Fish and Wildlife Service. Additionally, pursuant to **Special Condition No. 3**, the permittee must submit for the review and written approval of the Executive Director, a final gravel extraction plan for the 2014 gravel extraction season consistent with the terms and conditions of the amended permit. Many of the reviewing agencies will also need to review and approve this final gravel approval plan. See appendix B for more information about the required approvals from each agency.

C. STANDARD OF REVIEW

The amended project site is located in the Commission's retained permit jurisdiction. The County of Humboldt has a certified Local Coastal Program (LCP), but the site is within an area shown on State Lands Commission maps over which the State retains a public trust interest.

Therefore, as required by Public Resources Code Section 30519)b) and Commission regulation section 13166(c), the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

D. PERMISSIBLE DIKING, DREDGING/PROTECTION OF WATER QUALITY.

See the staff report for CDP 1-09-021, attached as Exhibit 6, for information on the environmental setting and amended project area location, as well as a detailed account of habitat types and special status species that are found in and around the amended project area (Findings Section IV-A-(3), " Habitat types & Special-Status Species").

The proposed amended project involves the extraction of sand and gravel (gravel mining) from the gravel bars of the lower Van Duzen River, from its confluence with the Eel upstream to Van Duzen River Mile 0.7. Several Coastal Act policies address protection of rivers from the impacts of development such as gravel mining. Coastal Act Sections 30230 and 30231 require, in part, that marine resources (including salmonids) and coastal wetlands be maintained, enhanced, and where feasible restored. These policies specifically call for the maintenance of the biological productivity and quality of marine resources, coastal waters, streams, wetlands, and estuaries necessary to maintain optimum populations of all species of marine organisms and for the protection of human health. Section 30233 applies to any diking, filling, or dredging project in a river and other coastal waters. Gravel extraction within a river bed is a form of dredging within a wetland and therefore falls under the requirements of Section 30233.

Section 30230 of the Coastal Act states, in applicable part:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states as follows:

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

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

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

> *(5)* *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.* [Emphasis added.]
>
> …
>
> *(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary…*

Section 30240 of the Coastal Act states as follows:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

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

> *…any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

When read together as a suite of policy directives, Sections 30230, 30231, and 30233 set forth a number of different limitations on what types of projects may be allowed in coastal wetlands. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories or tests. These tests require that projects that entail the dredging, diking, or filling of wetlands demonstrate that:

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

1. Allowable Use for Dredging and Filling of Coastal Waters

The first test set forth above is that any proposed fill, diking, or dredging must be for an allowable use as enumerated under Section 30233 of the Coastal Act. The proposed amended development project involves dredging for mineral extraction and proposes to use a variety of extraction techniques that are allowed by the Corps LOP and recommended by NMFS as techniques that would avoid significant impacts to salmonids. Surface mining of gravel aggregate materials is specifically enumerated as a permissible use in the above-cited policy [Section 30233(a) (5)], provided the activity is not undertaken in environmentally sensitive areas. Therefore, to the extent that the amended gravel extraction will avoid environmentally sensitive

areas, the amended development project, as conditioned, is consistent with the use limitations of Section 30233(a)(5).

All but one of the gravel extraction techniques would involve excavation on dry portions of the gravel bars without encroachment into the salmon habitat of the river channel. The sole exception is the wet trenching technique, which would involve excavating sediment directly from portions of the channel, after the stream flow has been diverted to a secondary channel location. The wet trenching method of extraction would only be used when there is the objective of improving instream salmonid habitat by the limited use of sediment removal, and where the diversion of the low flow channel into a secondary channel that provides salmonid habitat is possible. By itself, the wet trenching technique would involve excavation within salmonid ESHA habitat, and thus would not be permissible under Section 30233(a) (5). As the wet trenching method is a form of substantial alteration of a river or stream proposed for the improvement of fish habitat, the Commission evaluates this aspect of the amended project under Section 30236 of the Coastal Act below.

As explained in the original findings in the staff report for CDP 1-09-021, except for gravel extraction using the wet trenching techniques, the amended development, as conditioned, will avoid ESHA. See pages 39-42 of the findings section of the staff report for CDP 1-09-021 (Exhibit 6) for more information on ESHA in the project area. To ensure that mineral extraction and associated activities such as the installation of seasonal crossings within an ESHA as precluded by Coastal Act Sections 30233(a)(5) and 30240 do not occur, the Commission attaches (1) **Special Condition No. 1-(C)**, which prohibits excavation from occurring within the active wetted channel, where sensitive salmonid species could be present, except for wet trenching performed for restoration of instream salmonid habitat authorized pursuant to Section 30236, and (2) **Special condition 2-(C)**, which prohibits any portion of the seasonal crossing abutments from extending into the wetted channel, except in shallow flat-water areas, which are not considered environmentally sensitive during the time of year when gravel extraction operations are permitted to occur. Under this amendment, these special conditions will remain in place and be fully implemented.

2. Least Environmentally Damaging Alternative

The second test set forth by the Commission's dredging and fill policies is that the amended dredge or fill project must have no feasible less environmentally damaging alternative. A total of four possible alternatives have been identified and were analyzed in the findings for the original permit, including: (a) the "no project" alternative; (b) obtaining sand and gravel from quarry operations; (c) obtaining sand and gravel from terrace deposits in the Eel River floodplain; and (d) modifying the proposed project. The description and analysis of the alternatives on pages 43 to 44 of the staff report for CDP 1-09-021 (Exhibit 6) are incorporated here by reference. No new alternatives for the amended development have been identified at this time.

In this case, the Commission has considered the various identified alternatives, and determines that there are no feasible less environmentally damaging alternatives to the amended project as conditioned by **Special Condition Nos. 1-12**. As no new alternatives have been identified, and for all the reasons discussed in the findings for the original permit, the Commission finds that

there is no less environmentally damaging feasible alternative to the amended developement as conditioned, as required by Section 30233(a).

3. Feasible Mitigation Measures

The third test set forth by the dredging and fill policy of the Coastal Act is whether feasible mitigation measures have been provided to minimize the adverse environmental impacts of the amended project. Depending on the manner in which the gravel operation is conducted, the portions of the amended project to be conducted below the ordinary high water mark could have five potentially significant adverse effects on the natural environment of the lower Eel River. These impacts include: (a) direct and indirect impacts on fisheries; (b) alteration of the riverbed and increased bank erosion; (c) impacts on environmentally sensitive riparian vegetation; (d) impacts on western snowy plover; and (e) impacts on water quality. The potential impacts and their mitigation are discussed in the following sections:

a. Impacts on Fisheries

The Eel River and its tributaries are ranked among the most significant anadromous fisheries in Northern California and include coho salmon, Chinook salmon, and steelhead trout, all federally listed as threatened species under the Federal Endangered Species Act. The project area and the lower Eel River are important for these anadromous fish as a migration route to and from upstream spawning grounds. In addition, the lower Eel River supports summer rearing habitat for juvenile salmonids, especially yearlings and fall Chinook sub-yearlings, and holding areas for adult summer steelhead as well as spawning and nursery habitat for other marine fishes and invertebrates.

Based on discussions with NMFS, gravel extraction from river bars has the potential to have both direct and indirect adverse impacts on threatened salmonid species through: (a) water quality degradation associated with increased turbidity and sedimentation of coastal waters; (b) fish injuries and or deaths from contact with excavation equipment; (c) fish injuries, deaths, and changes in behavior due to flow diversions; (d) decreased invertebrate production associated with removal and/or degradation of habitat substrate; and (e) increased susceptibility to predation due to the tendency of migratory fish to concentrate in trench excavations that afford little or no cover from predators and poachers. See pages 45-49 of the staff report for CDP 1-09-021 (exhibit 6) for more information on potential adverse effects of gravel mining on fisheries.

An assessment of the significant adverse indirect and cumulative impacts of gravel mining operations permitted by the U.S. Army Corps of Engineers (Corps) along the lower Eel River on sensitive fish species exists in the form of Biological Opinions issued by the National Marine Fisheries Service (NOAA-Fisheries). These Biological Opinions are issued as a result of formal consultations between the Corps and NOAA-Fisheries pursuant to Section 7 of the Federal Endangered Species Act.

NOAA-Fisheries prepared a Biological Opinion to analyze the Corps LOP Procedure 2009 for proposed gravel extraction on Humboldt County rivers for the period covering 2009 through 2014). Based on the biological information collected as part of the FESA Section 7 consultation, NOAA-Fisheries staff concluded that seasonal extraction of gravel over the five year period,

conducted in the manner proposed in the project description of the Corps LOP, and proposed in the original coastal development permit application, primarily utilizing bar skimming techniques on dry gravel bars and incorporating various mitigation measures, will not result in more than incidental take of threatened salmonid species and will not jeopardize their continued existence.

As part of its review, NOAA-Fisheries reviewed the extraction methods and techniques described in LOP-2009 including, but not limited to, traditional skims, horseshoe skims, inboard skims, narrow skims, alcove extractions, wetland pits, wet trenches for salmonid habitat improvement purposes only, and dry-trenches. NOAA-Fisheries staff believes that although there is a preference for the non-skimming methods, all of the above methods would not adversely affect channel form and function in a manner that would be likely to jeopardize the continued existence of the sensitive fish species.

To ensure that significant adverse impacts to salmonids do not occur during authorized mining operations, the Commission incorporates within the standards of **Special Condition Nos. 1, 3, and 5** specific elements of proposed LOP Procedure 2009 that have been identified by NOAA-Fisheries as important for minimizing impacts to channel form and function, as well as protecting fish habitat.

There have been no changes to the status of any rare or endangered species in the project area, and critical habitat conditions remain the same as when analyzed under the original permit. The seasonal extraction techniques proposed in the amended development are the same as those described in the original permit. Maintaining previously permitted extraction techniques will prohibit excavation from occurring in the active wetted channel where sensitive species are found. Implementation of all the special conditions under CDP 1-09-021 will further minimize the potential for adverse effects to sensitive species. These special conditions will be fully implemented under the amended permit and will continue to protect fish habitat. Therefore, as conditioned, the proposed seasonal extraction techniques would not result in more than incidental take of threatened species, would not jeopardize their continued existence, and are not likely to adversely modify or destroy critical habitat.

Therefore, the Commission finds that as conditioned, the amended gravel mining development will avoid significant adverse impacts on sensitive fish species consistent with the requirements of Sections 30231, 30233, and 30240 of the Coastal Act.

b. Impacts on River Morphology

A potential major impact of gravel mining operations is degradation of the riverbed and erosion of the riverbanks. Such impacts can occur if the amount of gravel extracted from a particular part of the river over time exceeds the amount of gravel deposited on the site through natural recruitment – the downstream movement of sand and gravel materials. Bed degradation and bank erosion can also result from the manner in which gravel is extracted. For example, if gravel bars are skimmed too close to the low-water surface or are left with a very shallow slope, at higher flow stages the river will tend to spread across the bar, reducing the overall depth of flow and resulting in rapid channel migration or instigation of a multi-channel “braided” configuration. This is also true of watercourse reaches where aggradation of materials is a problem. Such sites

tend to trap gravel that would otherwise move downstream, potentially trapping or impeding fish migration up and down the river.

Although the applicants propose to extract an amount of gravel that is small relative to the overall permitted gravel mining activity along the Eel River, extraction without consideration of river morphology concerns could cause bed degradation and riverbank erosion. As discussed in Finding IV-B-2 of the staff report for CDP 1-09-021 (Exhibit 6), in January of 2009 CHERT released a 10-year analysis of river channel cross sections taken at various sites along the Eel and Van Duzen Rivers near mining sites (including the lower, middle, and South Fork reaches of the Eel River and the lower Van Duzen River). The report concludes that "…*we did not discern any large scale, persistent effects of Eel River gravel mining on channel thalweg elevations, mean bed elevations, or scour…Gravel mining effects in the Eel River are probably limited to short term, localized effects which the adaptive management program and federal and state oversight attempt to avoid or minimize. Refinement of project-scale minimization measures will continue to be a fundamental component of the adaptive management process, as will instream habitat improvement projects associated with gravel extraction operations*" (page 24).

The proposed gravel extraction techniques have been proposed to avoid significant adverse impacts to channel form and function. The determination of the NOAA-Fisheries Biological Opinion that gravel operations conducted in accordance with the LOP-2004 procedures will not result in more than an incidental take of listed species and will not likely threaten the continued existence of these species, and the opinion of NOAA-Fisheries staff that mining under the LOP-2009 would similarly not result in more than incidental take of listed species, is based in part on a finding that the extraction methods specified in LOP-2009 will be used to help preserve channel form and minimize bank and bar erosion that would degrade fishery habitat. The NOAA-Fisheries Biological Opinion remains in effect and has not been revised since the Commission acted on the original project in 2009. **Special Condition Nos. 1 and 2** of the original permit limit the use of gravel extraction techniques to those recommended by NMFS. In addition, the annual gravel extraction plans reviewed by CHERT in consultation with NMFS and the Corps ensure that the particular methods minimize the chances of degradation of channel form based on conditions that exist at the time. **Special Condition No. 3** requires that the annual gravel extraction plan be submitted for the review and approval of the Executive Director and section (A) (4) of that condition requires that the submitted plan be consistent with the recommendations of CHERT. Under this amendment, these special conditions from the CDP 1-09-021 will remain in full force and effect and will be fully implemented. These requirements ensure that disturbance of the active channel from the amended project will be avoided. Therefore, staff believes that the amended development, as conditioned, will continue to avoid significant adverse effects on river morphology and will remain consistent with Section 30240 of the Coastal Act.

c. Impacts on environmentally sensitive riparian vegetation

As discussed in the findings for the original permit, (Exhibit 6, Findings Section IV-D-(2), "Protection of the Riverine Environment") the non-persistent, young riparian scrub-shrub areas sometimes found on the gravel bars in the project area can be characterized as ESHA once the vegetation reaches a certain size and extent of cover. Under the original permit, the Commission determined that riparian scrub-shrub vegetation should be characterized as ESHA when the

vegetation contains woody vegetation that is part of a contiguous complex of 1/16-acre or larger or is one-inch or larger in diameter at breast height (DBH). The same characterization was used to determine the existence of ESHA under the amended permit.

To ensure that mineral extraction proposed by the applicant is not performed within an area of riparian ESHA and to avoid impacts to such habitat, the special conditions of the original permit remain in full force and effect and will be fully implemented under this amendment. These conditions ensure that gravel extraction operations will not disturb or remove any area of riparian vegetation growing on the river banks or on the gravel bar meeting either the aerial extent or plant girth criteria discussed above. Submittal of an annual gravel extraction plan prior to commencing extraction operations, required by **Special Condition No. 3**, will ensure that gravel extraction operations in 2014 do not occur in areas that have been designated as riparian vegetation ESHA. Therefore, the amended development, as conditioned, will avoid disturbance of environmentally sensitive riparian habitat areas.

d. Impacts on Western Snowy Plover

The western snowy plover is a federally listed threatened species, which in the past has been observed nesting on gravel bars of the lower Eel and Van Duzen Rivers during April through early September. Surveys conducted in and around the project area by the U.S. Fish and Wildlife Service (USFWS) in 2008 indicate that a total of four adult plovers constructed a total of two nests along the Eel River gravel bars with 100 percent of resulting chicks hatching out. The number of plovers sighted on gravel bars has declined over the past several years, though the overall number of plovers sighted on local beaches has increased. As the habitat of rare and endangered species meets the definition of ESHA pursuant to Section 30107.5 of the Coastal Act, the Commission finds that any areas utilized by the western snowy plover during the nesting season when the birds are present constitute ESHA.

The FWS Biological Opinion finalized in 2009 as a result of formal consultations with the Corps pursuant to Section 7 of the Federal Endangered Species Act determined that gravel operations conducted in accordance with the LOP-2009 procedures will not result in more than an incidental take of the western snowy plover and will not likely threaten the continued existence of this species. The FWS Biological Opinion remains in effect and has not been revised since the Commission acted on the original project in 2009. **Special Condition No. 4** of the original permit establishes protections that require the avoidance of western snowy plover habitat consistent with the FWS Biological Opinion by either 1) not commencing operations until after the nesting season, or 2) commencing operations only after a biologist approved by the USFWS has surveyed the site and either found no plover nests, or conducts daily surveys to ensure a 1,000-foot buffer area is maintained around the nests that are found. This special condition will remain in full force and effect and will continue to be fully implemented under this amendment to protect western snowy plovers and their habitat. Furthermore, **Special Condition No. 4** of the original permit also requires: (1) daily surveys prior to pre-extraction activities occurring in suitable habitat; (2) restricts vehicle use to prevent adverse impacts to plovers; and (3) ensures that mineral extractions will not impact western snowy plover habitat during the time of nesting, when such areas constitute ESHA. This condition is consistent with the recommendations of the USFWS to avoid disturbance of the threatened bird species and will continue to be fully

implemented under this amendment. Therefore as conditioned, the amended development will continue to avoid significant adverse impacts to the western snowy plover species.

e. Impacts on Water Quality

When properly managed, gravel extraction operations do not significantly adversely affect the river's water quality. However, gravel extraction operations in close proximity to an open stream course could adversely impact water quality and ultimately the biological productivity and fisheries resources of the river. For example, pushing gravel materials or allowing sediment-laden water to drain from an excavation bucket into the river could degrade water quality and biological productivity by increasing the turbidity of the water. In addition, if not retained to allow settlement of suspended sediment, wash water from gravel processing activities could entrain soil materials which could result in sedimentation of coastal waters.

Under this amendment, all of the special conditions in the original permit will remain in full force and effect and will be fully implemented. These special conditions minimize adverse effects to water quality by restricting gravel mining operations to the exposed gravel bars and prohibiting in-water activities (**Special Condition No. 1),** while also requiring a runoff control plan that is reviewed and approved by the Executive Director as part of the annual final gravel extraction plan (**Special Condition No. 3**). The remaining applicable special conditions prohibit placement of any material into the river during gravel extraction activities (**Special Condition No. 6**) and require the removal of all materials from the river following the cessation of mining and prior to the start of the rainy season (**Special Condition No. 7**). Therefore, the amended development as conditioned will continue to protect water quality consistent with the requirements Section 30231 and 30232 of the Coastal Act.

4. Maintenance and Enhancement of Estuarine Habitat Values

The fourth general limitation set by Sections 30231 and 30233 is that any proposed dredging or filling project in coastal waters must maintain and enhance the biological productivity and functional capacity of the habitat, where feasible. As discussed in the findings of the original permit, the special conditions will ensure that the amended project will not have significant adverse impacts on fisheries resources, river morphology, environmentally sensitive riparian vegetation, western snowy plover, or water quality. By avoiding impacts to coastal resources, the Commission finds that the amended development will continue to maintain the biological productivity and functional capacity of the habitat consistent with the requirements of Sections 30231, 30233, and 30240 of the Coastal Act.

Conclusion

The Commission thus finds that the amended project is an allowable use, that there is no feasible less environmentally damaging alternative, that no additional mitigation is required for the impacts associated with the dredging of coastal waters, and that riverine habitat values will be maintained or enhanced. The Commission also finds, as conditioned herein, the amended project is consistent with the requirements of Section 30233 of the Coastal Act in that feasible mitigation measures have been provided to minimize adverse environmental effects. The gravel extraction limitations and performance standards imposed through **Special Condition Nos. 1, 3, and 5** are designed to prevent impacts to river morphology, riparian vegetation, threatened and endangered

species, and water quality. Together with the requirements of **Special Condition Nos. 6 and 7** to prohibit placement of material into the active channel and limit the extraction season, the amended project is conditioned to ensure that significant adverse impacts to the Eel River from the amended gravel extraction operation will be avoided. Therefore, the amended development, as conditioned, is consistent with the requirements of Sections 30231, 30233, and 30240 of the Coastal Act.

E. DEVELOPMENT WITHIN COASTAL RIVERS AND STREAMS

Section 30236 of the Coastal Act states 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.

As discussed above, the wet trenching technique would involve excavation within salmonid ESHA habitat, and thus would not be permissible as an allowable use for filling and dredging wetlands under Section 30233(a) (5) of the Coastal Act. However, Section 30236 allows substantial alteration of rivers and streams where the primary function is for the improvement of fish habitat. The findings of the original permit discusses how the wet trenching allowed by the original permit is an effective tool for enhancement of salmonid migration corridors and in producing cold water refuge adjacent to the wetted channel. Wet trenching excavation is consistent with the use limitations of Section 30236, as explained below, to the extent that use of the wet trenching technique is primarily for the improvement of fish habitat. Pages 54-55of the staff report for CDP 1-09-021 (Exhibit 6) is incorporated here by reference.

To ensure consistency with the limited purpose for which Section 30236 allows substantial alteration of rivers and streams, the Commission attached **Special Condition No. 1-(B)** to the original permit, which states that if wet trenching methods for salmonid habitat improvements are used, the trenching within the wet channel shall be limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat. Additionally, the Commission attached **Special Condition No 3-(A)-9**. This condition requires that, prior to the start of each year's gravel extraction operations, the applicant shall submit, for the Executive Director's review and approval, a final gravel extraction plan for that gravel

extraction season that includes, among other things, evidence demonstrating that any proposed wet trenching for instream salmonid habitat restoration purposes is limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat, including but not limited to, written approval of the proposed wet trenching from NOAA-Fisheries and/or the Department of Fish and Game. Under this amendment, these conditions will remain in full force and effect and will be fully implemented.

By limiting the trenching configuration and extraction volumes to the minimum amount necessary for improving salmonid habitat, the primary function of the technique will be for the improvement of fish habitat, even though there may be incidental use of the gravel extracted for commercial purposes. This aspect of the mining is consistent with 30236, provided that the primary function of the extraction is for the improvement of fish habitat and the best mitigation measures feasible are incorporated into the project. **Special Condition Nos. 1, 3, 5, 6, and 7** discussed above require the best feasible mitigation measures be taken relating to extraction standards and limitations, methods of extraction, and the timing of extraction to minimize significant adverse environmental effects on coastal resources such as sensitive species and riparian vegetation. Under this amendment, these conditions will remain in full force and effect and will be fully implemented.

Therefore, the Commission finds that as conditioned, the wet trenching excavation is consistent with the requirements of Section 30236 of the Coastal Act, in that the primary function of the wet trenching is the improvement of fish habitat, and the best feasible mitigation measures have been provided to minimize or avoid significant adverse environmental effects.

F. PROTECTION OF ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Section 30240 of the Coastal Act states that environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and that development in areas near such sensitive habitat areas shall be sited and designed to prevent significant adverse impacts to these areas.

As discussed above in the section on permissible uses for dredging of wetlands and open coastal waters, the amended project, as conditioned, will not adversely affect environmentally sensitive habitat either within or outside of the bank-full channel of the river. The proposed gravel mining project will not result in significant cumulative adverse impacts on sensitive fish species consistent with the requirements of Sections 30231 and 30233 of the Coastal Act. In addition, mining is limited by the provisions of **Special Condition No. 1**, which prohibit mining in those portions of the gravel bars where the riparian vegetation has reached a size and extent where there is an expectation of appreciable habitat values for nesting, forage and cover of wildlife being afforded. Furthermore, none of the riparian habitat along the banks of the river will be disturbed by the extraction operation itself. Trucks hauling gravel through riparian areas may only use existing haul roads. **Special Condition No. 6** requires that the proposed project not disturb or remove any of the established riparian vegetation at the site and prohibits the cutting of new haul roads through the habitat. Moreover, to help prevent potential impacts to the habitat afforded to nesting snowy plovers, **Special Condition No. 4** requires that gravel extraction operations avoid western snowy plover habitat by, among other means, either not commencing

until after the nesting season (after September 15), or commencing only after a biologist approved by the FWS has surveyed the site for three consecutive days and either found no plovers or nests, or has found some but will continue to conduct daily surveys to ensure a 1,000-foot buffer area is maintained around the nests that have been found. The FWS recommends this protocol to avoid disturbance of the western snowy plover. The requirements of **Special Condition No. 4** will ensure that gravel operations will not be performed in western snowy plover nesting sites or otherwise disturb this threatened species.

Therefore, the Commission finds that the amended development, as conditioned, is consistent with Section 30240 of the Coastal Act, and will avoid significant adverse impacts to the environmentally sensitive habitat areas found on the site.

G. PUBLIC ACCESS

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 is 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.

The project site is located between the first public road (Highway 101) and the sea (the lower Van Duzen River is considered to be an arm of the sea in this area). Public access to the river is available at the project site via a Caltrans right-of-way that runs parallel to Highway 101, on the west side of the highway, just north of the Van Duzen River Bridge. This right-of-way is shared by the applicant to gain access to the gravel extraction and stockpile operation (which is located on the site of a former Caltrans construction staging area). The proposed amendment to authorize an additional year of gravel extraction will not affect the continued use of the right-of-way by the public. Public recreational use of the river in this particular location includes fishing (though the prime fishing season occurs in the spring or wet season when gravel extraction is not occurring), recreational boating (canoeing and kayaking), birdwatching, and other uses.

Kayakers and canoeists are generally able to stop at seasonal crossings and portage around the crossings. Up to 6 gravel extraction operations may be operating in this stretch of the river at any one time. In approving the original permit, the Commission found that the cumulative effect on boaters having to stop and portage around multiple crossings would be significant. **Special Condition No. 2** of the original permit ensures that passage downstream will not be blocked by

truck crossings installed for gravel mining operations. This special condition remains in full force and effect and will be fully implemented under this amendment to ensure boaters are able to pass through the crossings.

Special Condition No. 4 of the original permit requires that gates to block vehicle use in suitable snowy plover habitat required by the FWS Biological Opinion be designed to block vehicular access only and allow for pedestrian access to the river. This special condition remains in full force and effect and will be fully implemented under this amendment. The project as conditioned would have no significant adverse effect on public access. Therefore, the Commission finds that the amended development, as conditioned is consistent with the public access policies of the Coastal Act.

F. PROTECTION OF VISUAL RESOURCES

Section 30251 of the Coastal Act provides in applicable part that the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be (a) sited and designed to protect views to and along the ocean and scenic coastal areas, and (b) visually compatible with the character of surrounding areas.

The gravel extraction and gravel processing operations would be visible from Highway 101. However, these operations are seasonal activities that would occur for only approximately three months each year. In addition, many of the various gravel extraction operations occurring along the lower Eel and Van Duzen Rivers are similarly visible from Highway 101 and other public roads. The proposed project would not be any more prominent than the gravel extraction and processing activities that have occurred in the past. Stockpiling gravel adjacent to the highway could have the greatest impact on visual resources because the stockpiles could potentially become very tall and actually block views to a certain degree of the river from the Highway. However, as proposed by the applicant, the stockpiles would only be a maximum of 30 feet high. At that height, the stockpiles would not rise above the tops of the trees in the adjacent riparian woodland and thus would not block views of the river that are not already blocked by the woodland. Therefore, the Commission finds that, the proposed development, as conditioned, is consistent with the visual resource policies of Section 30251 of the Coastal Act, as the amended project is compatible with the visual character of the surrounding area and will not block views to and along the coast.

G. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The County of Humboldt, as the lead agency, adopted a Programmatic Environmental Impact Report (PEIR) in 1992 to describe and analyze the potential environmental effects resulting from the gravel extraction operations in the lower Eel and lower Van Duzen Rivers.

Section 13906 of the California Code of Regulation requires Coastal Commission approval of a coastal development permit application to be supported by findings showing that the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Public Resources Code Section 21080.5(d) (2) (A) of CEQA prohibits a proposed development from being approved if there are feasible

alternatives or feasible mitigation measures available, which would significantly lessen any significant effect that the activity may have on the environment.

The Commission incorporates its findings on conformity with Coastal Act policies at this point as if set forth in full. No public comments regarding potential significant adverse environmental effects of the amended project were received prior to preparation of the staff report. As discussed herein in the findings addressing the consistency of the proposed project with the Coastal Act, the amended project has been conditioned in order to be found consistent with the policies of the Coastal Act. As specifically discussed in these above findings which are hereby incorporated by reference, mitigation measures which will minimize all adverse environmental impact have been required. These required mitigation measures include requirements that limit extraction to avoid environmentally sensitive habitat areas, rare and endangered species, migratory fish, and extractions that could lead to changes in river morphology. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity would have on the environment. Therefore, the Commission finds that the amended development, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

APPENDIX A:

SUBSTANTIVE FILE DOCUMENTS

1. Coastal Development Permit No. 1-09-021 (Rock & Dwelley Gravel Mining)
2. Final Program Environmental Impact Report (EIR) on Gravel Removal from the Lower Eel River, adopted 1992, and Supplemental EIR, certified July 24, 1992
3. *Interim Monitoring Program and Adaptive Management Practices for Gravel Removal from the Lower Eel and Van Duzen Rivers (IMP)*, July 2, 1996
4. *Biological Assessment for the U.S. Army Corps of Engineers LOP-2009 Aggregate Extraction Operations Lower Eel River and Van Duzen River, Humboldt County, California*, prepared by Alice Berg & Associates, Clio, CA, May 6, 2009
5. *Lower Eel River Gravel Mining and Extraction Activities Biological Assessment (Western Snowy Plover)*, prepared by Winkler & Kelly, Eureka, CA, March 9, 2009
6. NOAA-Fisheries Formal Consultation/ Final Biological Opinion for LOP-2009
7. U.S. Fish & Wildlife Service Formal Consultation/Final Biological Opinion for LOP-2009
8. *Analysis of Eel River Cross Sections at Gravel Mining Sites, 1997-2007*, prepared by County of Humboldt Extraction Review Team (CHERT), January 2009
9. Humboldt County certified Local Coastal Program.

APPENDIX B:

OTHER AGENCY APPROVALS

CHERT Review

Pursuant to the Corps LOP permit procedures and the County of Humboldt's surface mining regulations, in-stream gravel mining projects within Humboldt County are required to be assessed for potential direct and cumulative impacts to riverine resources by an independent scientific panel known as the County of Humboldt Extraction Review Team, or "CHERT." The CHERT in turn makes specific recommendations to the County and the Corps with regard to appropriate actions that should be taken on the mining applications. Often during the review of mining plans for the upcoming mining season, CHERT may make constructive recommendations to the applicants in the interest of designing a mining proposal that will avoid and/or minimize significant adverse impacts to river resources. These recommendations may involve changes to the amount of gravel proposed to be extracted, the specific location(s) of the extraction area(s), or the proposed mining techniques. Exhibit 6, the findings for the original permit, contains more information about the CHERT process. The project, as amended, will undergo CHERT review as established under **Special Condition No. 3-A-(4)** of the amended permit. This condition requires the applicant to annually submit to the Coastal Commission Executive Director for written review and approval, a pre-extraction mining plan for the coming extraction season. Among other requirements, the plan must contain a copy of the review comments obtained from the CHERT as part of the final gravel extraction plan as well as evidence that the final gravel extraction plan is consistent with all recommendations of CHERT and all terms and conditions of this coastal development permit as amended. This special condition will continue to be fully implemented under the amendment.

California Department of Fish and Wildlife Review

The amended project requires an annual Section 1603 Streambed Alteration Agreement from the Department of Fish and Wildlife. Pursuant **to Special Condition No. 4,** the project, as amended, will undergo CDFW review and the applicant must submit a copy of the Section 1603 agreement that is valid for the 2014 gravel extraction season and approved by the Department of Fish and Wildlife to the Executive Director. The condition requires that any project changes resulting from CDFW's approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit. The current 1603 Streambed Alteration Agreement expires on December 31, 2014.

Regional Water Quality Control Board Review

The amended project requires a Water Quality Certification (WQC) from the North Coast Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act. Pursuant to the requirements of **Special Condition No. 10** of the amended permit, the applicant must submit a copy of a WQC approved by the Board that is valid for the 2014 gravel extraction season. The condition requires that any project changes resulting from the agency's approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit. The current water quality certification expires on December 31, 2014.

Annual U.S. Army Corps of Engineers Review
The amended project is within and adjacent to a navigable waterway and is subject to the authority of the U.S. Army Corps of Engineers under Section 404 of the Federal Water Pollution Control Act (33 USC 1251 et seq.) and Section 10 of the Rivers and Harbors Act (33 USC 403). Pursuant to the Federal Coastal Management Act, any approval granted by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Pursuant to the requirements of **Special Condition No. 11** of the amended permit, the applicant must submit evidence, prior to commencing gravel extraction operations each year, that all necessary approvals from the Corps for the gravel extraction that is valid for that year's gravel extraction season have been obtained. The condition requires that any project changes resulting from the agency's approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit. The current Corps permit expires on December 31, 2014.

State Lands Commission
The amended project is located in the bed of the Eel River, a navigable river, between the ordinary high water marks. As such, the State of California may hold a public trust easement and other property interests at the site. Any such interest would be administered by the State Lands Commission. To assure that the applicant has a sufficient legal property interest in the site to carryout the amended project and to comply with the terms of the permit, the Commission attached **Special Condition No. 8** to the original permit**,** which required that the applicant submit evidence of that any necessary authorization from the State Lands Commission has been obtained prior to issuance of the permit. The current State Lands Commission authorization was received on September 12, 2009 and does not have an expiration date.

Final Biological Opinions
The amended project which includes gravel extraction in the 2014 gravel extraction season is addressed by final Biological Opinions issued by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS). The Biological Opinions were prepared as a result of formal consultations between the U.S. Army Corps of Engineers (Corps), NMFS and FWS pursuant to Section 7 of the Federal Endangered Species Act. The NMFS BO was finalized in September 2009 and the FWS BO was finalized in August 2009. To ensure that the project ultimately approved by the agencies was the same as the project authorized by the original coastal development permit, the Commission attached **Special Condition No. 14**, which required the Applicant to submit, prior to issuance, final Biological Opinions in support of gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. The existing Biological Opinions are valid and include an analysis of potential adverse effects to endangered species for the 2014 gravel extraction season.

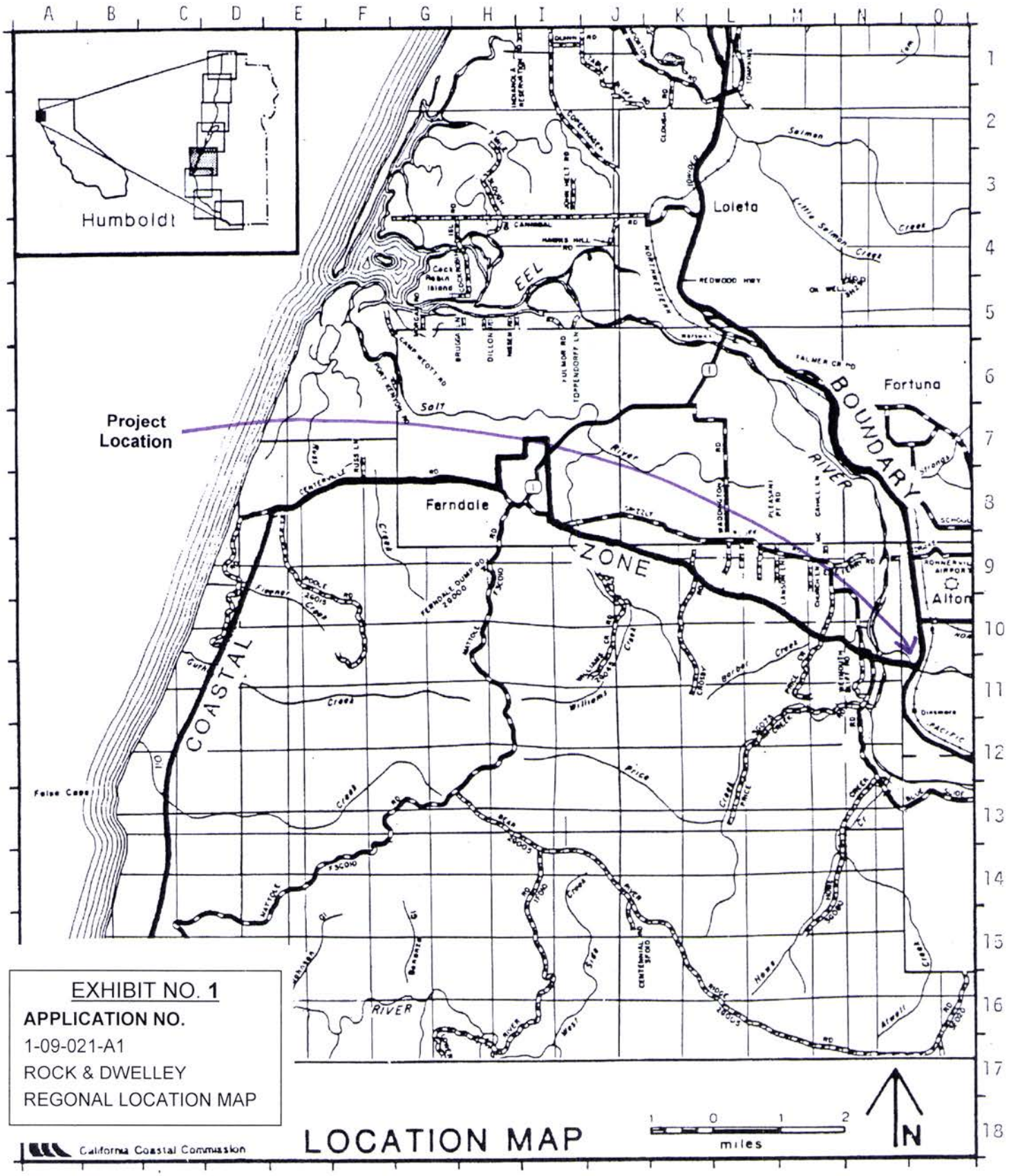


EXHIBIT NO. 1

APPLICATION NO.

1-09-021-A1

ROCK & DWELLEY

REGONAL LOCATION MAP

California Coastal Commission

County of Humboldt

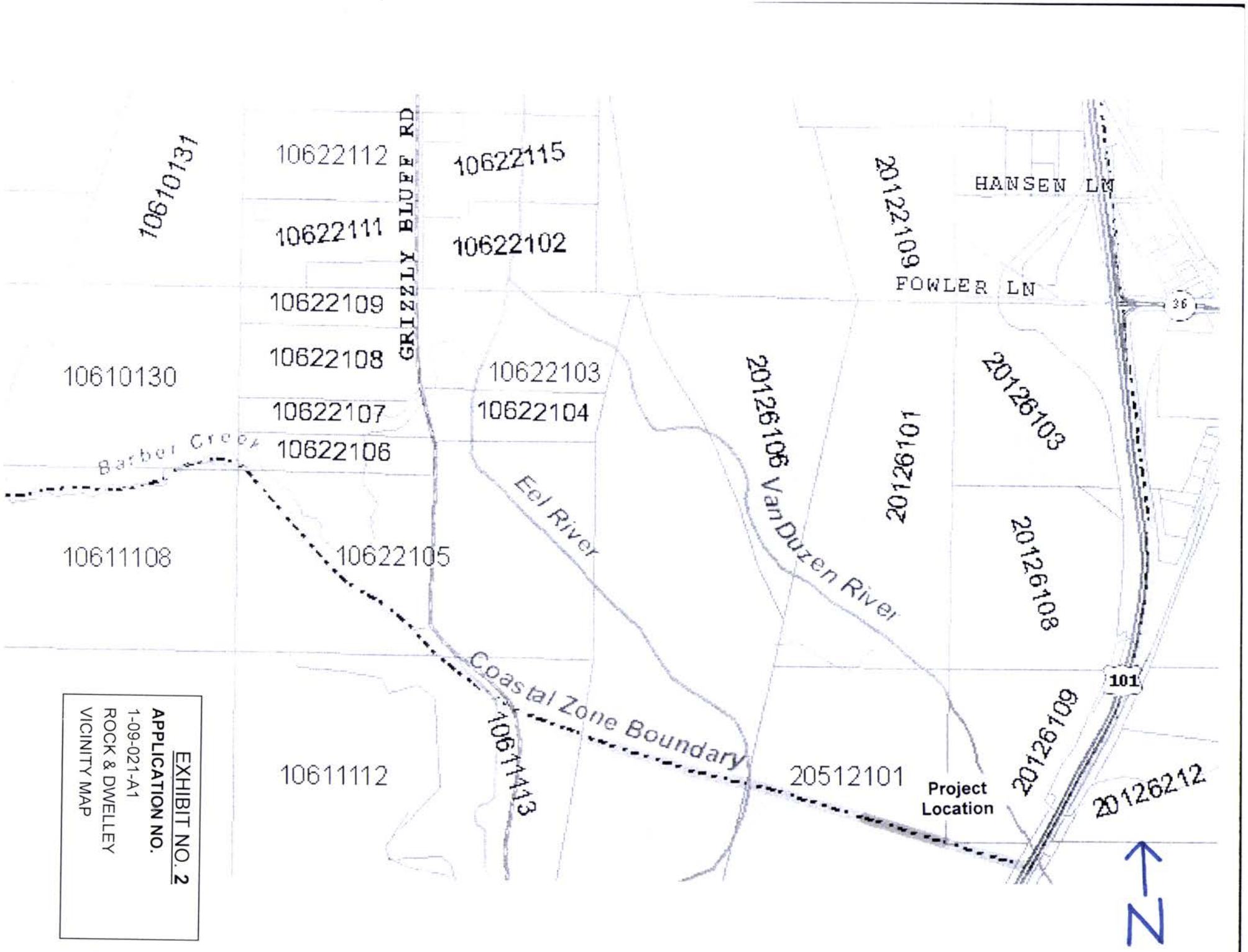


EXHIBIT NO. 2
APPLICATION NO.
1-09-021-A1
ROCK & DWELLEY
VICINITY MAP

LETTER OF PERMISSION PROCEDURE (LOP 2009) GRAVEL MINING AND EXCAVATION ACTIVITIES W

HUMBOLDT COUNTY

Interested parties are hereby notified that, in accordance with Title 33 CFR 325.2(e), published in the Federal Register, November 13, 1986, the U.S. Army Corps of Engineers, San Francisco District (Corps) has adopted a Letter of Permission (LOP) procedure for the authorization of work described herein.

The purpose of the LOP procedure (LOP 2009) is to streamline Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 authorizations for gravel mining and extraction activities in Humboldt County that do not pose significant adverse individual or cumulative impacts.

The letters of permission (LOPs) to be issued under this procedure will contain special conditions intended to protect the environment and natural and cultural resources. In cases where the District Engineer (DE) considers it necessary, applications will be evaluated for individual permits.

SCOPE OF WORK:

Work authorized by LOP or modification letter under this procedure is limited to discharges of dredged or fill material associated with gravel mining activities in waters of the United States, including navigable waters of the United States, within Humboldt County, California. Activities that may be authorized under this procedure include, but are not limited to, sand and gravel mining and work associated with these activities, such as temporary stock piling of gravel in a dry section of the stream, associated salmonid habitat improvement activities, and construction of road crossings. Impacts to waters of the United States, including wetlands, shall be avoided or minimized through the use of practicable alternatives. Reasonable compensation for unavoidable adverse impacts to waters of the United States will be required. Work that would have unmitigatable adverse impacts on the aquatic environment or would cause a substantial reduction in the extent of waters of the United States will not be authorized by LOP. The activities authorized under LOP 2009 shall be part of a single and complete project.

EVALUATION PROCEDURES:

Gravel operations at the locations described in Appendix F are eligible for authorization under the LOP 2009. Prospective applicants should apply for a permit early enough that the Corps can request and obtain a tiering letter from the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), if necessary, before the gravel season begins. All applicants shall submit complete applications, after consulting with the CHERT (County of Humboldt Extraction Review Team), to the Corps and NMFS for review to determine whether the excavation activity qualifies under the LOP 2009. CHERT will help identify areas of concern and locations for cross-section monitoring. If the activity qualifies under the LOP 2009, it will be granted an LOP for the duration of this procedure, pending annual confirmations by LOP modification letters. Each permittee must also submit yearly monitoring data regarding

extraction amounts, cross-sectional information, biological monitoring, and aerial photos.

Each spring, the Corps shall invite the U.S. Environmental Protection Agency (EPA), NMFS, USFWS, California Coastal Commission (CCC), California Department of Fish and Game (CDFG), and the California Regional Water Quality Control Board (RWQCB) to an interagency evaluation and coordination meeting to review new applications and yearly compliance data of previously authorized activities.

Should an agency or member of the public object to continuing an activity under an existing authorization, based on evidence of non-compliance or evidence of more than minimal impacts, the Corps may suspend and/or revoke the existing authorization and require an individual permit unless the permittee can demonstrate compliance with the LOP. The permittee may also be required to reduce the future impacts of its operations to minimal impacts and mitigate for past non-compliance.

The general time line for the LOP 2009 is stated below. Biological monitoring dates are listed in Appendix D.

FEB 1	CHERT annual report that evaluates the past extractions may in part rely on the monitoring reports.
SPRING	Gravel Week: the regulating agencies meet to review permit applications and compliance. No specific date is established for the annual meeting.
	Aerial orthographic photos to be taken.
	Gravel extraction plans along with CHERT recommendations shall be submitted to the Corps and NMFS at the earliest possible date and will be reviewed in the order received.
JUN 1	Earliest extraction.
JUN 30	Earliest construction of temporary channel crossings.
SEP 20-OCT 7	Post extraction orthographic aerial photos to be taken.
OCT 1	Gravel stockpiled on river bars must be removed on a daily basis after October 1. Each day thereafter, extraction sites shall be groomed and graded to drain freely at the end of each working day.
OCT 15	All channel crossings must be removed. Regrading must be completed for all gravel bars. All gravel extraction ceases on river bars, unless an approved river flow monitoring plan is enacted and a time extension granted.
NOV 1-FEB 28	Plant mitigation areas. Post-extraction aerial photos are delivered to the Corps, CHERT, and NMFS.

DEC 1 Post-extraction cross section data and biological monitoring data submitted to Corps, NMFS and CHERT except biological monitoring data gathered in November and December.

DEC 31 Mitigation monitoring reports due to Corps, NMFS, and CHERT. Biological monitoring data gathered in November and/or December submitted to Corps and CHERT.

TERMS OF LOP 2009:

Projects authorized under this procedure are subject to the following terms. The terms on gravel extraction for this procedure have been expanded relative to those in the original LOP 96-1 to reflect new information and concerns. They also require closer coordination between the Corps, NMFS, and CHERT in project review and approval. The Corps has the right to add or modify terms as appropriate. Modifications to excavation procedures may be made to increase fisheries and wildlife habitat with Corps approval.

1. **All applicants shall use the CHERT process for annual review and recommendations.**

CHERT is a critical part of this LOP procedure. In addition to making recommendations to the operators, CHERT also provides the Corps and NMFS with a summary of its rationale supporting the preferred alternative. Gravel extraction proposals shall include a summary of the rationale supporting how the CHERT recommendation does not increase channel braiding and promotes channel confinement, and does not increase the risk of adult salmonid stranding or decrease riffle and redd stability.

2. **Minimum head of bar buffer**

The upstream end of the bar (head of bar) shall not be mined or otherwise altered by the proposed action. The minimum head of the bar shall be defined as that portion of the bar that extends from at least the upper third of the bar to the upstream end of the bar that is exposed at summer low flow. Therefore, the upstream one-third portion of the bar as exposed at summer low flow is provided as the minimum head of bar buffer. The intent of the head of bar buffer is to provide protection of the natural stream flow steering effect provided by an undisturbed bar.

Some alternative extraction techniques, such as longer and much narrower skims adjacent to the low flow channel, have specific geomorphic objectives that may require extraction on a portion of the head of bar buffer. Variances to the minimum head of bar buffer may be considered on a case-by-case basis, if the proposed alternative provides equal or greater protection. NMFS will inform the Corps and CHERT if a proposed variance does not comply with the terms of the Incidental Take Statement. The specific nature of the proposed variance must be described, along with sufficient biological, hydrological, and sediment transport rationale to support the recommended alternative. For example, any modification in the default head-of-bar buffer dimensions should, at a minimum, provide for protection of the adjacent cross-over riffle, by limiting extraction to the area downstream of the riffle. In addition, NMFS may impose special requirements, including additional monitoring on approved variances to the minimum head of

bar buffer, to insure there is no take beyond what is allowed in the Incidental Take Statement of the biological opinion.

3. The <u>minimum</u> skim floor elevation shall be at least the water surface elevation of the 35% exceedence flow.

The minimum skim floor elevation shall be the elevation of the water surface at the 35% exceedence flow for each site, on an annual basis. Instructions for determining, marking and reporting the water surface elevation of the 35% exceedence flow are available from NMFS. See the contact information in the Submittals section beginning on page 12.

Additionally, the water surface elevation of the 35% exceedence flow shall be marked on the gravel bar and indicated on the cross section survey data.

To aid compliance with these setbacks, the area of extraction shall be clearly flagged, painted, or staked. Excavated material shall be skimmed off the surface. Other methods of excavation, such as trenching, may be approved by the Corps, however, these alternative designs will be discussed with other resource agencies (e.g., NMFS, CDFG) and CHERT prior to submitting the extraction plans in the spring.

4. Temporary channel crossings.

a. *Design and construction:* The location, construction and removal of all temporary channel crossings must be reviewed by CHERT for conformance with these guidelines and described in the CHERT recommendation. Crossings will be designed and installed to minimize turbidity and geomorphic impacts from bridge construction, bridge use and bridge removal. Factors to consider include habitat quality, channel width, length of available bridges, required bridge width, water depth and velocity, amount of fine sediment in the native gravel and the availability of washed rock.

- Main channels must be spanned to the maximum length practicable using either a flatcar or bridge span. Appropriate culverts may be approved for use in secondary channels on a case-by-case basis.

- Heavy equipment passes across the wetted channel during temporary channel crossing construction and removal will be kept to an absolute minimum and described in the CHERT recommendation. Heavy equipment passes shall be limited to two passes per bridge construction and two passes per removal.

- Native gravel can be used for bridge approaches and abutments if the bridge will completely span the wetted channel, and the abutment materials are removed and regraded onto approved sites upon bridge removal.

- Use of brow logs, concrete blocks, concrete K-rails or other suitable materials shall be used in temporary abutments to minimize the amount of sediment required for abutments or approach ramps.

- If encroachment into the low flow channel is necessary to span the wetted channel, then approach ramps shall be constructed using techniques that will reduce the input of fine sediment into the channel. These techniques could include a base of washed rock or cobbles on the access side of the stream. The base shall extend from the bed of the stream to six inches above the water surface at construction time. This base can be topped with native gravel. Alternatively, if washed rock is not readily available, native gravel used in wetted approaches and abutments may be lined with filter fabric and surrounded with K-rails. Other methods that would provide equal or superior protection from turbidity impacts may be suggested by the operator and presented for review and recommendation by CHERT and NMFS. Other methods may be approved if they meet the objective of minimizing sediment delivery to the low-flow channel.

- Upon bridge removal, the original channel configuration shall be restored to the fullest extent feasible.

b. *Timing:* Temporary crossings shall be placed after June 30 only. All crossings and associated fills must be removed after excavation ceases, but before September 15 for the Mad River and before October 15 for all other rivers. The Corps shall provide NMFS a copy of any request for a time extension for bridge construction or removal for its review before the time extension may be authorized by the Corps, due to the sensitivity of working directly within the wetted channel. It is not expected that extensions will be granted if California Coastal Chinook (CC Chinook) salmon adults have entered the extraction reach.

c. *Location:* Bridge locations shall avoid known spawning areas. The middle of riffles may provide the best location for temporary crossings since the bridge may be able to span the entire wetted channel. Where bridges are not able to span the entire wetted channel, the crossing location shall be determined on a site-specific basis. The proposed location, and rationale used to determine how the crossing location minimizes effects to salmonids, shall be included in the CHERT recommendation. Haul roads shall follow the shortest route possible while avoiding sensitive areas such as riparian vegetation. If excessive compaction is identified, the roads shall be scarified after extraction is complete.

5. Storage and stockpiles

Temporary storage of excavated material may occur on the gravel bar, but must be removed by October 1. Temporary stockpiling of gravel on bars that are on rivers listed under the Wild and Scenic Rivers Act (see Appendix B) may occur during the active work week, Monday through Friday, but must be removed before Saturday of each weekend.

In order to minimize the turbidity associated with excavating wet sediment, all wet excavated sediment must be stockpiled on the gravel bar away from the low flow channel and allowed to drain prior to hauling across the temporary channel crossing.

6. Vegetation and wetlands

All riparian woody vegetation and wetlands must be avoided to the maximum extent possible. Any riparian vegetation or wetland that is to be disturbed must be clearly identified by mapping. Woody vegetation that is part of a contiguous 1/8-acre complex or is at least 2 inches diameter

that is disturbed must be mitigated. Impacts to other woody vegetation must be described and submitted to the Corps and CHERT with the gravel extraction plans. These impacts may require mitigation at the discretion of the Corps. Impacted areas that must be mapped consist of riparian vegetation that have driplines within 25 feet of excavation activities (excavation, stockpiling, parking, etc.) or wetlands, which are filled, excavated or drained. Mitigation for impacts to woody vegetation shall not be required for pre-existing haul roads, stockpile areas and facilities (see discussion under Required Mitigation).

7. Structure setbacks

Gravel removal must remain a minimum distance of 500 feet from any structure (i.e. bridge, water intake, dam, etc.) in the river. For bridges, the minimum setback distance is the length of the bridge or 500 feet, whichever is greater. Gravel removal may encroach within this setback if written approval is given by owners of these structures and approved by the Corps. A copy of written approvals shall be provided to the Corps.

8. Regrading

The project area must be regraded, if necessary, before the water levels rise in the rainy season. Grading must be completed by October 15 each year. Regrading includes filling in depressions, grading the construction/excavation site according to the approved configuration, leaving the area in a free-draining configuration (no depressions and sloping toward the low flow channel), and removing all temporary fills from the project area. Regrading may not be necessary if extraction operations leave the extraction area free of depressions and temporary fills and meet the approved mining configuration.

9. Timing of extraction

Unless the operator's LOP is specifically modified, gravel extraction shall cease by October 15 each year. Regrading, if necessary, shall be completed prior to October 15 each year. Requests for a time extension will be reviewed on a case-by-case basis. The applicant, however, must have regraded the site before an extension can be authorized. Requests for an extension must include an approved CDFG Stream Alteration Agreement (SAA) extension or exemption. The Corps will coordinate with CHERT and NMFS before a decision is made on the time extension. Also note water crossing timing terms described above.

10. Wild and Scenic Rivers

Sections of the Eel, Klamath, Trinity, and Van Duzen rivers in Humboldt County are designated recreational and scenic. For a list of these recreational and scenic river sections see Appendix B. Temporary stockpiling of gravel on bars that are on rivers listed under the Wild and Scenic Rivers Act (see Appendix B) may occur during the active work week, Monday through Friday, but must be removed before Saturday of each weekend.

11. Endangered Species

All applicants shall submit, as part of the application, a written assessment by a qualified

biologist describing the potential effects of the project on federally threatened, endangered, or proposed species under the Endangered Species Act. This assessment shall include, at a minimum, an account of habitat suitability within a 0.25 mile radius of the project site, and pertinent sighting information from available sources including, but not limited to, wildlife sighting databases maintained by CDFG and USFWS.

There is a potential for gravel operations downstream of the confluence of the Eel River and the Van Duzen River to adversely affect the western snowy plover. Appendix E contains requirements necessary to assure the extraction activities (including pre-season surveys) are not likely to adversely affect the western snowy plover.

There is a potential for operations anywhere in the rivers and streams of Humboldt County to adversely affect SONCC coho salmon, CC Chinook salmon and NC steelhead, which are Federally-listed threatened Evolutional Significant Units (species). Appendix M contains the **obsolete** Incidental Take Statement from the Biological Opinion from NMFS, dated August 13, 2004, and will be replaced by the most recent BO, when completed. The reasonable and prudent measure contains restrictions which are mandatory conditions of the LOP 2009.

12. Habitat Enhancement and Protection

The actions authorized by this LOP are expected to include certain activities at gravel extraction sites, during extraction seasons, that will enhance habitat for salmonids and other riverine species. The specific details of such habitat enhancement activities shall be determined during, and follow, the same multiagency pre-extraction design review process that is used for gravel extraction operations. Many of the habitat enhancement activities shall be consistent in scope, size and cost impact as restoration activities that have occurred in the past under LOP-2004. These activities included, but were not limited to, trenching designed to improve salmon migration, alcove construction, placement of edge water large woody debris, and construction of wetland pits to improve aquatic and riparian habitat. Some habitat enhancement activities will be new to this LOP, including, but not limited to, riparian planting and strategic placement of large wood and boulders in the stream.

The biological assessment (BA) under preparation for this procedure is expected to provide a more detailed description of activities and assessment of effects of habitat enhancement activities (as well as gravel extraction activities). The extent of habitat enhancement activities will be estimated based, in part, on accomplishments under the LOP-2004, the previous version, as well as operational feasibility during the 5 year implementation period of the LOP **2009**. In determining a rough target for enhancement activities, the BA shall list and quantify the habitat improvement activities that were accomplished under LOP-2004, and describe additional, **voluntary,** reach-specific habitat improvement activities that are **covered** under the LOP**2009**. This procedure assumes and authorizes that habitat improvement projects of like kind, nature and quantity would occur in the future. Please see Appendix A and the appendices specific to the river reaches for typical habitat improvement activities.

Although the habitat improvement activities (HIA) may provide substantial benefits to the salmonids and other aquatic organisms, the HIA are incidental to the extraction activities and shall not be made a condition of a permit or annual approval.

Large woody debris (LWD) in the wetted channel and on floodplains and terraces is an important component of aquatic and riparian habitat. However, it is common practice for LWD to be gathered by local residents for firewood and other uses. To reduce the adverse effects of this longstanding practice, educational signing regarding the importance of LWD for salmonids shall be placed at access roads owned, controlled, or utilized by the gravel operators. In addition, in order to protect LWD deposited on mined gravel bars, all access roads owned or controlled by commercial gravel operators shall be gated and locked to reduce access; the County shall be exempt from this requirement. Operators should consult with NMFS for suggestions on the wording and design of this sign.

13. General Conditions. (This section had previously been appendix A)

1. The Department of the Army relies in part on the information provided by the permittee. If, subsequent to issuing this permit, such information proves to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part.

2. Permittees whose projects are authorized by this procedure shall comply with all terms and conditions herein. Failure to abide by such conditions invalidates the authorization and may result in a violation of the law, requiring restoration of the site or other remedial action.

3. An LOP should not be considered as an approval of the design features of any authorized project or an implication that such is considered adequate for the purpose intended. A Department of the Army permit merely expresses the consent of the Federal Government to the proposed work insofar as public rights are concerned. This permit does not authorize any damage to private property, invasion of private rights, or any infringement of federal, state or local laws or regulations. Nor does it relieve the permittee from the requirement to obtain a local permit from the jurisdiction within which the project is located and to address all non-encroachment restrictions within a floodway of such local jurisdiction as identified by the Federal Emergency Management Agency.

4. This LOP procedure may be modified or suspended in whole or in part if it is determined that the individual or cumulative impacts of work that would be authorized using this procedure are contrary to the public interest. The authorization for individual projects may also be summarily modified, suspended, or revoked, in whole or in part, upon a finding by the District Engineer that immediate suspension of the project would be in the public interest.

5. Any modification, suspension or revocation of the District Engineer's authorization shall not be the basis for any claim for damages against the United States.

6. This permit does not authorize the interference with any existing or proposed Federal project, and the permittee shall not be entitled to compensation for damage or injury to the structures or activities authorized herein which may result from existing or future operations undertaken by the United States in the public interest.

7. No attempt shall be made by the permittee to prevent the full and free public use of all navigable waters of the United States, at or adjacent to the project authorized herein.

8. There shall be no unreasonable interference with navigation by the existence or use of the permanent and temporary structures authorized herein.

9. The permittee shall make every reasonable effort to conduct the activities authorized herein in a manner that will minimize any adverse impact of the work on water quality, fish and wildlife, and the natural environment, including adverse impacts to migratory waterfowl breeding areas, spawning areas, and riparian areas.

10. The permittee shall allow the District Engineer and his authorized representative(s) to make periodic inspections at any time deemed necessary to assure that the activity being performed under this authorization is in accordance with the terms and conditions prescribed herein.

11. The impact of activities authorized by LOP using this procedure on cultural resources listed, or eligible for listing, in the National Register of Historic Places (NRHP), shall be taken into account by the U.S. Army Corps of Engineers (Corps) prior to the initiation of work. If previously unknown cultural resources are encountered during work authorized by this permit, the San Francisco District shall be notified and the sites avoided until the Corps can assess their eligibility for listing in the NRHP. Sites determined to be eligible for listing in the NRHP shall require consultation between the Corps and the State Historic Preservation Office and/or the Advisory Council on Historic Places. Cultural resources include prehistoric and historic archeological sites, and areas or structures of cultural interest which occur in the permit area.

12. All temporary fills within waters of the U.S. shall be removed in their entirety.

13. All extraction activities in the vicinity of federal projects shall be coordinated for required setback distances with the Corps office prior to application for a permit.

14. Heavy equipment working in wetlands shall be placed on mats, or other measures shall be taken to minimize disturbances to soil.

15. No authorization will be granted under this LOP procedure for any activity that is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Endangered Species Act, or that is likely to destroy or adversely modify the critical habitat of such species. Permittees shall notify the District Engineer if any listed species, proposed species or critical habitat might be affected by, or is in the vicinity of, the project, and shall not begin work until notified by the District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized.

16. The project shall not significantly disrupt the movement of those species of aquatic life indigenous to the water body or those species that normally migrate through the project area.

14. Special Conditions.

Additional special conditions may be added to individual LOPs on a case-by-case basis to

minimize adverse impacts to the aquatic ecosystem and to the scenic and recreational values of the river reaches listed in the Wild and Scenic Rivers Act. Modifications to excavation procedures may be made to increase fisheries and wildlife habitat with Corps approval.

In addition to terms discussed above, projects authorized by LOP are subject to the general conditions contained in Appendix A and any special conditions that may be added.

AUTHORIZATIONS FROM OTHER AGENCIES:

The permittee is responsible for obtaining any and all additional federal, state, tribal, or local permits that may be required, which include, but are not limited to:

1. STATE WATER QUALITY CERTIFICATION: In order for an operator's LOP to be valid, he/she must obtain a water quality certification pursuant to Section 401 of the Clean Water Act from the North Coast Regional Water Quality Control Board (RWQCB). For operations within the boundaries of a federally recognized Indian Reservation, see #5 below.

The state of California has adopted general National Pollution Discharge Elimination System (NPDES) permits to cover those mining activities which must obtain permits to discharge stormwater associated with industrial activity - as defined in 40 CFR Section 122.26(b)(14). For information about NPDES requirements, applicants can contact the RWQCB, North Coast Region, at 5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403.

2. When streambed materials such as sand and gravel are to be disturbed or removed from waters in the state of California, the permittee must obtain a Streambed Alteration Agreement from the CDFG, except when working within the boundaries of a federally recognized Indian Reservation (see #5 below). The permittee can contact the CDFG at California Department of Fish and Game, Region 1, 601 Locust Street, Redding, California 96001.

3. All gravel and mining operations must either be permitted by or exempted by the California Department of Conservation Division of Mines and Geology's Lead Agency (Lead Agency), except for work within the boundaries of a Federally recognized Indian Reservation (see #5 below). The Lead Agency for Humboldt County is: Humboldt County Department of Community Services, 3015 H Street, Eureka, California 95501. Failure to provide proof of a conditional use permit, vested rights or exemption letter will preclude use of the LOP 2009.

4. Sand and gravel extraction and other development activities located within the Coastal Zone may require a Coastal Development Permit and a Coastal Zone Management Act Consistency Concurrence from either the California Coastal Commission (CCC) located at 45 Fremont Street, Suite 2000, San Francisco, California 94105-2219, or the County of Humboldt Planning and Building Department located at 3015 H Street, Eureka, California 95501.

5. Activities within the boundaries of a federally recognized Indian Reservation need to obtain a water quality certification from the U.S. Environmental Protection Agency (EPA) or from the Indian Reservation (if it is authorized by the EPA to grant water quality certifications). In addition, there may be other permits required by the Indian Reservation that are not listed

here. The applicant shall contact the appropriate Indian Reservation for more information.

6. Activities that occur below the mean high water mark on tidal waterways and below the ordinary high water mark on non-tidal waterways may have to obtain easements from or pay fees to the California State Lands Commission (SLC). The SLC can be contacted at 100 Howe Avenue, Suite 100 South, Sacramento, California 95825-8202, or reached at (916) 574-1800.

7. U.S. Coast Guard (USCG) is the Federal agency with permitting authority and regulatory jurisdiction for bridges, pursuant to the General Bridge Act. The USCG will provide the applicant with a USCG jurisdictional determination and directions for additional bridge permitting issues, if any. The USCG can be contacted at Commander, Eleventh Coast Guard District, Bridge Section, Bldg. 50-3, Coast Guard Island, Alameda, CA, 94501-5100, or by telephone at (510) 437-3514.

APPLICATION PROCEDURES:

All new projects (see #7 under Terms on page 3) must submit a notice of intent to mine gravel to the Corps, Eureka Field Office, by February 1 of that year. Before mining, a pre-extraction report (mining proposal) must be submitted that contains the information described below. Following completion of extraction, a post-extraction report must be submitted (also described below). Copies of all pre- and post-extraction information, including cross sections, aerial photos, and other information shall be provided to the Corps, NMFS, and CHERT at about the same time. Once the pre-extraction report has been submitted, a site review will be scheduled for all Class A operations. A mutually agreeable date shall be scheduled between CHERT, the Corps and NMFS for site reviews, or a five working day notice of when the site review is scheduled to occur shall be provided to NMFS.

At the discretion of the operator, a preliminary site review may be requested to discuss preferred mining alternatives before a pre-extraction report is prepared. This can often save costs of unnecessary surveying and plan preparation, as well as time, by narrowing the scope of mining design alternatives to one that is likely to meet the requirements set forth herein. Should operators desire a preliminary review, a mutually agreeable date shall be scheduled between CHERT, the Corps and NMFS for site reviews, or a five working day notice of when the site review is scheduled to occur shall be provided to NMFS.

In all cases an application for authorization of work under LOP 2009 must include a written description of the project, proposed work schedule, the address and telephone number of a point of contact who can be reached during working hours, an 8.5 by 11 inch vicinity map, and an 8.5 by 11 inch site or location map showing all the boundaries of all proposed work (maps and figures can also be on 11 by 17 inch paper). The information may be submitted on an Application for Department of the Army Permit form (ENG Form 4345) or in any other form which will clearly supply the information in a concise manner. In general, projects that remove more than 250,000 cubic yards per year will not be considered eligible for authorization under this procedure. Projects will also be considered in relation to other extraction operations.

Project submittal must include a description of the project and at least the following

information, unless modified by the Corps, on a yearly basis:

I. A pre-extraction report shall be submitted to the Corps, CHERT, and NMFS at least two weeks prior to excavation. Pre-extraction reports shall include:

A. Cross-section Surveys: Monitoring and Extraction cross-section surveys shall be prepared according to Appendix C (attached), unless modified by CHERT and approved by the Corps. Each year spring surveys shall be submitted to CHERT for review. Applicants shall submit gravel extraction plans meeting CHERT recommendations to the Corps for approval prior to commencing gravel extraction operations;

B. A Streambed Alteration Agreement (SAA) or any extension signed by the CDFG, or a Riparian Protection and Surface Mining Permit signed by a Federally recognized Indian Reservation. Permits may be obtained concurrently with the Corps permit;

C. A pre-extraction vertical aerial photo of the location. Photos shall be taken the spring of each year and shall include the entire project reach (extraction zone reach of the project site and immediate upstream and downstream reaches within one half length of the extraction zone reach of the project, as measured along the thalweg (the bottom of the low-flow channel). Pre-extraction photos must be vertical photos at a scale of 1:6000 and shall diagram proposed extraction activities as described in Appendix C;

D. A mitigation report containing the mapped areas that are impacted (riparian vegetation and wetlands) and the mitigation proposed to minimize these impacts;

E. For new projects, the applicant must submit to the Corps and the consulting regulatory agencies participating in the spring meetings, by February 1 of the initial gravel mining year, copies of the environmental documentation required by the Lead Agency when requesting a conditional use permit, vested right or exemption. The Corps may also require additional information.

F. Except for the temporally and spatially isolated sites, the monitoring cross-sections shall be provided to the agencies annually; the temporally and spatially isolated sites shall be reported each second year, and the year of proposed extraction, and the year of a 25-year flow event.

II. A post-extraction report shall be submitted to the Corps, CHERT, and NMFS by December 1 of each year. Post-extraction reports shall include:

A. A post-extraction survey, which shall be conducted following cessation of extraction and before alteration of the extraction area by flow following fall rains, preferably before October 15. Post-extraction reports shall include the amount and

dimensions of material excavated from each area mined. See Appendix C for post-extraction requirements;

B. Vertical aerial photo coverage of the project reach. Photo coverage shall be taken in the low-flow periods and be at a scale no larger than 1:12000. Photos shall be taken from a fixed or vertical oriented (i.e. belly-mounted) camera. Stereoscopic photo coverage shall be taken in late September or early (first week) October;

C. A longitudinal profile view of the thalweg for the active channel line along the project reach based on the monitoring cross-sections and additional thalweg survey points taken at dominant riffle crests and pool bottoms;

D. The results of required biological monitoring information, as described in Appendix D (attached), are due January 1 of the following year.

REQUIRED MITIGATION:

Each permittee shall mitigate impacts to wetlands and riparian zones in the following manner: avoidance of the impact, minimization of the impact, rectifying the impact, reducing or eliminating the impact over time, and finally compensating for impacts. For all unavoidable impacts, a mitigation plan shall be submitted with applications for all projects that will adversely affect wetlands and riparian vegetation. Mitigation must consider the size and age of the vegetation removed or adversely impacted. All vegetative mitigation must be planted between November 1 and February 28 of the year following excavation and must have an approved survival rate over three growing seasons. Failure to obtain a three-year survival rate shall require replanting. Annual reports depicting the survival of vegetation shall be due by December 31 each year for three growing seasons after planting year.

SITE VISITS:

Site visits will be conducted before and after gravel extraction operations at all locations. Additional site visits can be made upon request by the operator or when otherwise deemed necessary by the Corps, NMFS, CHERT, or other participating agencies. Pre-extraction visits will be done as part of the review and approval process. Post-extraction visits will be as soon as possible following completion of operations **and** prior to site inundation by rising river stages in the fall. To help ensure this occurs in a timely manner, project owners must notify the Corps, NMFS, and CHERT by email, phone, or fax within two business days of project completion. The Corps will provide operational checklist (please see the draft form at Appendix N) to the operator outlining the habitat improvement goals for the specific river reach, and the procedures that occur during the extraction season.

SUBMITTALS:

Project submittals (pre-extraction and post-extraction) should be mailed to the following agency representatives (note that you may also be required to mail submittals to other agencies, such as

Humboldt County, CDFG, CCC, SLC, USFWS, etc.):

U.S. Army Corps of Engineers
Regulatory Branch, Eureka Field Office
P.O. Box 4863, Eureka, California 95502
Attention: Mr. Kelley Reid

National Marine Fisheries Service
Arcata Field Office
1655 Heindon Road
Arcata, CA 95521
Attention: Ms. Irma Lagomarsino

Dr. Douglas Jager, CHERT
349 Stagecoach Road
Trinidad, CA 95570

If you have any questions you can telephone the Corps's Eureka Office at (707) 443-0855 or send an email to: Kelley.Reid@spd02.usace.army.mil.

Work may not proceed until the District Engineer has issued an LOP authorization letter. For projects which have obtained the LOP, the activity may not begin each year until a confirmation letter (Letter of Modification, or MOD) has been issued by the Corps. The Corps will attach the NMFS Incidental Take Statement (ITS) to all LOPs issued under this proceedure to aid in compliance with terms and conditions by the applicants.

It is the applicant's responsibility to insure that the authorized project meets the terms and conditions set forth herein. Failure to abide by them will constitute a violation of the Clean Water Act and/or the Rivers and Harbors Act of 1899.

The Corps is responsible for determining compliance with the LOP 2009. The Corps may take actions to rectify projects that are not in compliance. These actions may include, but are not limited to, the following:

A. Permit revocation.
B. Permit suspension.
C. Project and habitat site restoration.
D. Reduction of authorized gravel extraction amounts per year.

No authorization will be granted under a LOP for any excavation or grading that is for the primary purpose of river engineering, channel or river capture, channel realignment or for a project that is likely to result in the above, unless approved by the Corps. Projects outside the scope of this LOP 2009 will be considered for authorization by individual permit.

This permit shall become effective on the date of the signature of the District Engineer, or his authorized representative, and will automatically expire on **December 31, 2014**, unless the

permit is modified, revoked, or extended before that date. Activities authorized under this permit that have commenced (i.e. are under operation), or are under contract to commence in reliance on this permit, will remain authorized provided the activity is completed within twelve months of the expiration, modification, or revocation of the permit, unless discretionary authority has been exercised by the Corps on a case-by-case basis to modify, suspend, or revoke the authorization. Prior to expiration, a public notice seeking public comment will be reissued within five years from the date of signature of this procedure. The public notice will supply a summary of past actions and may also seek reauthorization of this LOP procedure.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:
FOR THE DISTRICT ENGINEER:

_____
Date

_____
Laurence M. Farrell
Lieutenant Colonel, Corps of Engineers
District Engineer

APPENDIX A
Salmon Habitat Improvement Activities

The actions authorized by this LOP are expected to include certain activities at project areas, during extraction seasons, that will enhance habitat for salmonids and other riverine species. The specific details of such habitat enhancement activities shall be determined during, and follow, the same multiagency pre-extraction design review process that is used for gravel extraction operations. Many of the habitat enhancement activities shall be consistent in scope, size and cost impact as restoration activities that have occurred in the past under LOP-2004. These activities included, but were not limited to, trenching designed to improve salmon migration, alcove construction, placement of edge water large woody debris, and construction of wetland pits to improve aquatic and riparian habitat. Some habitat enhancement activities will be new to this LOP, including, but not limited to, riparian planting and strategic placement of large wood and boulders in the stream.

The biological assessment (BA) under preparation for this procedure is expected to provide a more detailed description of activities and assessment of effects of salmonid habitat enhancement activities (as well as gravel extraction activities). The extent of habitat enhancement activities will be estimated based, in part, on accomplishments under the LOP-2004, the previous version, as well as operational feasibility during the 5 year implementation period of the LOP **2009**. In determining a rough target for enhancement activities, the BA will list and quantify the habitat improvement activities that were accomplished under LOP-2004, and describe additional, reach-specific habitat improvement activities covered under the LOP**2009**. This procedure assumes and authorizes that habitat improvement projects of like kind, nature and quantity would occur in the future. Typical activities include

1. Reduce vehicular access to the gravel bars to limit removal of large woody debris as well as vehicular use in the wetted channel.
2. Fish trench: The Van Duzen River is a perched stream, and periodically the confluence with the Eel is a barrier to fish passage. The operators at the Leland Rock bar and the Hauck Bar frequently coordinate their proposal to construct a fish trench, facilitating salmon migration into the Van Duzen River system. Currently, the trench tends to be fairly straight and temporary since the winter high flows fill in the trench. A design that helps to sustain itself would be preferable.
3. Alcove/wetlands. Especially, at the Guynup Bar, an alcove was designed that would sequester silt and harbor willows.

APPENDIX B
Humboldt County's
CALIFORNIA 2a(ii) Wild and Scenic River
River Descriptions/Agency Responsibility

River	Segments	Mileage	Agency	Designation
Eel	NF-Soldier Basin to Forest Boundary(FB)	15	USFS(SRNF)	Recreational
	NF-FB to confluence w/ Mainstem (includes Round Valley Indian Reservation lands)	16	NPS	Recreational
	MF-Headwaters to FB(Confluence with Black Butte Ck and MF Eel.)	18	USFS(MNF)	Recreational
	Main Stem-(legal description) to southern BLM boundary	13 +/-	NPS	Recreational
	Main Stem-South BLM boundary to confluence w/ Outlet Creek	13	BLM	Recreational
	Main Stem-Confluence of Outlet Creek to Mouth	?	NPS	Recreational
	SF-Headwaters (Section 4 Ck) to Confluence w/ Rattlesnake Ck adjacent to Hwy 101 (Leggett)	17	BLM	Recreational
	SF-Confluence w/ Rattlesnake Ck to Main Stem	50	NPS	Recreational
Van Duzen	Powerline above Little Larabee Ck to confluence with Eel.	?	NPS	Recreational
	Dinsmore bridge to powerline crossing above Little Larabee Ck.	?	NPS	Scenic
Trinity	Mainstem- Lewiston Lake to FB/ confluence with NF Trinity R.	17	BLM	Recreation
	Mainstem – East FB to W. FB (Shasta Trinity NF)	33.2	USFS (STNF)	Recreation
	Mainstem –East FB to W FB (6 Rivers)	15	USFS (SRNF)	Recreation
	Mainstem – FB, Crossing Yurok land to Hoopa Indian land	1	NPS	Scenic
	Mainstem- Hoopa Indian land to confluence w/ Klamath R.	2	NPS	Scenic
	New River –Headwaters to confluence w/ mainstem Trinity R.	21	USFS (STNF)	Recreation
	SF – Hum. Co. line to Todd Ranch in Sec 18, T5N	?	USFS (SRNF)	Wild
	SF- Todd Ranch to confluence w/ mainstem Trinity R.	?	USFS (SRNF)	Scenic
	NF Trinity- Headwaters to Mainstem	15	USFS (STNF)	Recreation

SRNF = Six Rivers Nat. Forest STNF = Shasta Trinity ? = uncertain River Mile
NF= North Fork FB= Forest (USFS) Boundary SF= South Fork MF=Middle Fork

RESERVED: APPENDIX C

CHERT WILL LIKELY REVISE THIS APPENDIX

PHYSICAL MONITORING AND SUBMITTAL PREPARATION GUIDELINES FOR GRAVEL EXTRACTION IN HUMBOLDT COUNTY

Ground surveys and aerial photography provide the primary basis for physical monitoring of extraction areas in Humboldt County. They are also essential for project planning, proposal preparation, field reviews, project modification, and compliance verification. Although technological advancements in recent years have lowered the costs and increased the accuracy of digital terrain modeling (DTM), the more conventional cross section surveys are still in common use by Humboldt County's mining industry. Consequently, the guidelines below focus on conventional cross section surveys. However, use of DTM-based monitoring information is encouraged and should provide much of the same information (e.g., elevations of the water surface, top of silt band, etc.) mentioned below.

Monitoring cross-sections are permanent, monumented cross sections whose purpose is to document yearly and long-term changes in river channel elevation and morphology at extraction sites and adjacent reaches. They also aid in extraction planning, field reviews, and, in some cases, estimation of volumes extracted.

Extraction zone cross-sections are temporary, seasonal cross-sections used for the planning an extraction, for estimation of the actual volume extracted, and for evaluating compliance with approved gravel plans. The extraction zone is the total area that will be extracted and/or graded as a result of gravel extraction activities.

Cross-sections, maps, and associated calculations (such as replenishment and extraction volumes) must be prepared by or under the direction of a State of California Licensed Land Surveyor or an authorized Professional Engineer and certified as to content and accuracy.

The guidelines below were modified from those in the original LOP 96-1. Additionally, the National Marine Fisheries Service (NMFS) shall receive copies of all electronic cross sections.

I. Standards for Monitoring Cross-Sections

A. Number and layout of required cross sections for an extraction project shall follow the guidelines below. Please consult with the County of Humboldt Extraction Review Team (CHERT) for assistance or clarification as needed.

1. A hypothetical center line for the 'frequently scoured' river channel, measured equidistant from both banks and delineating the zone of frequent bedload movement (annual scour and deposition) must first be established to determine the high flow channel direction and the along-channel length of the project reach. This zone is typically devoid of large trees and excludes low floodplains and terraces.
2. If the radius of curvature is less than ten times larger than the average frequently scoured channel width of the project reach, the reach is considered a bend. If the radius of curvature is more than ten times larger than the average actively scoured channel width of the project reach, the reach is considered straight.
3. Cross-sections shall be oriented perpendicular to the center line.
4. Cross-sections shall be no more than 400 feet apart on bends and 500 feet apart in straight reaches. If the length of the project reach is not evenly divisible by 400 or 500 feet, the number of cross-sections should be rounded to the next larger number. Longer distances between cross sections or abandonment and

replacement of cross sections may be allowed on a case-by-case basis.

5. The first cross-section shall extend across the channel at the upstream limit of the project reach (entire project site); the last cross-section shall extend across the channel at the downstream limit of the project reach.

B. Cross-sections must extend completely across the river channel (so as to include all actively scoured channel width) and to terminate on the 100-year floodplain or equivalent surface.

C. Two bench marks (permanent monuments) shall be established for each bar above the watercourse's active banks and in positions such that they will not be eroded away by all but the most destructive flood events. Bench marks shall be tied to a common vertical and horizontal control datum, the 1988 North American Vertical Datum (NAVD88) and to the 1983 North American Datum (NAD), among all extraction sites.

D. Cross-sections shall be tied to a common vertical and horizontal control datum among all extraction sites. This is specified as the 1988 North American Vertical Datum (NAVD) and 1983 North American Datum (NAD) elevation for sea level.

E. Cross-section endpoints and benchmarks shall be clearly monumented and labeled in the field and accurately located on current air photos and maps. A common color of flagging, or environmentally benign painting shall be used to mark cross-sections at all sites.

F. Cross-section endpoints must be placed far enough away from eroding banks that they will not be removed by relatively frequent flows (e.g., by floods smaller than the 10-year event).

G. Cross-sections must be resurveyed from the same endpoints each year New cross-sections may be added as necessary (e.g., major shifts in the river's course) and should be oriented approximately normal to the channel center line.

H. Pre-extraction cross-section surveys need only include those portions of each cross-section inundated by the previous winter's highest flow, but plots must include accurate representations of all ground topography between endpoints and clearly label where older (previous survey) data are used. This is included as a cost saving measure for areas where it is clear no scour or deposition has occurred since the previous survey.

I. If the cross-section becomes inundated by late-season high flows after the pre-extraction survey is completed, the cross-section must be resurveyed (at a minimum, the inundated portions, as described above).

J. All monitoring cross-sections should be surveyed each spring, regardless of whether extraction took place in them in the previous year. If flow conditions make below-water portions of the cross section unsafe to survey, those sections may be completed later in the year as conditions allow, but prior to fall rains.

K. Post-extraction surveys need only be resurveyed through those portions of the cross-section altered by extraction, temporary stockpiles, road construction, or other types of ground disturbance.

L. Stake or spray paint the following points on the ground in each cross-section at time of survey (to facilitate the CHERT relating the cross-section at time of survey to the ground during field review):

1. Water's edge on both sides of river; or if this is not practicable (e.g., steep, unstable slope), stake at 10

feet offset (measured along ground surface) from water's edge. Position of stake to be included in survey.

2. The top of the silt band, if visible.
3. The 35% flow exceedence level, if available.
4. On both sides of river, one hub (2 inch by 2 inch wooden stake), painted brightly and labeled, shall be driven in nearly flush with the ground at the survey point closest to midway between water's edge and cross-section endpoint. Exception: this is not required if it would put the stake in a steep, unstable bank.
5. Stakes should be labeled with cross-section and station number (horizontal distance from left end point).

M. Maximum distance between any two elevational points along a cross-section shall be 50 feet, including wetted portion. Exception: if ground outside wetted channel is essentially level for a distance of 500 feet, distance between points can be increased to 100 feet. All obvious breaks in slope must still be included.

N. Net cross-sectional area change pre-extraction to post-extraction (gravel removal), or post-extraction to next year's pre-extraction (replenishment), as appropriate, should be calculated for each cross-section and presented in tabular form. Measurements and calculations should be included.

O. The survey data for each cross section should be provided to the CHERT on a 3.5" diskette, 'zip' disk, or CD as a digital file in ASCII text format (alphanumeric, tab-delimited). A paper printout of the data should also be supplied. The data should be grouped by cross-section and organized from L bank to R bank, using the format below:

XS 20+78, Smith Bar, Duke Ready Mix Site, Big River			
Point No.	Horizontal Distance	Elevation	Description
1	0	154.9	Ground at LB rebar
2	45.3	149.3	BIS (break in slope)
3	73.3	147.1	Top scarp
4	79.1	142.6	Base scarp
etc.	etc.	etc.	etc.

P. Monitoring cross-sections to be used for planning/designing extractions should be surveyed at least several weeks prior to the desired beginning date of operations to allow sufficient time for the review and approval process. Cross-sections following mining (including any parts of cross sections not surveyed pre-mining due to unsafe flow conditions and parts of cross sections affected by mining operations) are to be surveyed and submitted with the other post-extraction materials as soon as practicable after mining ends, and definitely before winter high flows occur.

II. Standards for Extraction Zone Cross-Sections

A. Number and layout of extraction cross sections for an extraction project to follow the guidelines below:

1. A hypothetical center line for the proposed extraction, located equidistant from both edges of the extraction zone and extending down its long axis must be established.

2. A minimum of 5 equally-spaced extraction cross-sections shall be surveyed in each extraction zone or area.

3. Cross-sections shall be oriented perpendicular to the extraction center line.

B. Extraction cross-sections shall be surveyed prior to extraction, and used to design extraction, calculate extraction volume, and review extraction proposals.

C. Extraction cross-sections shall be resurveyed after extraction is complete. Extraction cross-sections need not be resurveyed in subsequent years.

D. Extraction cross-sections require temporary (seasonal) monuments at each end, such as stakes or rebar, which can be relocated after extraction is complete.

E. Extraction cross-sections should be clearly staked and marked on the ground so that the CHERT can readily locate them in the field.

III. Preparation of Cross-Sections Plots

All Cross-Sections shall be prepared according to the following criteria:

A. Plots should denote the position and elevation (to the nearest 0.1 foot) of the following points:

1. End points and hubs.
2. The top of the silt band adjacent to the low flow channel, if visible.
3. The 35% flow exceedence level, if available.
4. The water's edge at time of survey.
5. Edge of vegetation stands.
6. Any other features useful for field orientation and review.

B. Cross-sections at all sites shall be plotted at the same simple, usable vertical and horizontal scales. All cross-sections must have a vertical exaggeration of 10. Scales to use for cross-sections are as follows:

Cross Section Width	Paper Size	Horizontal Scale
$\leq$ 500 ft.	8 ½" x 11"	1 in. = 100 ft.
500 ft. - 1200 ft.	8 ½" x 14"	1 in. = 100 ft.
$\geq$ 1200 ft. - 1600 ft.	8 ½" x 14" or 11" x 17"	1 in. = 100 ft.
$\geq$ 1600 ft.	8 ½" x 14" or 11" x 17"	1 in. = 100 ft.

C. Cross-sections shall be cut and stacked so that whole cross-sections can be placed on one page. Cross-sections that are cut and stacked must be consistently presented each year.

D. Cross-sections shall be surveyed and drafted consistently so that the right bank (RB) of the river as you face downstream is at the right side of the drafted cross-section. Zero (0) distance in cross-sections shall be at the left (LB) endpoint as you face downstream.

E. Cross sections shall be plotted on gridded paper, where the grid logically corresponds to the scale at which the cross-section is plotted. We suggest a grid of 10 squares to the inch. Grid shall be visible in the reproduced paper copies provided to the CHERT.

F. Cross sections shall have clearly labeled vertical and horizontal axes. Each cross section should have its own horizontal axis to facilitate measurement of distances (rather than a single set of axis labels at bottom of page). Each cross-section should have its origin on a heavy grid line.

G. Any vertical or horizontal datum or endpoint changes should be clearly noted along with the length and direction of change(s) on the cross section plots.

H. All monitoring cross sections shall also include:

1. Where discernible, elevation and position of high-water marks for previous winter's flow (floodmarks); these should be consistently determined among cross-sections.
2. Water-surface elevation and location (both banks) at time of survey.
3. Cross-sections to include the river bottom (especially location of the thalweg) as well as the water surface. Water surface elevation alone is insufficient; the bed must be included.
4. Elevation and location of top of silt band ("bathtub ring") if visible at time of survey.
5. Location of major vegetation breaks, e.g., edge of willows or riparian forest.
6. Water discharge at time of survey (from nearest USGS gage) to be shown in cross-section legend.
7. Floodmarks, top of silt band, water's edge, monuments, CHERT reference stakes should all be clearly labeled in the cross-section and their elevations indicated.
8. For spring cross-section data, all monitoring cross-sections shall include the current year's spring cross-section overlain on the previous year's spring and fall (if any) cross-sections. The area of actual extraction should be lightly shaded or hatched. Water-surface should be shown with a dotted line, and its date clearly indicated.
9. For pre-extraction survey, total volume change since the previous year's post-extraction survey (i.e., replenishment) should be calculated using double end-area or computer generated digital terrain models. All measurements and calculations should be included and verified by a California Licensed Land Surveyor or appropriately authorized engineer.
10. For post extraction cross-section data, all monitoring cross-sections which overlap the extraction area shall include the current year's post extraction cross section data overlain on the current year's pre-extraction cross-section data and the previous year's post extraction cross-section data and the original prescription recommended by the CHERT. The post-extraction cross-section should be shown with a solid line, the pre-extraction with a dashed line. The actual area of extraction should be lightly shaded or hatched.
11. Electronic files with cross section data shall be submitted by December 31, each year. These files should be in ASCII or a compatible format with X-Y coordinates corresponding to the hard-copy plots, where X is the horizontal distance from the left (facing downstream) monument or endpoint and Y is the elevation referenced to NAVD88. Header information shall be included with each cross section file that indicates the date of survey, cross section number, mining site, and river. Other relevant information (e.g., lost/re-established endpoints, etc.) shall also be included. Files shall be submitted in CD-ROM or other common media. A 'Read Me' text file may also be included if explanation of other issues is necessary.

I. All Extraction Cross-Sections shall also include:

1. Spring extraction cross-sections shall include the pre-mining cross-section data overlain onto the proposed mining configuration. The proposed area of extraction should be lightly shaded or hatched. Should changes be required for project approval, extraction cross sections shall be re-submitted with the approved mining configuration replacing the proposed configuration prior to commencement of mining.

2. Post extraction cross-sections shall include the post-mining cross-section data overlain on the previous year's post extraction (if any) and the current year's pre extraction cross-section data and the approved mining configuration. The actual area of extraction should be lightly shaded or hatched.

3. All plotted configurations should be clearly distinguishable from one another and clearly labeled.

4. The net cross-sectional area change pre-extraction to post-extraction should be calculated for each cross-section. Total volume extracted should be computed, using double end area or computer generated digital terrain models. All measurements and calculations should be included in tabular form and verified by a California Licensed Land Surveyor or appropriately authorized engineer.

IV. Preparation of Maps

A. All pre-extraction site maps are to be prepared on a color air photo of good quality from current year (see exception below). Site maps should show the entire project area, the proposed extraction area, and other pertinent features at a scale of approximately 1:6000 (1 in = 500 ft). This may require reduction or enlargement of original air photos.

B. Pre-extraction photos should be taken when the river is low enough to see the channel. Earlier photos may be used for preliminary planning so long as they reasonably reflect current conditions, but a current set is required for final project approval.

C. All monitoring and extraction cross-sections should be accurately located and labeled on the site map. In particular, the end points of each cross-section must be located as close as possible to their true positions.

D. The horizontal limits of both the approved and actual extraction areas (if they are different) should be accurately shown on a site map included with the post-extraction submittal, along with cross section as described above. Only current year air photos shall be used for post-extraction submittals.

APPENDIX D

BIOLOGICAL MONITORING REQUIREMENTS FOR GRAVEL EXTRACTION IN HUMBOLDT COUNTY, CA

The monitoring plan is required as part of the terms and conditions of our biological opinion for LOP 2004-1, and our batched biological opinion for the individual permits for gravel mining activities on the Mad River. Four sources of information make up the plan: 1) monitoring cross sections for all rivers; 2) water surface elevation at the 35% exceedence flow for all rivers, except the Trinity River (the width-to-depth ratio is analyzed at the 35% flow); 3) habitat mapping for all rivers, and 4) a longitudinal profile for the Mad River only. These data shall be collected on an annual basis, unless otherwise noted.

The modified longitudinal profile is only required for the Mad River due to the biological sensitivity and the mining intensity found in the Mad River extraction reach. However, all extraction reaches will be required to collect the cross section information, the 35% exceedence flow water surface elevation, and the habitat mapping data. The exception is the Trinity River where collection of the 35% exceedence data are not required. The longitudinal profile for the Mad River is intended to replace the previously required pool-riffle survey data.

A noticeable trend in physical or habitat conditions of the river, i.e., decreasing pool depth or overall pool volume, may or may not be related to gravel mining operations. However, a trend in physical or habitat conditions informs us of how the baseline river condition is changing through time, and this information can then be used to inform future management decisions.

Physical Monitoring

Objectives

The width-to-depth ratio can be calculated for the channel below the 35% exceedence level utilizing the monitoring cross section data. A trend of decreasing width-to-depth ratio over multiple cross sections would indicate increasing channel confinement and may indicate improving habitat conditions. Conversely, an increasing width-to-depth ratio suggests a tendency toward a wider, shallower channel. Considering the overall incision or aggradation, the trend in topographic variability, and the overall trend in the width-to-depth ratio at the 35% exceedence flow water surface elevation will help define the trend in low flow habitat within the measured reach. The habitat assessment mapping will be used in conjunction with the physical monitoring to help define the trend in habitat conditions during the permit period.

The intent of the longitudinal profile for the Mad River is to provide a means of tracking the topographic variability of the channel through the extraction reach over time and channel aggradation or incision. The habitat mapping, described below, is intended to complement the longitudinal profile monitoring by providing more information than the physical monitoring is able to describe.

Methods

Monitoring Cross Sections: Except for the temporally and spatially isolated sites, the monitoring cross-sections shall be provided to the agencies annually; the temporally and spatially isolated sites shall be reported each second year, and the year of proposed extraction, and the year of a 25-year flow event. Endpoints shall be placed above the 10-year flood plain. Endpoint location should be placed far enough away from banks, so that endpoints are not likely to be lost if there is bank caving. If an applicant is experiencing difficulty in locating endpoints that are likely to stay in place, site-specific endpoint location can be developed during 2005 site reviews with the involved agencies. The benchmarks that the endpoints are tied to shall be located above the 100 year flood level. The current survey point frequency is at least every fifty feet in areas of constant slope. In addition, points should also be surveyed at obvious breaks in slope of more than 1 foot in elevation. Care should be taken to define the channel below the 35% exceedence water surface elevation to the same accuracy, including the wetted channel, making sure to get the lowest point in the cross section and in the thalweg, if they are different.

35% Exceedence Flow Elevation: Careful marking and survey of the water surface elevation near the 35% exceedence flow in each gravel extraction area shall be done each spring when the flow recedes using the attached workbook for data submittal.

Long Profile for the Mad River: The long profile should have survey points capturing every significant break in slope. At a minimum, the density of survey points through features such as pools should include at least four points that represent the head of the pool, the maximum depth and at least two points that define the broad tail of the pool. We anticipate that this will result in a spacing of survey points on the order of 75 to 100 feet. Profiles should extend from the top monitoring cross section to the lowest monitoring cross section for each extraction site. The accuracy of the elevations is expected to be within twice the median substrate size (Lisle 1987).

NMFS' analysis of the physical data will be based on the annual comparison and comparison over the permit period, of the distributions of residual depths, similar to that presented by Madej (1999). In this manner, the distribution, mean and standard deviation of residual depths will be compared.

Data Submittal

Applicants shall use the attached Excel workbooks to submit the physical monitoring data. The Excel workbooks that are attached are specific for each river. Note that the attached workbooks for data submittal are examples, and that users will need to insert their own stationing and data. The attached workbooks for data submittal must be used to record:

- Pre-extraction cross sections
- Post-extraction cross sections
- Monitoring cross sections
- Elevation and location of the 35% exceedence water surface

- High water elevation and location from the previous winter
- Long profile through each gravel bar area on the Mad River

The workbooks for data submittal shall be used exactly as they are so that data can easily be joined among the different gravel bars. Please advise NMFS staff if you want the workbooks for data submittal modified, but do not change them yourself. All operators must use the same data submittal organization.

Biological Monitoring

The biological monitoring component is intended to complement the physical monitoring described above. For each site, habitat data will be collected that describes the distribution and characteristics of three principal habitat types as described by the California Department of Fish and Game (Flosi *et al.* 1998): pools, flatwater, and riffles, with the addition of an alcove habitat. This habitat identification effort will be applied at each site, and extend at a minimum, one half of a meander sequence above and below a given extraction site. At a minimum, for the Mad River, the habitat identification shall be applied to the same length of channel as the modified longitudinal profile. Additionally, a habitat mapping component will be incorporated that delineates more specific micro-habitat features based upon relevant life history stages of concern for each reach.

This effort will be conducted annually, except for the "isolated sites" listed in the 2004 biological opinion for LOP 2004-1. For the isolated sites, the habitat data will be collected the year of extraction and at the conclusion of the permit period. If no extraction occurs at an isolated site, a minimum of one habitat survey will be conducted at the conclusion of the 5-year LOP permit period.

The intent of the habitat monitoring effort is two-fold. The first is to maintain continuity from past habitat mapping efforts and record the distribution and characteristics of habitat units that provide fish habitat value. To this end, the monitoring will be similar to that conducted in the past. The second intent of the monitoring is to provide the means to capture more qualitative biological observations than is possible using the physical monitoring protocols described in the previous section. Habitat units should be recorded on the current aerial photograph for the site(s) and be linked to both the cross section and habitat data forms. At a minimum, the habitat data forms should record the depth and area of individual habitat units, the extent and type of cover available, and any additional observations (e.g. cold water seeps, undercut banks, overhanging vegetation/large woody debris, spawning and holding habitat, coho rearing habitat, etc.) that provide useful information on the value of available habitat. We note that the utility of these more qualitative observations depend heavily on the same person(s) conducting the monitoring from year to year.

In order to minimize observer subjectivity in the habitat mapping process, two approaches are used. First, pools should be defined based on a variety of characteristics that include substrate composition (sand and small gravel), bottom morphology (concave), maximum depth and velocity (<1 fps and smooth surface). The second approach is to coordinate with NMFS staff

during at least the first year of implementation to ensure that habitat units are consistent and meet the intent of the biological monitoring. Should multiple biologists conduct the monitoring, each biologist will coordinate with NMFS staff.

Annual data submissions should include the aerial photographs with the habitat units clearly delineated, summary tables including descriptions of the proportional area of each habitat type, the distribution of habitat measurements (e.g. pool depths) and a narrative describing the habitat conditions in the reach. In addition, the photographs should provide a clear link to the associated cross sections and, in the case of the Mad River, the modified longitudinal profile.

APPENDIX E

USFWS CONDITIONS FOR WESTERN SNOWY PLOVERS
Reserved, pending USFWS Biological Opinion

APPENDIX F
CLASS A GRAVEL EXTRACTION SITES THAT ARE EXPLICITLY INCLUDED IN THE REQUEST FOR CONSULTATION WITH NMFS

The following list includes the active Class A gravel extraction sites that are eligible for authorization under this procedure. Any additional gravel extraction proposals would require consultation with NMFS before inclusion in this appendix and/or authorization.

Lower Eel River App. H	Van Duzen River App. J	HRC Reach Eel R. App G	South Fork Eel R. App I	Trinity River App. K
				And isolated sites
Eureka S&G	*Humboldt Co*	*PALCO*	*Mercer Fraser*	*Mercer Fraser*
Hauck Bar	PL Bar	Vroman	Cooks Valley Mend	McKnight Bar
Singley Bar		Bowlby	Cooks Valley Humb	Willow Ck Bars
		South Fork Bar		
Charlie Hansen	*Tom Bess*	Larabee	*Humboldt County*	*Rowland*
Hansen Bar	East Site	Elinor	County Bar	Rowland
	West Site	Three Mile	Tooby Bar	
Mercer Fraser		Dinner Creek		*Humboldt Co*
Sandy Prairie,Pl A	*Noble*	Truckshop	*Randall*	Cook Bar
Sandy Prairie,Pl B	Noble	Maynard	County Bar	Branstetter Bar
		Scotia	Home/Tooby Bar	~~Charles Bar~~
Mallard Pond	*Leland Rock*		Tooby Park Bar	
Drake Bar	East Site	*Humboldt Co.*		
	West Site	South Fork Bar	*Wallan & Johnson*	
Humboldt County			Wallan & Johnson	
Worswick Bar				
			Satterlee	

			Fort Seward	

Italicized names refer to the responsible party for gravel extraction at the gravel bars listed. Names in the standard font are the names of the gravel bar. Gravel bars that are proposed for authorization under an Individual Permit are marked with a strikethrough (~~for example~~) and are not eligible for authorization under LOP 2009, without initiating consultation with NMFS.

APPENDIX G

Conditions, Limitations and Criteria Specific to Gravel Mining on the HRC Reach of the Eel River

The Middle Mainstem (or Humbold Redwoods Company (HRC)) Reach of the Eel River is constrained by steep canyons and bedrock. This stretch of the river is more confined than within the Lower Eel River. Humboldt Redwood Company is the primary landowner and operator located along this stretch of the river, which runs approximately 25 miles from Scotia to McCann. There are 10 extraction bars within this stretch with documented operations dating back to the 1940s and 1950s.

The bedrock dominated conditions of this stretch keeps the configuration of the river consistent from year to year with little to no variation shown from historic aerial photos, irrespective of the level of extraction. HRC's authorized extraction volumes are small in comparison to the size of the gravel bars and number of unmined bars within the same reach.

Anadromous salmonids typically use this reach as a migratory corridor. In general, spawning is not known to occur in this reach of the Eel River and especially within HRC's 10 permitted extraction sites. The HRC reach could be improved by protecting the large substrate components and creating or improving juvenile rearing habitat, tributary access and connectivity, creation of pool habitat near cold-water tributaries, and adult holding and migratory habitat. The 35% exceedance flow level is used to set the minimum skim floor elevation for extraction operations. Of the extraction techniques described in Appendix L of the LOP most have been used in the past for these 10 locations, and all indications are that the full list will be available, as well as other potential extraction techniques moving into the future.

APPENDIX H

Conditions, Limitations and Criteria Specific to Gravel Mining on the Lower Eel River

The lower Eel River, from the confluence with the Van Duzen River downstream, is important nesting and rearing habitat for western snowy plovers as well as migration and rearing habitat for coho, Chinook and steelhead. The Corps and NMFS believe that this reach of river could be

improved with increases in riparian vegetation, adult migratory habitat, mainstem and off-channel juvenile rearing habitat, and channel confinement. The interagency review team has also observed that road removal and reduced vehicular access would prevent the removal of large woody debris, which is desirable for salmonid habitat. For these reasons, the lower Eel River contains extra conditions to further limit adverse impacts.

1. Impacts to snowy plovers shall be avoided to the maximum extent possible. Appendix E further describes the operating requirements that are required for gravel activities, including pre-extraction planning and surveys. For Worswick, Leland Rock, Hauck, Sandy Prairie, Drakes, and Hansen bars, the Corps will not participate in on-site pre-extraction reviews until after September 15 or after the plover biologist provides the Corps written confirmation that the pre-extraction surveys have been completed in accordance with USFWS Biological Opinion, (No.) dated ___ and Appendix E of the LOP.

2. Alternative extraction techniques shall be preferred over traditional skimming (bar scalping). These alternative techniques may include, but are not limited to horseshoe extractions, wetland pits, trenches and dry-trenches, as described in the Appendix L.

3. In addition to the alternative extraction techniques listed above, narrow skims that are adjacent to the low flow channel but provide for protection of the adjacent cross-over riffle by limiting extraction to the areas away from the entire riffle will also be considered for the lower Eel River on a case-by-case basis. These narrow skims may have a minimum vertical offset of 2 feet above the water surface elevation of the low flow channel. Narrow skim widths will be determined on a site specific basis, but narrow skims must: (1) not increase channel braiding; (2) not lower the elevation at which flows enter secondary channels; (3) avoid the higher portions of the annually inundated bar surface; and (4) must promote channel confinement. The CHERT recommendation shall include a summary of the reasoning, along with sufficient biological, hydrological, and sediment transport rationale to support the recommended width.

APPENDIX I
Conditions, Limitations and Criteria Specific to Gravel Mining on South Fork Eel River

The South Fork reach of the Eel River is typically contained by bedrock and steep canyons. Habitat improvement goals include mainstem and off-channel juvenile rearing habitat, improved salmonid access to tributatires, edgewater habitat, adult holding and migratory habitat, placement of large wood and/or boulders and riparian habitat. The South Fork Eel River provides habitat for Chinook, coho and steelhead, but especially is spawning habitat for Chinook. Alternative extraction techniques shall be preferred over traditional skimming. These alternative techniques may include, but are not limited to horseshoe extractions, wetland pits, trenches and dry-trenches, as described in the Appendix L.

APPENDIX J
Conditions, Limitations and Criteria Specific to

Gravel Mining on the Van Duzen River

The mouth of the Van Duzen River channel is broad and generally shallow. In conjunction with the aggraded conditions, the river may flow subsurface in the late summer and early autumn. The situation has caused stranding and mortality of Chinook salmon in recent years. The Corps' and NMFS' goals include silt sequestration, adult holding and migratory habitat, mainstem and off-channel juvenile rearing habitat, riparian habitat, road removal, encouraging a single-thread channel and more riparian vegetation, and/or encouraging the thalweg adjacent to the existing riparian vegetation. Trenches along the south side of the river, is not preferred since there is a tendency to erode the slope and intrude into blue-goo, an undesirable sediment material. It would be convenient to to have a buffer between the river and the blue goo slide at Noble's Ranch. The Van Duzen River is especially prone to trenching. Extraction proposals in the lower two miles of the Van Duzen River shall be limited to alternative extraction designs, such as trenching, alcoves, horseshoe pits, very narrow skims, etc. In particular, trenching is recommended in some locations in the lower Van Duzen, especially when very close to the wetted channel. For the Leland Rock bar, a point of contact from National Marine Fisheries will be appointed for weekend advice, and will be recorded in the extraction checklist, (see Appendix N).

"Very Narrow Skims" on the lower two miles of the Van Duzen River (from the confluence to River Mile 2) shall be limited to 90 feet total width, as measured across the top of the extraction. This width provides for confinement of typical early season (November/December) peak flows of 1,000 cfs and maintains a depth of one foot within the narrow skim area, which shall also be above the water surface elevation of the 35% exceedence flow, so that impairment of adult passage is reduced.

For Leland Rock bar, the Corps will not participate in on-site pre-extraction reviews until after September 15 or after the applicant or plover biologist provides the Corps written confirmation that the pre-extraction surveys have been completed in accordance with USFWS BO.

Extraction proposals shall include a justification describing how the proposal will prevent increases in the width:depth ratio and not increase the likelihood of salmon stranding.

Appendix K
Conditions, Limitations and Criteria Specific to Gravel Mining on the Trinity River

The Trinity River is typically contained by bedrock and steep canyons until it opens up in the valley of Hoopa, which still has one durable canyon wall. The habitat could be improved by creating more riparian habitat, and placing brushy debris along the otherwise exposed edgewater. The minimum skim floor elevation on the Trinity River shall be a minimum of two feet above the adjacent summer low-flow water surface elevation.

Appendix L
Definitions associated with gravel extraction

Skims

TRADITIONAL SKIM

Skimming or scalping of gravel from exposed gravel bars involves the use of excavating machinery to remove the uppermost layer of gravel. Historically, skimming may have been performed as far down as the water surface. However, to be eligible for authorization under the LOP 2009, skimming shall be performed above the 35% exceedence flow water surface elevation of the low flow channel, and downstream from the Head of bar buffer (described below), and on exposed (dry) bars, within the active channel that is typically inundated annually. After skimming, the bar must be graded in order to be left smooth, free of depressions and with a slope downstream and/or to the low-flow channel. Traditional skims are typically laid out as curvilinear benches along the outside of gravel bars, and are typically no wider than about half the exposed bar surface width.

HORSESHOE SKIM

This method would harvest gravel from the downstream two-thirds of gravel bars. A lateral edge-of water buffer is maintained along the low flow channel. The upper third of the bar will be left in an undisturbed state as an upper bar buffer. The finished grade of the extraction area will have a downstream gradient equal to the river and a flat cross slope and will be no lower than the 35% exceedence flow elevation. Cut-slopes will be left at a 2:1 (horizontal:vertical) slope except along the upstream side at the head-of-bar buffer where a 6:1 slope will be established. There will be at least a 15-foot offset buffer from the bank. The extraction surface shall daylight along the downstream one-third to one-fifth of the bar to facilitate drainage following high runoff events. The horizontal and vertical offsets are intended to remove the excavation area away from the low-flow channel and minimize effects on listed salmonid species by disconnecting the mined surface from frequent flow inundation. Due to less frequent flow inundation, horseshoe-shaped skims may take larger flow events to replenish than traditional skim designs, depending on the unaltered bar height between the excavation and the stream.

INBOARD SKIM

This method is similar to the horseshoe except that it maintains a wider horizontal offset from the low flow channel where warranted. These areas would be excavated to a depth no lower than the water surface elevation offset, with a 0–0.5% cross slope, steeper (1:1) slopes on the sides, and gentle (10:1) slopes at the head of the excavation. The horizontal and vertical offsets are intended to remove the excavation area away from zones of frequent flow inundation. There would be a 15-foot offset buffer from the bank. The excavation may extend into the upper one-third of the head-of-bar buffer if sufficient rationale is provided to show that protection of the upstream riffle would be maintained.

NARROW SKIM

The narrow skims would be no more than one-third of the bar width, follow the shape of the bar feature, maintain the point of maximum height of the bar, and trend in the general direction of

streamflow. These skims would maintain a vertical offset corresponding to the discharge at 35% exceedence level. Finished skims would be free draining and slope either toward the low-flow channel or in a downstream direction. Furthermore, these skims would avoid the head of the bar, defined as the upstream one-third of the exposed bar surface. This buffer may be decreased on a case-by-case basis provided the extraction area narrows, tapering smoothly to a point and remains below the upstream cross-over riffle.

Van Duzen River
Narrow skims along the lower two miles of the Van Duzen River shall be limited to a maximum width of 90 feet across the top of the extraction. This width is designed to contain average peak flows of 1,000 cfs commonly seen during the early period of adult salmonid migration in November and December. The minimum skim floor shall be equal to the water surface elevation of the 35% exceedence flow.

Lower Eel River
Narrow skims that are adjacent to the low flow channel, but are not adjacent to entire riffle areas, will also be considered for the lower Eel River. These narrow skims may have a minimum vertical offset of 2 feet above the water surface elevation of the low flow channel. Narrow skim widths will be determined on a site specific basis, but narrow skims must: (1) not increase channel braiding; (2) not lower the elevation at which flows enter secondary channels; (3) avoid the higher portions of the annually inundated bar surface; and (4) must promote channel confinement.

SECONDARY CHANNEL SKIMS
These extractions are elongate, shallow skims in the area of dry, secondary channels, designed to be free-draining and open at either end so as to not impede fish passage/migration and to prevent any potential fish stranding. The upstream riffle crest, or elevation control of secondary channels shall not be affected by extraction proposals. The skim floor of these excavations shall be set at the 35% exceedence flow elevation. Secondary channel skims, with proper design, have a restorative function, as described in the section below.

Head of Bar Buffer
The upstream end of the bar (head of bar) shall not be mined or otherwise altered by the proposed action. The minimum head of the bar shall be defined as that portion of the bar that extends from at least the upper third of the bar to the upstream end of the bar that is exposed at summer low flow. Therefore, the upstream one-third portion of the bar as exposed at summer low flow is provided as the minimum head of bar buffer. The intent of the head of bar buffer is to provide protection of the natural stream flow steering effect provided by an undisturbed bar.

Variances to the minimum head of bar buffer may be considered on a case-by-case basis (e.g., for narrow skims) if the proposed alternative provides equal or greater protection. The specific nature of the proposed variance must be described, along with sufficient biological, hydrological, and sediment transport rationale to support the recommended alternative. Modifications in the default head-of-bar buffer dimension shall, at a minimum, provide for protection of the adjacent cross-over riffle by limiting extraction to the area downstream of the entire riffle.

Alcove

Alcove extractions are located on the downstream end of gravel bars, where naturally occurring alcoves form and may provide velocity refuge for juvenile salmonids during high flows, and potential thermal refuge for juvenile salmonids during the summer season. Alcove extractions are irregularly shaped to avoid disturbance of riparian vegetation, and are open to the low flow channel on the downstream end to avoid stranding salmonids. Alcoves are extracted to a depth either above or below the water table, and are small in area and volume extracted, relative to other extraction methods.

Exposed Bar

The bar area subject to annual flow inundation and active sediment transport and replenishment cycles, lacking transitional vegetation colonization, grasses and shrubs. Area may contain sparse patches of widely scattered individual woody plants.

Wetland pits

Wetland pits are irregularly shaped excavations (to avoid excavating riparian vegetation) located on the 2-to-5 year floodplain surface. An excavator digs out the sediment below the water table and leaves the sides of the pit sloped. Wetland pits allow for gravel extraction away from frequently inundated gravel bar surfaces, and most salmonid habitat features. Wetland pits will only fill with sediment during high flow events, on the order of every 2-to-5 years, and typically over a multi-year period. Wetland pits must have vegetation, either existing or planted, around their perimeter, and must contain some type of cover elements, such as woody debris.

Trenching

Wet trenching

The wet trenching method of extraction is used to excavate sediment directly from portions of the channel, after the stream flow has been diverted to a secondary channel location. The wet trenching method of extraction would only be used when there is the additional objective of improving instream salmonid habitat by the limited use of sediment removal, and where the diversion of the low flow channel into a secondary channel that provides salmonid habitat is possible.

Dry trenching

The dry trenching method of extraction may be both shallow and stay above the water table, or deep and extend below the water table. The dry trenching method involves gravel bar excavation on the exposed (dry) bar surface. A gravel berm may be constructed with materials on site to isolate the trench from the channel, or the trench may be far enough from the low flow channel to not require a berm to separate it. Material is then excavated from inside the trench to a depth that is limited by the reach of the equipment, and by the annual, site specific recommendations provided by CHERT. After excavation, and when the sediment in the trench has settled, the berm is breached on the downstream end, and the trench is connected to the river to prevent fish stranding. Alternatively, the berm may be constructed to be naturally breached during normal fall flows.

Modifications

Modifications to extraction limitations, when they provide equal or greater protection to listed fish species may be approved with a concurrence from NMFS and CDFG.

Appendix M
INCIDENTAL TAKE STATEMENT
for Federally-listed Threatened Salmonids

Reserved, pending NMFS Biological Opinion

The following ITS is obsolete, having been provided for the LOP 2004-1. The Corps shall initiate consultation and expects a new Biological Opinion and ITS that shall include many similar conditions as this. The new ITS, when final, is not negotiable; however, you may submit comments on the following obsolete ITS to NMFS office, listed below.
The National Marine Fisheries Service (NOAA Fisheries) issued a Biological Opinion for LOP 2009 on August 13, 2004. The Incidental Take Statement is excerpted below. If you are interested in obtaining a complete copy of the Biological Opinion, please contact the Corps's Eureka Field Office.

Take is defined as to harass, harm, pursue, hunt, shoot, kill, trap, capture or collect, or attempt to engage in any such conduct [ESA section 3(18)]. NMFS further defines "harm" as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding or sheltering" (November 8, 1999, 64 FR 60727). Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity. Under the terms of sections 7(b)(4) and 7(o)(2)of the ESA, taking that is incidental to and not the purpose of the agency action is not considered a prohibited taking, provided that such taking is in compliance with the terms and conditions of this ITS.

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

A. Amount or Extent of the Take

NMFS anticipates that annual gravel mining operations under LOP 2009 over the five-year permit term will result in take of SONCC coho salmon, CC Chinook salmon and NC steelhead. This will primarily be in the form of harm to salmonids by impairing essential behavior patterns as a result of reductions in the quality or quantity of their habitat. NMFS anticipates that the number of individuals harmed will be low. NMFS anticipates that a small number of juveniles may be killed, injured, or harassed during heavy equipment use while constructing and removing

temporary stream channel crossings or during instream trenching. In addition, NMFS expects that adults and juveniles may become stranded in trenches and wetland pits. Although, the trenches will be designed to avoid stranding, unexpected river changes may cause stranding of fish with mortality before fish rescue operations commence. While we cannot reliably estimate the number of individuals that may become stranded in a given year, NMFS expects that on the order of five adult and 10 juvenile salmonids (in any combination of the three species) may become stranded in trenches.

The take of the listed salmonids above will be difficult to detect because finding a dead or injured salmonid is unlikely as the species occurs in habitat that makes such detection difficult. The impacts of gravel mining under LOP 2009 will result in changes to the quality and quantity of salmonid habitat. These changes in the quantity and quality of salmonid habitat are expected to correspond to injury to, or reductions in, survival of salmonids by interfering with essential behaviors such as spawning, rearing, feeding, migrating, and sheltering. Because the expected impacts to salmonid habitat correspond with these impaired behavior patterns, NMFS is describing the amount or extent of take anticipated from the proposed action in terms of limitations on habitat impacts. NMFS expects that physical habitat impacts will be: (1) limited to the areas described in Table 1 below, (2) compliant with the project design features of LOP 2009 and this ITS, and (3) within the expected effects of the proposed action as described in this Opinion. Critical project design features in LOP 2009 include limiting extraction to no more than 175,000 cy/yr on the Mad River, implementing a head-of-bar buffer, giving preference to alternative extraction techniques on the South Fork Eel River, Lower Eel River and Mad River, and limiting skim widths to no more than 90 feet as measured across the top of the extraction. We expect more frequent use of alcoves, trenches and narrow skims in these reaches in lieu of traditional skimming. Where skimming does occur in these reaches, it will occur in more confined settings (*e.g.*, the lowermost Mad River as described in this Opinion) or be smaller in extent and be located away from the low-flow channel and not adjacent to spawning habitat.

Table 1. For each river, gravel bar sites are listed from the most upstream site to the most downstream site, and are not necessarily contiguous. The approximate length of each site is measured along the center-line of the stream, adjacent to each bar. Data was provided by Humboldt County Planning Division (April 26, 2000), except for the Cook's Valley site and the Fort Seward site where data was provided by the Corps (June 27, 2000), and the McKnight site, where data was provided by the Corps (June 25, 2001).

Stream	Length (ft)	Gravel Bar Site Name
Middle Eel River	3646	Vroman and Maynard Bars
	4160	Truck Shop and Scotia Bars
	8340	Dinner Creek and Three Mile Bars
	8398	Elinor Bar
	4844	Holmes Bar
	7900	Dyerville, South Fork and Bowlby Bars
Lower Eel River	1117	Hansen Bar
	1754	Upper Sandy Prairie Bar
	3507	Canevari - Sandy Prairie Bar

Stream	Length (ft)	Gravel Bar Site Name
	2160	Lower Sandy Prairie Bar
	3413	Worswick Bar
	2807	Singley Bar (downstream of Fernbridge)
Lower Mad River	2219	Essex Bar
	1000	Miller Almquist Bar (near Hwy 299 bridge)
South Fork Eel R.	809	Cook's Valley (at the Humboldt/Mendocino County line)
	1218	Tooby Park/Garberville
	2097	Randall Sand and Gravel/Tooby Park/Garberville
	1854	Wallen/Johnson Redway Bar (near the town of Redway)
Lower Van Duzen R.	2304	Pacific Lumber Bar (near the town of Carlotta)
	661	Thomas Bess Ranch
	15506	Van Duzen Ranch
	1890	Leland Rock Gravel Bars
Lower Trinity R.	2000	McKnight Bar (near the town of Salyer)
	4497	Big Rock (near the town of Willow Creek)
	834	Klamath River Aggregate (near the town of Hoopa)
North Fork Mattole	4909	Cook Bar (at confluence with mainstem Mattole River)
Upper-Mid Eel	2000	Satterlee Bar near Fort Seward, at approximate river mile 68
Bear River	975	Branstetter Bar

B. Effect of the Take

NMFS determined that the proposed action, as described, is not likely to jeopardize the continued existence of SONCC coho salmon, CC Chinook salmon or NC steelhead.

C. Reasonable and Prudent Measure

NMFS considers that the following reasonable and prudent measure is necessary and appropriate to minimize take of SONCC coho salmon, CC Chinook salmon and NC steelhead.

The Corps shall:

1. Ensure that the monitoring necessary to track changes to salmonid habitat quality and quantity in the vicinity of gravel extraction sites is implemented.

D. Terms and Conditions

The Corps, and its permittees, must comply with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are non-discretionary.

RPM 1. Ensure that the monitoring necessary to track changes to salmonid habitat quality and quantity in the vicinity of gravel extraction sites is implemented.

a. The Corps, the applicants, CHERT and NMFS will develop an extraction reach-specific monitoring plan by December 31, 2004. Final approval of the monitoring plan must be obtained from NMFS prior to implementation.

b. The Corps, NMFS and CHERT shall review cross-section protocols. If necessary, cross-section protocols shall be modified based on input from CHERT, the Corps or NMFS. Proposals for modification will be circulated among these three entities and the permitees for review and comment prior to approval and implementation.

c. Ensure that all required monitoring (cross-sectional, long-profile, and biological monitoring) is completed and that monitoring reports are provided to NMFS each year by January 15. Reports shall be submitted to:

Irma Lagomarsino
Supervisor Arcata Area Office
National Marine Fisheries Service
1655 Heindon Road
Arcata, CA 95521

Appendix N
Example Checklist

Gravel Bar Name:
NMFS POC for weekend operations: _____phone #.
GOALS for the long-term management of the reach (to be added to the checklist during the inter-agency review).

□ 1. Permits Required: date obtained
NC RWQCB
CaDFG
Ca Coastal Comm
USACE (LOP or mod)
SMARA

□ 2. Extraction Method

□ 3. Cut Stakes: In place on monitoring and extraction cross sections at the perimeter of the extraction area. Each stake should be labeled with depth of cut, pre-extraction elevation, cross-section no. and station no.

□ 4. Corps, NMFS and CHERT are provided the 5-day notice that excavation is imminent at extraction area. The agencies are notified that the previous specific extraction area is complete. I.e. Extraction Area A is complete, we're moving on to Area

□ 5. Bridge (if any) location and construction approved.

□ 6. HEC-RAS model completed and provided to NMFS and the Corps or waived by the Corps.

□ 7. Site inspected for grease/oil-spills. If observed, photograph and document the spill, implement the spill-cleanup plan and notify the Corps' and NMFS' points of contact.

□ 8. Equipment parked above the OHWM during maintenance and after-hours.

□ 9. Extraction surface has even, gradual, consistent slope. Free of depressions.

□ 10. Tires and autobody debris, or other large metal debris removed from the gravel bar and disposed/recycled properly.

□ 11. Water surface elevation marked at 35% flow. The identification marks shall be maintained throughout the extraction and post-extraction inspection.

□ 13. Specific terms and conditions of LOP or Modification:

_a)_____

_b)_____

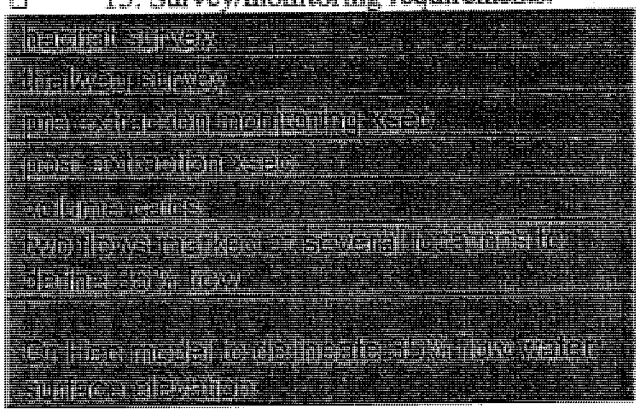
_c)_____

_____

_____

□ 14. Maximum Volume

□ 15. Survey/monitoring requirements: date



□ 16. Time Constraints: actual date

Pre extraction plans to agencies:

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

SEP 1 0 2009 In response refer to: 2009/03274

EXHIBIT NO. 4
APPLICATION NO.
1-09-021-A1
ROCK & DWELLEY
TRANSMITTAL LETTER FOR NOAA FISHERIES BIOLOGICAL OPINION (1 of 2)

Ms. Jane Hicks
Chief, Regulatory Division
U.S. Army Corps of Engineers
San Francisco District
1455 Market Street
San Francisco, California 94103-4573

Dear Ms. Hicks:

This letter transmits NOAA's National Marine Fisheries Service's (NMFS) final biological opinion (Enclosure 1) and Essential Fish Habitat (EFH) consultation (Enclosure 2) pertaining to the U.S. Army Corps of Engineers' (Corps) Letter of Permission procedure (LOP 2009) for instream gravel mining in Humboldt County, California, and the permitting of the Hoopa Valley Tribe (HVT) for instream gravel mining in the Trinity River, California for 5 calendar years (6 mining seasons) beginning in 2009 and expiring on December 31, 2014. This biological opinion considers both the LOP 2009 and the individual permit application from the HVT, and is a "batched" consultation [50 CFR 402.14(c)].

The LOP 2009 portion of the biological opinion is based on NMFS' review of information provided within the Corps' June 3, 2009, request for formal consultation, a biological assessment (BA) for the lower Eel and Van Duzen Rivers dated May 6, 2009, prepared by Alice Berg and Associates; a BA for the South Fork Eel, Trinity, Bear and Mattole Rivers dated May 15, 2009, prepared by Stillwater Sciences; and a BA for the middle Eel River dated June 18, 2009, prepared by Humboldt Redwoods Corporation (HRC 2009). The Corps' authority to permit actions under the LOP are section 404 of the Clean Water Act (CWA), and section 10 of the Rivers and Harbors Act.

The HVT portion of the biological opinion is based on NMFS' review of information provide with the Corps' June 29, 2009, request for formal consultation for the proposed issuance of individual section 404 CWA permit, and a BA dated May 1, 2009, prepared by Alice Berg and Associates.

The biological opinion addresses potential adverse effects on the following listed species Evolutionarily Significant Unit (ESU) or Distinct Population Segment (DPS) and designated critical habitat in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531§ et *seq.*):

Southern Oregon/Northern California Coast (SONCC) coho salmon ESU
(*Oncorhynchus kisutch*)
Threatened (June 28, 2005, 70 FR 37160)
Designated critical habitat (May 5, 1999, 64 FR 24049)

California Coastal (CC) Chinook Salmon ESU
(*O. tsawytscha*)
Threatened (June 28, 2005, 70 FR 37160)
Designated critical habitat (September 2, 2005, 70 FR 52488)

Northern California (NC) steelhead DPS
(*O. mykiss*)
Threatened (January 5, 2006, 71 FR 834)
Designated critical habitat (September 2, 2005, 70 FR 52488)

Based on the best scientific and commercial information available, NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of SONCC coho salmon, CC Chinook salmon, or NC steelhead; and is not likely to result in the destruction or adverse modification of designated critical habitat for SONCC coho salmon, CC Chinook salmon, or NC steelhead. NMFS expects the proposed action will result in incidental take of SONCC coho salmon, CC Chinook salmon, and NC steelhead. An incidental take statement is included with the enclosed biological opinion. The incidental take statement includes non-discretionary reasonable and prudent measures and terms and conditions that are expected to further reduce incidental take of SONCC coho salmon, CC Chinook salmon, or NC steelhead occurring as a result of the proposed action.

The enclosed EFH consultation (Enclosure 2) was prepared pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The proposed action includes areas identified as EFH for coho salmon and Chinook salmon, Pacific Salmon species managed under the Pacific Coast Salmon Fishery Management Plan. Based on our analysis, NMFS concludes that the project would adversely affect EFH for coho salmon and Chinook salmon. However, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH. Therefore, NMFS has no additional Conservation Recommendations.

If you have any questions regarding these consultations, please contact Justin Ly at (707) 825-5154.

Sincerely,

Signature on File

Rodney R. McInnis
Regional Administrator

Copy to File: ARN151422SWR2009AR00488

United States Department of the Interior

FISH AND WILDLIFE SERV
Arcata Fish and Wildlife Of
1655 Heindon Road
Arcata, California, 95521
Phone: (707) 822-7201 FAX: (707) 82

EXHIBIT NO. 5
APPLICATION NO.
1-09-021-A1
ROCK & DWELLEY
EXCERPT FROM USFWS
BIOLOGICAL OPINION (1 of 4)

In Reply Refer To:
8-14-2009-3689
81331-2009-F-0154 LOP-2009

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CALIFORNIA
COASTAL COMMISSION

Ms. Jane M. Hicks
Chief, Regulatory Division
San Francisco District, U.S. Army Corps of Engineers
333 Market Street
San Francisco, CA 94105-2197

Subject: Formal Consultation on the Proposed Gravel Operations in Humboldt County, California: Letter of Permission, Procedure 2009 (Corps File: 2007-00857N)

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed gravel operations in Humboldt County, California, and its effect on the federally threatened Pacific Coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) and its designated critical habitat, in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your June 24, 2009, request for formal consultation was received on June 29, 2009. The U.S. Army Corps of Engineers (Corps) has determined that proposed gravel extraction on the Eel River may affect, but is not likely to adversely affect the Pacific Coast population of the western snowy plover, and its designated critical habitat on the lower Eel River, Humboldt County, California (Winzler and Kelly 2009).

This biological opinion (BO) is based on information provided in the February 19, 2009, Public Notice for Gravel Mining Activities within Humboldt County, the associated Biological Assessment provided by the consulting firm of Winzler and Kelly (Winzler and Kelly 2009), your letter requesting consultation, and other sources of information. A file of this consultation is available at the Arcata Fish and Wildlife Office, located at the letterhead address.

Consultation History

Gravel extraction has occurred within the Eel River basin for decades, and has been regulated under a variety of programs, including the Section 404 permit process of the Clean Water Act, and the Rivers and Harbors Act, both administered by the Corps. The Corps is the lead Federal action agency for purposes of fulfilling Section 7 obligations under the Act. The federally listed Pacific Coast population of the western snowy plover (hereafter plover) has been known to use the project area since the early 1990s (J. Sterling in Harris, 1991). Subsequent to plovers being documented on selected gravel bars within the Eel River watershed in 1996 (Tuttle, et al. 1997),

the Corps received technical assistance from the Service regarding it's actions relative to the effects of gravel extraction on plovers.

The Corps initiated a request for formal Section 7 consultation in April 2004, for gravel extraction on the lower Eel River for activities under Letter of Permission (LOP) 2004-1, and an individual permit for Eureka Ready Mix. The Service issued its non-jeopardy BO for the batched requested permits on September 6, 2005 (BO 8-14-2005-2730).

Subsequent to the issuance of its September 6, 2005, BO, the Service designated critical habitat for the plover on the lower Eel River, within the project area, on September 29, 2005 (70 FR 56970).

BIOLOGICAL OPINION

1.0 DESCRIPTION OF THE PROPOSED ACTION

1.1 Project Description

We incorporate the proposed action here by reference, as it is stated in Notice 284270. The proposed project (LOP 2009) is a modification of the previous LOP 2004-1 procedure and, as it relates to the plover, is consistent with earlier mining operations authorized under LOP 2004-1, and its extensions. The LOP 2009 would be valid through December 31, 2014. The purpose of the LOP is to standardize the reporting procedure and streamline the Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act authorizations for discharge of dredged and fill materials associated with gravel mining on the unvegetated gravel bars of the rivers and streams of Humboldt County. Gravel may be extracted by the following excavation techniques: horseshoe skim, narrow skim, inboard skim, traditional skim, wet floodplain pit, dry floodplain pit, oxbows, alcoves, secondary channel skims, migration channel excavation, and high terrace skim (Winzler and Kelly 2009). Each technique is described in the biological assessment (Winzler and Kelly 2009).

1.1.1 Project Elements

The following measures, as stated in Appendix E of the LOP, will be implemented during extraction each year to minimize potential impacts to the western snowy plover:

1. Operators shall make an attempt to initiate all extraction related activities after September 15 each year to avoid direct effects to plovers.

2. All pre-extraction activities within plover habitat that occur between March 1 and August 22 require a Service-approved surveyor to minimize potential harm to plovers. To be effective, plover surveyors must have the authority to direct the activities of workers to avoid nests and other plover life stages, and require that activity be rescheduled until technical assistance from the Service is received regarding avoidance or minimization measures. Vehicle use within plover habitat should be restricted to those occasions where the activity cannot be completed otherwise.

3. Initiate extraction activities within plover habitat after July 22. If a plover nest is present within 1,000 feet of a planned extraction site, extraction activities would not commence until the nest had hatched or the fate of the nest has otherwise been determined and the Service has provided its approval. Service approval (verbal or

written) will be provided when the Service has concurred with the nest fate determination and the Service has completed a query to determine if: 1) take occurred, 2) take was attributed to the Federal action, and 3) the take was authorized (i.e. incidental).

4. Between July 22 and September 15, initiate extraction activities within plover habitat after three consecutive days of surveys have determined that no plovers (adults or chicks) or nests are within 1,000 feet of the proposed extraction site. The three consecutive days of surveys must be completed by a Service approved surveyor, would not begin before July 20, and would occur only on days of acceptable weather conditions. The surveys must be conducted during a period when plover and nest detections are at their best, i.e. generally mornings, not during period of low light, high winds, or when heat waves distort observations.

5. Between July 21 and September 15, survey areas in the vicinity of the targeted extraction site for plovers and nests to determine the likelihood of chicks, juveniles, and adults moving into areas where they could be affected by operations (i.e. within 1,000 feet). "Vicinity" refers to all suitable plover habitat contiguous with the gravel extraction site. Because gravel bars and the riverine system on the Eel River are dynamic, the Service would provide technical assistance regarding annual determinations of what constitutes contiguous habitat.

6. Between July 21 and September 15, operators of extraction sites that have nests or plovers within 1,000 feet, or in the vicinity, shall complete the following: a) daily plover surveys by a Service approved surveyor to determine the status of plovers and nests within the extractions site vicinity; b) if plovers are within 1,000 feet of the extraction site, operations may not commence until the plovers move to a distance greater than 1,000 feet away (hazing is not authorized); c) operators must ensure that extraction activities do not occur when plovers or nests are within 1,000 feet of the extraction site; and d) all extraction onsite personnel shall receive training regarding the identification of adult and immature plovers, their behaviors, and the ramifications [of not complying] to the conditions of the LOP and the Terms and Conditions in this BO. Training shall be provided by a Service approved biologist.

7. Between July 21 and September 15, prohibit night driving (0.5 hour after sunset to 0.5 hour before sunrise) for extraction-related activities within suitable plover habitat. Authorized daytime driving shall be minimized to those trips essential to complete authorized work. Car-pooling is encouraged. Parking, staging, and maintenance of vehicles and equipment shall occur at least 1,000 feet away from suitable habitat. Vehicle speeds in suitable plover habitat should not exceed 10 miles per hour (mph), unless on an established access/haul road where speeds shall not exceed 30 mph. The first three vehicle trips on haul/haul roads in suitable habitat each day, shall not exceed 10 mph.

Measures agreed upon and added to the LOP that were not part of LOP-2004 (Winzler and Kelly 2009):

8. Access roads owned, controlled, or utilized by commercial gravel operators shall be gated and locked when no active extraction and hauling is occurring (including at night). This will help prevent recreational vehicles from impacting plovers on gravel bars. Vehicle access to the Worswick bar from Fernbridge Drive will be closed starting March

15 and re-opened on September 15 (or earlier, if monitoring data confirm that all chicks have fledged).

9. For Worswick, Leland Rock, Hauck, Sandy Prairie, Drakes, Singley and Hansen bars, the Corps will not participate in on-site pre-extraction reviews until after September 15 or after the plover biologist provides the Corps written or verbal confirmation that the pre-extraction surveys have been completed in accordance with the Service's biological opinion (8-14-2005-2730) dated August 14, 2005, and Appendix E of the LOP.

10. Plover survey annual reports, if conducted for Worswick, Leland Rock, Hauck, Sandy Prairie, Drakes, Singley and Hansen bars documenting pre-extraction site plover surveys, shall be submitted to the Arcata Fish and Wildlife Office by October 15, following each plover breeding season.

1.1.2 Implementation Schedule

The proposal is for extraction seasons for the years 2009 through 2014. This BO covers extraction years for the life of LOP-2009.

1.1.3 Conservation Measures

When used in the context of the Act, "conservation measures" represent actions pledged in the project description that the action agency will implement to further the recovery of the species under review. The Corps is proposing to include the conservation measures listed above as part of the proposed action.

1.2 Action Area

The action area is defined at 50 CFR 402.02 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action". For the purposes of this consultation, the Service recognizes the action area to include the Lower Eel River, downstream of the Van Duzen River and including the following gravel bars: Leland Rock (upstream on the Van Duzen River to river mile 1.7), Hauck Bar (Eureka Sand and Gravel, operator), Hansen Bar, Sandy Prairie (Mercer, Fraser Company, operator), Canevari Site (Mercer, Fraser Company, operator), Drake Bar (Drake Materials, operator), Worswick (County of Humboldt, operator), and Singley Bar (Arcata Sand and Gravel, operator). This analysis area enables the Corps and the Service to fully understand the cumulative, interrelated, and interdependent effects of the action within an appropriate landscape context.

1.3 Time-frame of Biological Opinion

This BO is valid through the life of LOP-2009, which will expire December 31, 2014.

2.0 STATUS OF THE SPECIES: Western Snowy Plover

2.1 Legal Status

The Pacific coast population of the western snowy plover was Federally listed as threatened on March 5, 1993 (U.S. Fish and Wildlife Service 1993). In August 2002, we received a petition from the Surf Ocean Beach Commission of Lompoc to delist the Pacific Coast western snowy plover population. The City of Morro Bay submitted substantially the same petition dated May 30, 2003. On March 22, 2004, we published a notice that the petition presented substantial information to indicate that delisting may be warranted (U.S. Fish and Wildlife Service 2004a). We issued a 12-month finding on April 21, 2006, reaffirming the plover's listed status as a

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EXHIBIT NO. **6**
APPLICATION NO.
1-09-006-A1
EUREKA READY MIX
STAFF REPORT NO. CDP 1-09-021 (1 of 67)

W 25c

Filed: July 28, 2009
49th Day: September 15, 2009
180th Day: January 23, 2010
Staff: Melissa B. Kraemer
Staff Report: August 20, 2009
Hearing Date: September 9, 2009
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-09-021**

APPLICANT: **Leland Rock & Charles Dwelley**

AGENT: Keith Hess

PROJECT LOCATION: Along the north side of the lower Van Duzen River from its confluence with the Eel River up to river mile 0.7, west of the Highway 101 bridge, in Humboldt County (APNs 201-261-09 & 205-121-01).

PROJECT DESCRIPTION: Continued seasonal extraction of up to 100,000 cubic yards of river run aggregate (sand and gravel) per year for a period of five years from the dry river channel and stockpiling of gravel up to 30 feet high within a 220-foot-wide by 535-foot-long upland area.

LOCAL PLAN DESIGNATION: Agriculture Exclusive (AE) as designated by the Eel River Area Plan

LOCAL ZONING DESIGNATION: (1) Agriculture Exclusive, 60-acre minimum parcel size with archaeological, flood hazard, coastal streams and riparian protection, and transitional agricultural lands combining zones (AE-60/A,F,R,T), (2) Natural Resources with coastal streams and riparian protection combining zone (NR/R), and (3) Undesignated (U).

APPROVALS RECEIVED: (1) Humboldt County Conditional Use Permit No. 24-94; (2) Humboldt County Reclamation Plan Approval No. RP-05-94; (3) North Coast Regional Water Quality Control Board Section 401 Water Quality Certification WDID No. 1B02129WNHU (dated June 21, 2005; expires June 21, 2010); and (4) State Lands Commission General Lease No. P7989.1 for seasonal bridge crossing in 2009.

OTHER APPROVALS NEEDED:

1. U.S. Army Corps of Engineers Section 404 Clean Water Act Letter of Permission (LOP-2009);
2. California Department of Fish & Game Section 1600 Streambed Alteration Agreement;
3. North Coast Regional Water Quality Control Board Section 401 Water Quality Certification (for 2010-2013 gravel extraction seasons);
4. State Lands Commission General Lease (for 2010-2013 seasonal crossing installations); and
5. County of Humboldt Extraction Review Team (CHERT) approval.

SUBSTANTIVE FILE DOCUMENTS:

1. Final Program Environmental Impact Report (EIR) on Gravel Removal from the Lower Eel River, adopted 1992, and Supplemental EIR, certified July 24, 1992;
2. *Interim Monitoring Program and Adaptive Management Practices for Gravel Removal from the Lower Eel and Van Duzen Rivers (IMP)*, July 2, 1996;
3. *Biological Assessment for the U.S. Army Corps of Engineers LOP-2009 Aggregate Extraction Operations Lower Eel River and Van Duzen River, Humboldt County, California*, prepared by Alice Berg & Associates, Clio, CA, May 6, 2009;
4. *Lower Eel River Gravel Mining and Extraction Activities Biological Assessment (Western Snowy Plover)*, prepared by Winzler & Kelly, Eureka, CA, March 9, 2009;
5. NOAA-Fisheries Formal Consultation/ Final Biological Opinion for LOP-2009;
6. U.S. Fish & Wildlife Service Formal Consultation/Final Biological Opinion for LOP-2009;
7. *Analysis of Eel River Cross Sections at Gravel Mining Sites, 1997-2007*, prepared by County of Humboldt Extraction Review Team (CHERT), January 2009;
8. Humboldt County certified Local Coastal Program.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval with special conditions of the proposed gravel extraction project.

The project site is located along the north side of the lower Van Duzen River near its junction with the Eel River, immediately west of the Highway 101 bridge near the community of Alton (Exhibit Nos. 1 and 2). The applicant proposes to extract a maximum of 100,000 cubic yards of sand and gravel per year for a period of five years. In addition, the applicant proposes to continue to stockpile gravel in adjacent upland areas on the north side of the river adjacent to a Caltrans right-of-way. The applicant also proposes to place seasonal railroad flatbed crossings across low flow channels as needed to facilitate gravel transport and to reclaim extraction areas. Although the total project area is approximately 161 acres in size, in any given year approximately 34 acres would be disturbed and then reclaimed.

The proposed gravel extraction would occur in two areas extending across the mouth of the river to the northern property line. The gravel extraction area consists of a large gravel bar formed by the action of both the Van Duzen and Eel Rivers. The bar is largely exposed during low flow conditions during the dry season and largely submerged during high flow conditions in the winter. The project area excludes a dense riparian forest area located closer to Highway 101.

The applicant has implemented a salmonid migration barrier modification project (fish channel) at the confluence of the Van Duzen and Eel Rivers annually since 2001, as well as installation of large woody debris (LWD), alcoves, and off-channel trenching. This work has been implemented as part of a collaborative effort between the applicant and Eureka Ready Mix (Hauck Bar) under the guidance of the Department of Fish and Game (DFG) and the National Marine Fisheries Service (NOAA-Fisheries). The applicant again proposes to excavate the fish channel under the current application, in cooperation with Eureka Ready Mix, DFG, and NOAA-Fisheries. Narrow skims may also be utilized, but would be limited to a maximum width of 90 feet.

The proposed annual extraction amount of 100,000 cubic yards is proposed as an upper limit, is consistent with the PEIR for the lower Eel River, and is based upon evaluation of additional information as well as the data collected under the Humboldt County PEIR and Interim Management Programs. This project has been described to permit adaptive management of the project area. In any given year, project extraction volumes, locations, and methods would be submitted by the project consultants for approval by local, state, and federal agencies, including the County of Humboldt, Department of Fish and Game, and the Army Corps of Engineers. See Appendix B for a description of extraction methods.

The applicant has previously undertaken gravel extraction in the proposed area under permits approved by the Commission for five calendar-year periods (CDP No. 1-96-068 for the 1997 through 2001 gravel extraction seasons and CDP No. 1-04-045 for the 2005 through 2008 gravel extraction seasons). Additionally, one-year extraction operations were approved under CDP Nos. 1-02-006 and 1-03-048.

The gravel extraction areas on the bar would be visible from Highway 101. However, these operations are seasonal activities that would occur for only approximately three months each year. In addition, many of the various gravel extraction operations occurring along the lower Eel and Van Duzen Rivers are similarly visible from Highway 101 and other public roads. The

proposed project would not be any more prominent that the gravel extraction and processing activities that have occurred in the past.

The lower Eel and lower Van Duzen Rivers have been used for gravel extraction since 1911. Currently, approximately six gravel operations are located along a 9-mile stretch of the lower Eel River, and three additional operations are located on the lower reaches of the Van Duzen River, which flows into the Eel River at Alton (Exhibit No. 3). All of the operations along the Eel River and the portion of the lowest-most operation on the Van Duzen River west of the Van Duzen River Bridge are within the coastal zone. All of the gravel operations on the lower Eel and lower Van Duzen Rivers are interrelated in the sense that all of the gravel bars derive their material from the same upstream sediment sources. Brown and Ritter (1972) determined that the Eel River was a "hydraulically-limited" rather than "sediment-limited" river. This means that replenishment is more a factor of the size and duration of winter flows than the production of sediment in the watershed. This determination was based on the calculated high amounts of sediment that currently exist in active land sliding occurring in the watershed.

Humboldt County developed a strategy for controlling the cumulative impacts of the gravel operations on riverbed degradation and bank erosion. At the heart of the strategy is an annual administrative approval of extraction plans that specifies the particular method and location of extraction. The "CHERT" (County of Humboldt Extraction Review Team), which is composed of independent fluvial geomorphologists, hydrologists, biologists, and botanists, has the authority for the County to review all annual mining plans and prescribe changes to those plans as deemed necessary. CHERT integrates all the monitoring data developed by the gravel operators for geomorphic evaluations of the streambed and also evaluates and recommends practices designed to preserve and enhance vegetation and wildlife habitat.

In January of 2009, CHERT released a 10-year analysis (Exhibit A) of river channel cross sections taken at various sites along the Eel and Van Duzen Rivers near mining sites (including the lower, middle, and South Fork reaches of the Eel River and the lower Van Duzen River). The report represents the longest-term geomorphic analysis completed to date examining the potential effects of gravel mining operations on river channel morphology. The report finds that "While certain methods of mining and locally excessive volumes can affect instream habitat in the short term, the river does not appear to suffer from long term or broad scale channel bed degradation from gravel mining. Furthermore, the CHERT adaptive management program authorized by the IMP specifically addresses preventing local over-extraction and avoids/minimizes mining methods that cause aquatic and riparian habitat damage" (page 2). The report concludes that "...we did not discern any large scale, persistent effects of Eel River gravel mining on channel thalweg elevations, mean bed elevations, or scour...Gravel mining effects in the Eel River are probably limited to short term, localized effects which the adaptive management program and federal and state oversight attempt to avoid or minimize. Refinement of project-scale minimization measures will continue to be a fundamental component of the adaptive management process, as will instream habitat improvement projects associated with gravel extraction operations" (page 24).

In an effort to streamline the processing of Clean Water Act permits for the numerous in-stream gravel operations within Humboldt County, the U.S. Army Corps of Engineers adopts a Letter of Permission (LOP) procedure for authorizing such projects. An applicant for a project covered by the LOP must submit yearly gravel plans and monitoring information to the Corps for approval under the procedure. The Corps incorporates the County's CHERT review process into its LOP procedure.

As with all "federal actions" that might adversely impact rare, threatened, and endangered fish and wildlife, the LOP process and the Corps' review of individual Section 404 permits is also subject to consultations with applicable natural resource trustee agencies as required under Section 7 of the Federal Endangered Species Act (FESA). The exposed cobble in the gravel bars adjacent to the low-flow channels provides roosting and/or nesting habitats for the federally listed (threatened) western snowy plover (*Charadrius alexandrinus nivosus*). Additionally, the Eel River and its tributaries support three federally threatened fish species: Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), and steelhead trout (*Oncorhynchus mykiss*). The lower Eel and lower Van Duzen Rivers, including the project area, are mainly utilized by the anadromous fish as a migration route to and from the upstream spawning grounds. In addition, the lower Eel and Van Duzen Rivers support summer rearing habitat for juvenile salmonids, especially steelhead yearlings and fall Chinook sub-yearlings, and holding areas for adult summer steelhead as well as spawning and nursery habitat for marine fishes and invertebrates. The formal consultations conducted by NOAA-Fisheries and the FWS provide critical evidence for the Commission's review of the proposed gravel mining operations on the lower Eel and Van Duzen Rivers that the operations will not result in significant adverse impacts on threatened and endangered species.

On July 27, 2009, NOAA-Fisheries transmitted its preliminary conclusions and draft terms and conditions to minimize the amount or extent of "take" of threatened salmonids (Exhibit D). The final Biological Opinion for LOP-2009 for proposed gravel extraction operations on the Eel and Van Duzen Rivers is anticipated to be issued in late August. The preliminary conclusion states that the gravel mining proposed under LOP-2009 for the five-year permit period is not likely to jeopardize the continued existence of threatened salmonids and is not likely to adversely modify or destroy designated salmonid critical habitat. The preliminary conclusion of NOAA-Fisheries notes that the measures instituted in 2004 have worked well, and the agency does not anticipate any significant changes the requirements and recommendations to the Corps that will be included in the final Biological Opinion for LOP-2009. Additionally, the FWS has informed staff that it does not anticipate that its recommended conditions for western snowy plover will be significantly different than those included in the 2005 Biological Opinion (see Exhibit F). The FWS preliminarily concludes that the proposed gravel operations will not jeopardize the continued existence of the plover or adversely modify or destroy its designated critical habitat. The FWS final Biological Opinion is expected to be issued by late August 2009. Staff recommends Special Condition No. 14 to require the applicant to submit, prior to permit issuance, final Biological Opinions in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit.

Staff believes that with the recommended conditions described below the proposed gravel extraction operation is consistent with the requirements of Section 30233 of the Coastal Act, in that feasible mitigation measures have been provided to minimize adverse environmental effects. The gravel extraction limitations and performance standards imposed through Special Condition Nos. 1, 2, 3, and 5 are designed to prevent impacts to river morphology, riparian vegetation, threatened and endangered species, and water quality. Together with the requirements of Special Condition Nos. 6 and 7 to prohibit placement of material into the active channel and limit the extraction season, the project is conditioned to ensure that significant adverse impacts to the river from the proposed gravel extraction operation will be avoided. Therefore, staff believes that the proposed project as conditioned is consistent with the requirements of Sections 30231, 30233, and 30240 of the Coastal Act, as well as all other applicable policies of the Coastal Act.

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

STAFF NOTES

1. Exhibits A through F are Common to Agenda Items W-25b and W-25c

Exhibits A through F are common to agenda items W-25b (CDP Application No. 1-09-014, Humboldt County Public Works Department) and W-25c (CDP Application No. 1-09-021, Rock & Dwelley). A single combined exhibit packet has been prepared for the two applications and is included under separate attachment.

2. Jurisdiction & Standard of Review

The project site is located in the Commission's retained permit jurisdiction. The County of Humboldt has a certified Local Coastal Program (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. 1-09-021 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 with Conditions:

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. Extraction Limitations

Extraction of material shall be subject to the following limitations:

(A) Consistent with the proposed project description, the permittee shall extract no more than 100,000 cubic yards of gravel annually from the project site;

(B) The permittee shall only extract material by traditional skims, horseshoe skims, inboard skims, very narrow skims, alcove extractions, wetland pits, wet trenches for salmonid habitat improvement purposes only, and/or dry-trenches in the manner described Appendix B and in the U.S. Army Corps of Engineers Letter of Permission Procedure 2009 (LOP-2009) Public Notice dated February 19, 2009 (No. 2007-00857). If wet trenching methods for salmonid habitat improvements are used, the trenching within the wet channel shall be limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat. If dry trenching methods are used, a barrier such as silt fencing, or a gravel berm shall be constructed and maintained during trenching along the entire length of the excavated area to prevent turbid water from entering the flowing river. After completion of gravel extraction operations, the permittee shall remove the berm in several locations to prevent the creation of fish traps;

(C) Excavation shall not occur in the active channel (area where water is flowing unimpeded through the river channel);

(D) Extraction quantities shall not exceed (1) the proposed cubic yards per year of gravel extraction, (2) any specific allocation limit required by the Army Corps of Engineers, and

(3) the long-term average sustained yield based on estimates of mean annual recruitment, as utilized by CHERT;

(E) Gravel extraction operations shall not disturb or remove any of the riparian vegetation on the river banks;

(F) Gravel extraction operations shall not disturb or remove any of the riparian vegetation on the gravel bar that is either: (1) part of contiguous riparian vegetation complex 1/16-acre or larger, or (2) one-inch-in-diameter at breast height (DBH) or greater;

(G) Horseshoe extractions shall occur on the part of the gravel bar that is downstream from the widest point of the bar and must be set back from the low flow channel with vertical offsets;

(H) Dry trench extractions shall be (1) limited to excavation on an exposed dry gravel bar; (2) either shallow and stay above the water table, or deep and extend below the water table, and (3) breached on the downstream end and connected to the river to prevent fish stranding after excavation when the sediment in the trench has settled;

(I) Alcove extractions shall be (1) located on the downstream end of gravel bars where naturally occurring alcoves form and provide refuge for salmonids; (2) regularly shaped or irregularly shaped to avoid riparian vegetation; (3) open to the low flow channel on the downstream end to prevent fish stranding; and (4) extracted to a depth either above or below the water table;

(J) Any bar-skimming extractions that are consistent with subsection (B) above that are proposed adjacent to the low flow channel shall have a minimum skim floor elevation at the elevation of the 35% exceedence flow;

(K) The upstream end of the bar (head) shall not be mined or otherwise altered by gravel extraction operations. The minimum head of the bar shall be defined as that portion of the bar that extends from at least the upper third of the bar to the upstream end of the bar that is exposed at summer low flow; and

(L) The location of wetland pits shall be above the two-year flood frequency elevation.

2. Seasonal Crossings

Any proposed crossing of the low flow channel or secondary channels that could be expected to maintain flow year-round shall be subject to the following criteria:

(A) The crossing shall be of the railroad flatcar or bridge variety placed in a manner so as to span the channel with a minimum clearance of three (3) feet above the water surface;

(B) Stream channel crossing locations shall be determined on a site-specific basis. Special consideration shall be given to the proposed placement of the channel crossings at riffles and based on findings from CHERT that the location will minimize adverse effects to salmonids;

(C) No portion of the abutments or bridge supports shall extend into the wetted channel except in shallow flat-water areas;

(D) The presence of heavy equipment in the wetted low-flow channel shall be minimized by limiting the number of heavy equipment crossings during each crossing installation or removal. A maximum of two crossings per installation and two crossings per removal is allowed, although one crossing is preferred. Heavy equipment shall not be used in the wetted low-flow channel except for channel crossing installation and removal;

(E) Channel crossings shall only be placed after June 30 of each year; and

(F) Channel crossing removal shall be completed by October 15 of each year or by the extended date approved by the Executive Director pursuant to Special Condition No. 5.

3. **Annual Gravel Extraction Plan**

(A) **PRIOR TO THE START OF EACH YEAR'S GRAVEL EXTRACTION OPERATIONS**, the applicant shall submit, for the review and written approval of the Executive Director, a final gravel extraction plan for that gravel extraction season consistent with the terms and conditions of this permit and that contains the following:

1. A gravel extraction plan of the annual gravel extraction operation containing cross-sections, maps, and associated calculations that accurately depict the proposed extraction area, demonstrates that the proposed extraction will be consistent with the extraction standards and limitations specified in Special Condition Nos. 1, 2, 4, 5, 6, and 7 and is prepared in conformance with the requirements of the U.S. Army Corps of Engineers Letter of Permission Procedure 2009 (LOP-2009) Public Notice dated February 19, 2009 (No. 2007-00857);

2. A pre-extraction vertical rather than oblique aerial photo of the site taken during the spring of the year of mining at a scale of 1:6000 and upon which the proposed extraction activities have been diagrammed;

3. A botanical survey prepared by a qualified biologist with experience in riparian and wetland vegetation mapping, for the review and approval of the Executive Director, that maps all vegetation found in potential extraction areas of the site and highlights the location and extent of all vegetated areas containing woody riparian vegetation that is either (i) part of a contiguous riparian vegetation complex 1/16-of-an-acre or larger or (ii) one-inch-in-diameter at breast height (DBH) or greater. If the areas proposed for extraction are devoid of vegetation, the applicant may substitute the submittal of photographs (including aerial) that are sufficient in the opinion of the Executive Director to demonstrate that no vegetation exists in the proposed extraction areas in lieu of the botanical survey;

4. A copy of the gravel extraction plan recommended by the County of Humboldt Extraction Review Team (CHERT) for the subject year, unless review by CHERT is not required by the County, and evidence that the final gravel extraction plan is consistent with the recommendations of CHERT as well as consistent with all standard and special conditions of this permit;

5. A post-extraction survey of the prior year's mining activities (if any) conducted following cessation of extraction and before alteration of the extraction area by flow following fall rains, that includes the amount and dimension of material excavated from each area mined and is prepared in conformance with the requirements of the U.S. Army Corps of Engineers Letter of Permission Procedure 2009 (LOP-2009) Public Notice dated February 19, 2009 (No. 2007-00857);

6. The results of biological monitoring report data required by the U.S. Army Corps of Engineers Letter of Permission Procedure 2009 (LOP-2009) Public Notice dated February 19, 2009 (No. 2007-00857);

7. Pre-extraction snowy plover surveys that have been completed in accordance with Special Condition No. 4 and U.S. Fish and Wildlife Service Biological Opinion for the LOP-2009 for any development at the project site proposed to occur prior to September 15;

8. A plan for run-off control to avoid significant adverse impacts on coastal resources. The runoff control plan shall include, at a minimum, the following components;

   (a) The plan shall demonstrate that:

      (1) Run-off from the gravel mining extraction and stockpiling sites shall not increase sedimentation in coastal waters;

      (2) Run-off from the gravel mining extraction and stockpiling sites shall not result in pollutants entering coastal waters;

      (3) Best Management Practices (BMPs) shall be used to prevent entry of polluted stormwater runoff into coastal waters during the transportation and storage of excavated materials, including but not limited to:

      (4) A suite of the following temporary erosion and runoff control measures, as described in detail within in the "California Storm Water Best Management Commercial-Industrial and Construction Activity Handbooks, developed by Camp, Dresser & McKee, et al. for the Storm Water Quality Task Force, shall be used during mining: Spill Prevention and Control (CA12), Vehicle and Equipment Fueling (CA31), Vehicle and Equipment Maintenance (CA32), Employee / Subcontractor Training (CA40), and Dust Control (ESC21);

   (b) A narrative report describing all temporary runoff control measures to be used during mining;

   (c) A site plan showing the location of all temporary runoff control measures; and

(d) A schedule for installation and removal of the temporary runoff control measures; and

9. Evidence demonstrating that any proposed wet trenching proposed for instream salmonid habitat restoration purposes is limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat, including, but not limited to, written approval of the proposed wet trenching from NOAA-Fisheries and/or the Department of Fish and Game.

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

4. <u>Protection of Western Snowy Plover</u>

(A) If gravel extraction commences before September 15th, gravel extraction operations shall occur at least 1,000 feet from suitable plover habitat. Except as specified below, daily plover surveys by an U.S. Fish and Wildlife Service (FWS)-approved biologist, according to FWS survey protocol, shall be conducted prior to commencement of daily on-site activities and continue consistent with subsections 1-2 below:

1. If plovers or an active plover nest is within the area of planned operations or a 1,000-foot buffer area, activities within 1,000 feet of the plovers or nest shall be delayed until the nest has hatched and the plovers have moved to a distance greater than 1,000 feet away (hazing is not authorized).

2. Extraction activities within 1,000 feet of plover habitat may only occur if three consecutive days of FWS-approved plover surveys conducted by a FWS-approved biologist are completed with no detections of plovers or nests. Operators must ensure that extraction activities do not occur when plovers or nests are within 1,000 feet of the extraction site.

(B) All pre-extraction activities conducted in suitable nesting habitat prior to August 22nd of each year shall be preceded by plover surveys completed each day pre-extraction activities are planned to occur. The surveys shall be completed according to FWS survey protocol by a biologist approved by the FWS prior to daily initiation of any pre-operational activities (i.e. topographic surveys). Other surveys (i.e. hydrologic and biological resources) not directly conducted in suitable habitat, but needing access through or near suitable habitat, may be conducted without intensive plover surveys so long as the FWS is consulted first and the surveys are conducted according to the procedures for working in or near suitable plover habitat areas identified by FWS.

(C) Vehicle use in suitable plover habitat shall be minimized to the maximum extent feasible during the plover nesting season prior to September 15th.

1. Vehicle use in suitable plover habitat shall be restricted to 10 mph, unless on a an established access/haul road, where speeds shall be restricted to 30 mph. The first

three vehicle trips on access/haul roads in suitable habitat each day shall not exceed 10 mph.

2. Vehicle use in suitable plover habitat associated with gravel extraction operations shall be restricted to the daytime, between 0.5-hour before sunrise and 0.5-hour past sunset.

3. Parking, staging, and maintenance of vehicles and equipment shall occur at least 1,000 feet away from suitable plover habitat.

(D) Access roads owned or controlled by the gravel operator shall be gated and locked during the plover nesting season (between March 1st and September 15th) when no active extraction and hauling is occurring, including at night, to help prevent recreational vehicles from impacting western snowy plovers. The gate shall be designed to block vehicles only and shall allow for pedestrian access, unless the applicant obtains additional authorization from the Commission to block pedestrian access. Once the existing gate along the access road to the site through the Caltrans right-of-way is removed by Caltrans as required by Special Condition No. 19 of Coastal Development Permit No. 1-07-038, the gravel operator shall utilize separate gates installed on the operator's property outside of the Caltrans right-of-way.

5. Extraction Season

Extraction and all reclamation required by Special Condition No. 7 must be completed by October 15th of each season. The Executive Director may approve either one or two week extensions of gravel extraction and reclamation activities beyond that date to as late as November 1st for all gravel extraction except for trenching within the wet channel in a configuration and extraction volume that is the minimum amount necessary for improving salmon habitat, which may extend to as late as November 15th if the permittee has submitted a request for an extension in writing, the Executive Director determines that dry weather conditions are forecast for the extension period, and any necessary extensions of time have been granted by the Department of Fish and Game, the U.S. Army Corps of Engineers, and NOAA Fisheries. No extraction or reclamation activities shall occur after October 15th unless the permittee has first received approval of an extension of time in writing from the Executive Director. The permittee must have reclaimed all portions of the seasonal development area except for removal of any authorized seasonal crossings before an extension can be authorized.

6. Resource Protection

The gravel extraction and processing operations shall not disturb or remove any of the established riparian vegetation habitat along the banks of the river, nor any of the riparian vegetation areas on the gravel bar limited by Special Condition No. 1. No new haul roads shall be cut through the habitat. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete, oil or petroleum products, or other organic or earthen material from any gravel extraction or reclamation activities shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into river waters.

7. Seasonal Site Closure

The seasonal development area must be reclaimed before October 15th, or by the extended date approved by the Executive Director pursuant to Special Condition No. 5. The site must be reclaimed when extraction has been completed. Reclamation includes: (a) filling in depressions created by the mining that are not part of the approved extraction method; (b) grading the excavation site according to prescribed grade; and (c) removing all seasonal crossings and grading out the abutments to conform with surrounding topography and removing all temporary fills from the bar. After October 15th, the development area must be reclaimed daily except for the removal of authorized seasonal crossings.

8. State Lands Commission Review

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director, a written determination from the State Lands Commission that:

(A) No State lands are involved in the development; or

(B) State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or

(C) State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

9. DFG Streambed Alteration Agreement

PRIOR TO THE START OF EACH YEAR'S GRAVEL EXTRACTION OPERATIONS, the permittee shall submit a copy of any necessary Section 1603 Streambed Alteration Agreement or other approval required by the Department of Fish and Game (DFG) for that gravel extraction season which is consistent with all terms and conditions of this permit. The applicant shall inform the Executive Director of any changes to the project required by the Department. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

10. Regional Water Quality Control Board Water Quality Certification

PRIOR TO THE START OF EACH YEAR'S GRAVEL EXTRACTION OPERATIONS, the permittee shall submit a copy of any necessary CWA Section 401 Water Quality Certification (WQC) or other approval required by the North Coast Regional Water Quality Control Board for that gravel extraction season which is consistent with all terms and conditions of this permit. The applicant shall inform the Executive Director of any changes to the project required by the Board. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

11. Annual Army Corps of Engineers Approvals

PRIOR TO THE START OF EACH YEAR'S GRAVEL EXTRACTION OPERATIONS, the permittee shall submit a copy of any authorization issued by the U.S. Army Corps of Engineers granting approval for that year's gravel extraction season which is consistent with all terms and conditions of this permit, or evidence that no seasonal authorization is required. The applicant shall inform the Executive Director of any changes to the project required by the Corps. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

12. Permit Termination Date

The gravel operations authorized by this permit shall terminate on November 1st, 2013. Continued gravel operations after that date shall require a new coastal development permit.

13. Final Army Corps of Engineers Approval of LOP-2009

PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT AUTHORIZED BY THIS COASTAL DEVELOPMENT PERMIT, the permittee shall provide to the Executive Director a copy of a permit issued by the Army Corps of Engineers, or letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the Army Corps of Engineers. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

14. Final Biological Opinions

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit evidence, for the review and approval of the Executive Director, that the National Marine Fisheries Service (NOAA-Fisheries) and the U.S. Fish and Wildlife Service have issued final Biological Opinions in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. The applicant shall inform the Executive Director of any changes to the project required by the agencies. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

15. Public Safety Fencing Plan

(A) **PRIOR TO THE INSTALLATION OF ANY PUBLIC SAFETY FENCING OR BARRIERS**, the permittee shall submit, for the review and written approval of the Executive Director, a final public safety plan for the proposed fencing or barriers.

1. The plan shall demonstrate that:

   (a) The public safety fencing or barriers shall be installed in a manner that does not block public pedestrian access to the river along the existing Caltrans right-of-way adjacent to Highway 101 through the permittees'

property along the river bank and along the top of the adjacent downstream river bluff, including at the location of the seasonal railroad crossing that is installed for gravel operations, unless the applicant obtains additional authorization from the Commission to block pedestrian access in these areas; and

(b) The proposed fencing or barriers are required to comply with local, state, or federal safety laws.

2. The plan shall include, at a minimum, the following:

(a) A site plan showing the proposed public safety measures and existing public access points at the Highway 101 bridge and along the adjacent downstream river bluff;

(b) A narrative description of the proposed public safety measures;

(c) A schedule for the installation of the public safety measures; and

(d) Evidence that the proposed fencing or barriers are required to comply with local, state, or federal safety laws.

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

IV. FINDINGS & DECLARATIONS

The Commission hereby finds and declares as follows:

A. Environmental Setting

(1) *Background on the Lower Eel and Van Duzen Rivers*

The lower Eel River from the city of Rio Dell downstream to the estuary and the lower Van Duzen River near its confluence with the Eel are depositional reaches bordered by open pastures and some urban development. The average channel width of the lower Eel River is 1,900 feet, and summer fog influences water temperatures in the river. Historically, the channel in much of the project area, which is located from the confluence of the Eel and Van Duzen Rivers up to river mile 0.7 on the lower Van Duzen River, was significantly deeper than it is currently, and through the first half of the 20th century the lower Eel River was navigable by shallow draft boats for commercial shipping. Historical analyses of gradient and riffle conditions in the lower Eel and Van Duzen Rivers provide additional evidence that the rivers are severely aggraded relative to historic conditions. The Eel River at its confluence with the Van Duzen River (i.e., at project site) is aggraded to the point that, in some years (e.g., 1994 and 2001), salmonids holding in the lower Eel River cannot migrate upstream in late fall due to subsurface flows. This same situation has occurred just below the Sandy Prairie levee approximately 4-6 miles downstream of the

project site. In the past, the Department of Fish and Game (DFG) has requested that gravel operators open up the channels to allow for fish passage.

Bank protection and levee structures placed in the lower Eel River have limited the river's ability to migrate and overflow its banks. The river's meandering ability during high flows has been influenced by the past land uses in the area, including construction of the Sandy Prairie levee in 1959 and the Grizzly Bluff levee following the 1964 flood, plus the cutting of the old original channel sometime in the 1860's at Fernbridge (approximately eight river miles downstream of the project site). Levees separate potential overflow areas from the main channel and concentrate the high flow energy of floods to a narrower part of the river bed, thereby moving more bedload material through the area. When available sediment exceeds the channel carrying capacity, sediment deposition (channel aggradation) occurs. The braided section of the channel between lower Eel River miles 10.5 and 13.1 contains the largest available area to store bedload during the 50- to 100-year flows.

The Van Duzen River is the most northern tributary to the Eel River in California's North Coast Range, and enters the Eel River near the community of Alton in Humboldt County. The watershed drains an area of 429 square miles: 366 square miles are in Humboldt County and 63 square miles are in Trinity County. Elevations range from approximately 5,900 feet at its headwaters at Red Lassic Peak to approximately 60 feet at its confluence with the Eel River (i.e., at the project site). The Van Duzen River is over 73 miles long, has no major dams, and thus is one of the few remaining free-flowing rivers in California. The geology of the lower basin of the Van Duzen River (an area encompassing approximately 129 square miles that includes the lower Van Duzen River from the confluence with the Eel River to its confluence with Grizzly Creek) is dominated by relatively stable sandstone, interspersed with pockets of potentially unstable sandstone along steep streamsides and with stable mélange in the lower floodplains. Streams in the lower basin are naturally more capable of supporting anadromous fish than the rest of the basin because of lower gradients and aquatic habitat conditions that are more suitable for salmonids.

The Van Duzen River delta area near the confluence with the Eel River (i.e., at the project site) consists of a meandering network of interconnected channels. Constriction imposed by the Van Duzen bridges (Highway 101 bridges) results in deposition above and below the bridges (control points) and scour at the bridges. This bridge constriction has contributed significantly to ongoing flooding, channel aggradation, and bank erosion along the lower Van Duzen River valley upstream of the bridges. Morphology of the river delta is further complicated by flow regimes within the Eel River, which also affect the delta area.

(2) *Project Area Location*

The applicant proposes to seasonally extract up to 100,000 cubic yards of river run sand and gravel from the lower Van Duzen River and stockpile gravel in adjacent upland areas along the north side of the lower Van Duzen River near its junction with the Eel River, immediately west of the inland edge of the Highway 101 bridge near the community of Alton. The project includes stockpiling material at a stockpile location adjacent to the Highway 101 bridge, but no gravel

processing is proposed. The applicant also proposes to place seasonal railroad flatbed crossings across low flow channels as needed to facilitate gravel transport and to reclaim extraction areas.

The gravel extraction area includes the exposed gravel bars of the lower Van Duzen River from its confluence with the Eel upstream to Van Duzen River Mile 0.7. The Commission's jurisdiction over the overall project site is limited to the part of the river and adjoining areas west of the Highway 101 right-of-way. All of the work downstream of the Highway 101 bridge is within the Commission's retained jurisdictional areas. However, the overall project site extends up river from the Highway 101 bridge to include additional gravel mining outside of the coastal zone.

The proposed gravel extraction would occur in two areas extending across the mouth of the river to the northern property line. The gravel extraction area consists of a large gravel bar formed by the action of both the Van Duzen and Eel Rivers (see above). The bar is largely exposed during low flow conditions during the dry season and largely submerged during high flow conditions in the winter. The project area excludes a dense riparian forest area located closer to Highway 101.

Each year since 2001, the applicant has implemented a salmonid migration barrier modification project (fish channel) at the confluence of the Van Duzen and Eel Rivers, as well as installation of large woody debris (LWD), alcoves, and off-channel trenching. This work has been implemented as part of a collaborative effort between the applicant and Eureka Ready Mix (Hauck Bar) under the guidance of DFG and NOAA-Fisheries.

The existing stockpile area, which is proposed for continued use and to be raised in height under the current application, is located adjacent to Highway 101 in an area that had previously been used as a construction staging area by Caltrans when it reconstructed the Highway 101 bridge. The site is bordered by a dense riparian forest except for the side adjacent to the highway. Existing access roads established for other purposes connect the stockpile area with the gravel bar and the railroad line.

Seven other gravel operators are located in the coastal zone along an approximately 9-river-mile reach downstream of the project site, all of which extract sand and gravel from the rivers (i.e., at Singley, Worswick, Drake, Canevari, Sandy Prairie, Hansen, and Hauck Bars along the lower Eel River). Additionally, three other gravel operations are located upstream of the project site on the Van Duzen River (see Exhibit No. 3), outside of the coastal zone. Tables 1 and 2 below summarize the permitting and gravel extraction history of the lower Eel River and Van Duzen Rivers over the years.

The site is planned and zoned in the Humboldt County LCP either Natural Resources (NR) with a Streams and Riparian Corridors Combining Zone (NR/R), Agriculture Exclusive (AE), with minimum parcel sizes of 60 acres (AE-60), with Flood Hazard (F), Archaeological Resources (A), Streams and Riparian Corridors (R), and Transitional Agricultural Land (T) combining zones, or Undesignated (U). Although the Humboldt County zoning for the property includes an archaeological combining zone (indicating the area is considered to have the potential for archaeological resources), no known archaeological resources exist at the site. Much of the

terrace land along this area has been subject to disturbance as agricultural lands and has been inundated during major flood events. Areas of gravel bars, within the bank full channel, are generally not considered conducive to the establishment or preservation of archaeological sites due to the high incidence of inundation and fluvial reworking.

(3) *Habitat Types & Special-Status Species*

The total project area is approximately 161 acres in size, a portion of which is within the current boundary of "ordinary high water." The area within the OHW boundary is subject to change based upon natural river processes (e.g., erosion, accretion, and meander). Habitat types that occur in the area include the exposed gravel bars, North Coast riparian scrub, North Coast black cottonwood forest, and the low-flow river channel.

The exposed cobble in the gravel bars adjacent to the low-flow channels provides roosting and/or nesting habitats for at least two avian species, killdeer (*Charadrius vociferus*) and western snowy plover (*Charadrius alexandrinus nivosus*), but otherwise represents one of the sparsest habitats in terms of wildlife diversity and numbers. The western snowy plover has been listed under the federal Endangered Species Act as a threatened species since 1993. Though originally thought to inhabit primarily open beach strand environments, plovers have also been observed roosting and nesting on gravel bars on the lower Eel River up to its confluence with the Van Duzen River. The plover sightings on the river bars have been in the months of April through early September, during the nesting season. Unlike many avian species which nest in trees, plovers establish their nests on the open gravel bars.

In general, the riparian vegetation lining the lower Eel and lower Van Duzen Rivers is perhaps the single-most important element for the natural environment in the area, providing habitat for many birds and mammals. The presence of two different kinds of riparian habitat, riparian scrub and black cottonwood forest, provides habitat for a greater number of wildlife species than a more uniform and simple habitat structure would. In addition to its habitat value, the riparian corridor also provides water quality protection, bank stabilization through root penetration, and flood protection.

The North Coast riparian scrub habitat in the project area fluctuates in size, density, location, and maturity in response to flow events, sediment deposition, and natural meandering of the river channel. The vegetation growing within this habitat type is dominated by coyote brush (*Bacharris pilularis*), a sparse covering of small trees (including cottonwood and willow), and various (mostly weedy annual) grasses and herbs. Riparian scrub habitat supports a variety of wildlife species, including a number of small mammals such as raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), gray fox (*Urocyon cinereoargenteus*), rodents and rabbits, and many bird species that use the habitat for foraging, nesting, and cover.

North Coast black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) forest lines the river banks and terraces, maintaining natural channel confinement in the absence of large flood events. This habitat type is a broad-leaved, winter deciduous forest dominated by black cottonwood, with lesser amounts of willow (*Salix* spp.) and red alder (*Alnus rubra*). The forest has a dense

canopy as well as a dense shrub layer and herbaceous understory. The stands of North Coast black cottonwood forest in the area range back to 45 years old, established following major flooding of the Eel and Van Duzen Rivers that occurred in 1964. The cottonwood forest represents the most structurally complex habitat in the area, which in turn supports a higher number and diversity of wildlife species than the other habitats. The North Coast black cottonwood forest provides valuable foraging, breeding, roosting, and shelter habitat for a wide variety of wildlife species, including at least nine bird species, eight mammalian species, two amphibian species, and one reptile species.

Although none have been detected at the project site, the black cottonwood forest offers suitable habitat for a state-listed endangered species, the willow flycatcher (*Empidonax traillii*), as well as four state listed "species of special concern," including black-shouldered kite (*Elanus caeruleus*), Cooper's hawk (*Accipiter cooperii*), yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*).

In general, the riparian zone along the lower Eel and lower Van Duzen Rivers provides migration routes for wildlife. Over 200 different species of birds and 40 different species of mammals have been observed in the Eel River Delta, most of which utilize portions of the riparian corridor. Riparian vegetation also is critical to the survival of salmonids residing in and migrating through the lower Eel and Van Duzen Rivers.

The Eel River and its tributaries (including, importantly, the Van Duzen River) are ranked among the most significant anadromous fisheries in Northern California. Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), and steelhead trout (*Oncorhynchus mykiss*) are among the most important species with regard to commercial and sport fisheries. The coho was listed by the federal government as a "threatened species" along the northern California and southern Oregon coastlines in May of 1997, with critical habitat designated in May of 1999. Additionally, the Southern Oregon – Northern California Coasts Evolutionarily Significant Unit coho (SONCC coho) is currently listed as a threatened species in areas between Punta Gorda and the California-Oregon border under the California Endangered Species Act (CESA). Chinook salmon was federally listed as "threatened" in September of 1999, with critical habitat designated in February of 2000. Finally, steelhead trout was listed as "threatened" in June of 2000.

The lower Eel and lower Van Duzen Rivers, including the project area, are mainly utilized by the anadromous fish as a migration route to and from the upstream spawning grounds. In addition, the lower Eel and lower Van Duzen Rivers support summer rearing habitat for juvenile salmonids, especially steelhead yearlings and fall Chinook sub-yearlings, and holding areas for adult summer steelhead as well as spawning and nursery habitat for marine fishes and invertebrates. A reference to the project site in the Biological Assessment prepared for the lower Eel River and Van Duzen River (Berg 2009, Exhibit C)[1] states as follows:

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[1] Berg, A. 2009. *Biological Assessment for the U.S. Army Corps of Engineers LOP 2009 Authorizing Aggregate Extraction Operations in The Lower Eel River and Van Duzen River, Humboldt County, California.* Draft BA prepared by Alice Berg &

> "The mouth of the Van Duzen River channel is broad and generally shallow. In conjunction with the aggraded conditions, the river may flow subsurface in the late summer and early autumn. The situation has caused stranding and mortality of Chinook salmon in recent years. The ACOE' and NMFS' goals include silt sequestration, encouraging a single-thread channel and more riparian vegetation, and/or encouraging the thalweg adjacent to the existing riparian vegetation. The Van Duzen River is especially appropriate for trenching. Extraction proposals in the lower two miles of the Van Duzen River shall be limited to alternative extraction designs, such as trenching, alcoves, horseshoe pits, very narrow skims, etc. In particular, trenching is recommended in some locations in the Lower Van Duzen, especially when very close to the wetted channel." [page 29]; and
>
> "The majority of extraction operations occur downstream of the Highway 101 Bridge...where there is a barrier to adult migration associated with channel aggradation. Habitat goals at this site include restoring adult migration habitat, protecting streambanks from severe erosion, and enhancing or creating habitat through placement of LWD downstream of the 101 Bridge." [page 41]

Other fish species in the river that are listed by DFG as "species of special concern" include coastal cutthroat trout (*Oncorhynchus clarki*), Pacific lamprey (*Lampetra tridentata*), and Green sturgeon (*Acipenser medirostris*).

The riverine habitat of the river channels on the project site and the occasional ponds that form under summer low water conditions provide habitat not only for fish, but also for invertebrates, amphibians, invertebrate-eating birds, and various mammals including river otters, mink, and other mammals that come to the river to forage (e.g., deer and raccoon).

B. Background on Past & Current Permitting of Gravel Operations on the Lower Eel & Van Duzen Rivers

The lower Eel and Van Duzen Rivers have been used for gravel extraction since 1911. Currently, approximately six gravel operations are located along a 9-mile stretch of the lower Eel River, and three additional operations are located on the lower reaches of the Van Duzen River, which flows into the Eel River at Alton (Exhibit No. 3). All of the operations along the Eel River and the portion of the lowest-most operation on the Van Duzen River west of the Van Duzen River Bridge are within the coastal zone.

All of the gravel operations on the lower Eel and lower Van Duzen Rivers are interrelated in the sense that all of the gravel bars derive their material from the same upstream sediment sources. Brown and Ritter (1972) determined that the Eel River was a "hydraulically-limited" rather than "sediment-limited" river. This means that replenishment is more a factor of the size and duration of winter flows than the production of sediment in the watershed. This determination was based

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Associates for County of Humboldt, Drake Materials, Eureka Ready-Mix, Hanson Sand & Gravel, Van Duzen River Ranch, Mercer-Fraser Company, Rock & Gadberry Sand & Gravel, Thomas R. Bess Asphalt, Sand & Gravel. [See Exhibit C.]

on the calculated high amounts of sediment that currently exist in active land sliding occurring in the watershed.

Thus, over-extraction by all of the projects in the lower Eel and Van Duzen Rivers combined with multiple low winter flow years can contribute cumulatively to erosion of the bed and banks of the river, which in turn can erode adjacent riparian and other habitat areas, interfere with fishery resources, undermine bridge supports, and cause other significant adverse impacts. However, as noted in the County Programmatic Environmental Impact Report (PEIR) referenced below, these same impacts can and have occurred when excessive deposition from high winter flow/duration events occur. Besides the cumulative impacts resulting from river morphology changes, other significant cumulative adverse impacts include habitat degradation from the installation of new gravel processing operations and access roads within environmentally sensitive habitat adjacent to the exposed gravel bars, exclusion of recreational use of the river banks, and noise. These types of impacts typically do not occur if the area is properly managed.

(1) *1991 Programmatic Environmental Impact Report*

Until 1991, there had been very little coordinated review of the combined effects of the various gravel mining operations. Permits granted in the past by the various approving agencies were site-specific and granted with little knowledge of the cumulative impacts of gravel mining throughout the lower Eel River and Van Duzen River.

Gravel mining operations on the Eel and Van Duzen Rivers now require the approval of a number of different local, state and federal agencies. The initiation of coordinated review began to change in 1991. That year, Humboldt County considered the granting of a gravel lease from the County-owned bar at Worswick (on the lower Eel River approximately eight river miles downstream of the subject site). To comply with environmental review requirements under the California Environmental Quality Act (CEQA) the County prepared a Program Environmental Impact Report (PEIR) to describe and analyze the potential environmental effects resulting from the 13 gravel removal operations in the lower Eel River-Van Duzen watersheds. The document was certified in July 1992 and was intended to be incorporated by reference into future environmental documents prepared for individual gravel extraction projects in the area.

As part of that effort, the County initiated a comprehensive review of the status of County permits for each of the operators to reach a final determination as to which operations were proceeding according to valid vested rights or County permits, and which ones required further review. The Department of Fish and Game also began to insist that the operators demonstrate that they had all necessary County approvals before the Department would issue annual Fish and Game Code Section 1603 Streambed Alteration Agreements.

As a result, information was documented about the significant cumulative adverse impacts of the gravel mining operations. The PEIR showed that little change in the bed had occurred over the previous 75 years. Annual monitoring as well as analyses of additional sources of historic bed elevations subsequently substantiated this finding. A late-1990's comparative study by the U.S.

Army Corps of Engineers repeating cross sections at locations that were surveyed in 1969 showed overall little change in bed elevations and gradient over the previous 30 years.

(2) *County of Humboldt Extraction Review Team (CHERT)*

The County developed a strategy for controlling the cumulative impacts of the gravel operations on riverbed degradation and bank erosion. At the heart of the strategy is an annual administrative approval of extraction plans that specifies the particular method and location of extraction. The primary mitigation measure recommended by the PEIR is for the County to prepare a River Management Plan that includes, as a primary component, an annual monitoring program to make annual decisions on where and how much gravel can be removed from the lower Eel and Van Duzen Rivers without adversely affecting the rivers. As described in the PEIR, the monitoring program was to be conducted by a consulting firm using funds provided by the gravel operators. The monitoring program would involve periodic biological surveys, creating cross-sections and thalweg profiles, and taking aerial photos and ground photos each year for each gravel operation. This information would be compiled and compared to data from previous years to determine gravel recruitment, changes in channel morphology, and impacts on wildlife and fisheries. The implementation of this program is currently occurring through the Corps' permitting process and the Humboldt County Interim Management Program. Much of this information is being collected by consultants for the gravel operators as part of the annual monitoring requirements of permitting and reviewing agencies before the commencement of mining each season.

In 1997, the County established its "Lower Eel River Interim Monitoring Plan" (IMP) for use until such time that the River Management Plan is developed. The monitoring plan incorporated and refined the reporting and monitoring requirements that were originally developed in 1991. The Plan also calls for the establishment of a review team to provide the County and other oversight agencies with scientific input on the gravel operations. The Committee that was established is known as "CHERT" (County of Humboldt Extraction Review Team) and is composed of independent fluvial geomorphologists, hydrologists, fisheries biologists, and botanists. CHERT has the authority for the County to review all annual mining plans and prescribe changes to those plans as deemed necessary. CHERT integrates all the monitoring data developed by the gravel operators for geomorphic evaluations of the streambed and also evaluates and recommends practices designed to preserve and enhance vegetation and wildlife habitat.

In January of 2009 CHERT released a 10-year analysis (Exhibit A) of river channel cross sections taken at various sites along the Eel and Van Duzen Rivers near mining sites (including the lower, middle, and South Fork reaches of the Eel River and the lower Van Duzen River).[2] The report represents the longest-term geomorphic analysis completed to date examining the potential effects of gravel mining operations on river channel morphology. The report finds that "While certain methods of mining and locally excessive volumes can affect instream habitat in the short term, the river does not appear to suffer from long term or broad scale channel bed degradation from gravel mining. Furthermore, the CHERT adaptive management program

[2] County of Humboldt Extraction Review Team (CHERT). January 2009. *Analysis of Eel River Cross Sections at Gravel Mining Sites, 1997-2007*. Unpublished report prepared by Randy Klein, Doug Jager, Andre Lehre, and Bill Trush. 24 pp (Exhibit A).

authorized by the IMP specifically addresses preventing local over-extraction and avoids/ minimizes mining methods that cause aquatic and riparian habitat damage" (page 2). The report concludes that "...we did not discern any large scale, persistent effects of Eel River gravel mining on channel thalweg elevations, mean bed elevations, or scour...Gravel mining effects in the Eel River are probably limited to short term, localized effects which the adaptive management program and federal and state oversight attempt to avoid or minimize. Refinement of project-scale minimization measures will continue to be a fundamental component of the adaptive management process, as will instream habitat improvement projects associated with gravel extraction operations" (page 24).

(3) *U.S. Army Corps of Engineers Letter of Permission Procedure*

In the fall of 1993, due to an amendment to its Clean Water Act (CWA) regulatory program, the U.S. Army Corps of Engineers became more involved in regulating gravel extraction operations. Whereas previously the Corps' regulatory review of many in-stream gravel extraction operations focused mainly on the installation of channel crossings and stockpiling of material on the river bar, in 1993, the Corps began actively regulating incidental fill related to gravel mining activities themselves. In an effort to streamline the processing of CWA permits for the numerous in-stream gravel operations within Humboldt County, the Corps adopted a Letter of Permission (LOP) procedure for authorizing such projects (LOP 96-1). The LOP was adopted after a series of interagency and public meetings. An applicant for a project covered by the LOP must submit yearly gravel plans and monitoring information to the Corps for approval under the procedure. The Corps incorporated the County's CHERT review process into its LOP procedure.

As discussed in more detail below, the Corps issued an LOP to cover gravel mining in Humboldt County for the 2002-2008 gravel extraction seasons (LOP 2004-1) and has issued a new LOP Procedure 2009 (LOP-2009) Public Notice dated February 19, 2009 (No. 2007-00857) to cover gravel mining in Humboldt County for the next five years. The LOP-2009 is still in process (pending final Biological Opinions from NOAA-Fisheries and the U.S. Fish and Wildlife Service) and is expected to be issued in late August or early September, before the end of this summer's gravel mining season.

As with all "federal actions" that might adversely impact rare, threatened, and endangered fish and wildlife, the LOP process and the Corps' review of individual Section 404 permits is also subject to consultations with applicable natural resource trustee agencies as required under Section 7 of the Federal Endangered Species Act (FESA). FESA Section 7 directs all federal agencies to use their existing authorities to conserve threatened and endangered species, and, in consultation with other federal agencies possessing ecological expertise regarding ecology and habitat requirements for these plants and animals, ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to management of federal lands as well as other federal actions that may affect listed species, such as federal approval of private activities through the issuance of federal permits, licenses, or other actions such as the LOP gravel mining and authorization procedure and the issuance of individual Section 404 permits.

The consultation process primarily consists of the agency undertaking the action of compiling biological assessment (BA) data detailing the current status of the fish and wildlife species within the area subject to the federal agency action, and a preliminary assessment of the likely effects of the action on those species. This information is then submitted to the particular resource agencies assigned the responsibility for ensuring protection to the various FESA-listed species. NOAA-Fisheries prepares and issues a Biological Opinion (BO) regarding impacts of gravel extraction to the listed salmonid species. The western snowy plover, a listed threatened species, also requires consultation with the U.S. Fish and Wildlife Service (FWS). Based on the findings of the NOAA-Fisheries and FWS reviews, mitigation measures required by the FESA are incorporated into extraction requirements. As more information is gathered on the species and the direct, indirect, and cumulative effects on species individuals and their habitat, these mitigation requirements are revised as necessary.

a. Federal ESA Section 7 Consultations with NOAA-Fisheries

NOAA-Fisheries originally issued a BO in July of 1997 for the LOP Procedure for Gravel Mining and Excavation Activities within Humboldt County, California (LOP 96-1). The LOP 96-1 was authorized for a five-year term, expiring in August 2001. Several FESA listing actions occurred subsequent to the issuance of NOAA-Fisheries' 1997 BO, including designation of critical habitat for Southern Oregon/Northern California Coastal (SONCC) coho salmon, listing of California Coastal (CC) Chinook salmon as threatened and designation of critical habitat, and listing of Northern California (NC) steelhead as threatened. As a result of the listing of additional salmonid species and designation of critical habitat in 1999, the Corps requested reinitiation of Section 7 ESA consultation, and NOAA-Fisheries prepared a revised BO (dated May 1, 2000). In June of 2001, the Corps extended the expiration date of LOP 96-1 to October 31, 2001 and requested an amendment to the duration of the 2000 BO, which analyzed the extended duration of the proposed gravel extraction activities.

NOAA-Fisheries began working with the Corps, other agencies, and Humboldt County gravel operators and their consultants during the winter of 2001-2002 on a replacement LOP procedure anticipated to be in place for the 2002-2007 extraction seasons (originally enumerated as LOP 2002-1). A draft LOP 2002-1 was circulated for public comment in May 2002, at which time it became apparent to involved agencies that several issues could not be resolved prior to the 2002 mining season. As a result, the Corps decided to further extend LOP 96-1 through December 31, 2002 to provide an authorization process for the 2002 gravel mining season and again requested that NOAA-Fisheries amend the 2000 BO to analyze the extended duration of LOP 96-1.

On November 26, 2002, the Corps issued a public notice announcing re-initiation of its efforts for authorization of a new Humboldt County LOP process, re-enumerated as LOP-2003-1. Concurrent with the announcement, the Corps again requested a FESA Section 7 consultation from NOAA-Fisheries.

On June 11, 2003, NOAA-Fisheries issued a draft BO for LOP-2003-1. The Draft BO incorporated newly available information that was not previously analyzed in the 2000 BO and its subsequent revisions issued for the LOP's 2001 and 2002 administrative extensions. In

addition, the draft BO further detailed the potential adverse direct, indirect, and cumulative effects of gravel mining and extraction activities on listed salmonid species that might occur under the proposed five-year duration of LOP 2003-1.

In the draft BO, NOAA-Fisheries concluded that authorization of LOP 2003-1 procedures as proposed by the Corps for gravel mining during the 2003-2007 seasons, "is likely to jeopardize the continued existence of threatened SONCC (Southern Oregon/Northern California) coho salmon, NC (Northern California) steelhead, and threatened CC (Central California) Chinook salmon, and is likely to adversely modify SONCC coho salmon critical habitat." As required by the FESA, accompanying the "jeopardy opinion" were "reasonable and prudent alternatives" (RPAs) to the proposed LOP protocols. If followed, NOAA-Fisheries believed gravel mining pursuant to LOP-2003-1 would avoid the likelihood of jeopardizing the continued existence of listed species or destruction or adverse modification of critical habitat. With such program alterations in place, NOAA-Fisheries could issue an "incidental take statement" that would allow the Corps to undertake the LOP process without being found in conflict with the provisions of the FESA.

However, in subsequent meetings with the mining applicants, the public, and with Corps, NOAA-Fisheries, FWS, and other permitting agency staff, several of the mining applicants expressed their concerns over the possible future difficulties that might be encountered should the five-year LOP procedure be authorized under a jeopardy opinion. Additional concerns were voiced as to whether NOAA-Fisheries had adequately considered and analyzed the information collated over the years by the miners on the effects of gravel mining FESA-listed fish species. As a result, the Corps decided to extend once again LOP 96-1 through December 31, 2003 to provide an authorization process for the 2003 gravel mining season and again requested that NOAA-Fisheries amend the 2000 BO to analyze the extended duration of LOP 96-1. In addition, the Corps modified the procedures and terms of LOP 96-1 to include the reasonable and prudent alternatives identified within the draft BO for LOP 2003-1 in the interest of avoiding a jeopardy opinion also being issued for the 2003 extension of LOP 96-1.

On August 29, 2003, NOAA-Fisheries issued its BO on the modified LOP procedure for gravel mining (modified LOP 96-1). The BO concluded that gravel mining under the modified LOP 96-1 procedure for the 2003 mining season was not likely to jeopardize the continued existence of threatened salmonids, and was not likely to adversely modify or destroy salmonid critical habitat. In addition, NOAA-Fisheries issued an accompanying "incidental take statement" subject to three "reasonable and prudent measures" that set certain procedural requirements for the implementation of LOP 96-1, but did not require substantive changes to the limitations on mining contained in modified LOP 96-1.

In the winter of 2003-2004, the Corps issued a public notice announcing once again, re-initiation of its efforts for authorization of a new Humboldt County LOP process, re-enumerated as LOP-2004-1. The 2004-1 LOP notice was prepared after extensive consultation with NOAA-Fisheries on changes in procedures to further reduce impacts on threatened salmon species and to enhance critical habitat. The new procedures placed an emphasis on (1) ensuring that the floor elevation of gravel bar skimming operations remain above the water surface elevation of the 35 percent

exceedence flow for each site, on an annual basis, to further reduce the chances of river bed alterations from mining, and (2) encouraging the use of alternative extraction methods such as alcove extractions at the down stream end of grave bars to provide velocity refuge for fish during high flows and trenching in desiccated stream channel areas to improve fish passage. The LOP set forth certain extraction limitations that all operators planning to mine under the LOP must follow (e.g., see those listed below for LOP-2009). Concurrent with the announcement of the new LOP, the Corps again requested a FESA Section 7 consultation from NOAA-Fisheries. On August 13, 2004, NOAA-Fisheries transmitted its completed BO of the LOP 2004-1 for proposed gravel extraction operations on Humboldt County rivers and its effects on SONCC coho salmon and its designated critical habitat, CC Chinook salmon, and NC steelhead pursuant to Section 7(a)(2) of the Endangered Species Act (Exhibit E). The BO concluded that after reviewing the best available information, the LOP Procedure 2004-1 as proposed, would not likely jeopardize the continued existence of the three threatened salmonid species or result in the destruction or adverse modification of SONCC coho salmon designated critical habitat. NOAA-Fisheries also evaluated the proposed project for potential adverse effects to essential fish habitat (EFH) for federally managed fish species. The BO concluded that the proposed action may adversely affect EFH. However, the opinion stated that NOAA-Fisheries had no conservation measures to recommend over what was currently proposed. The BO noted that conservation recommendations provided in past gravel mining consultations had been incorporated into the proposed action.

The last time the Commission approved coastal development permits for gravel mining on the lower Eel and lower Van Duzen Rivers was in 2004, the same year that the Corps issued the LOP. Based on the BO issued by NOAA-Fisheries that the seasonal extraction of gravel on the lower Eel and lower Van Duzen Rivers over the five years proposed under LOP-2004-1 would not result in more than incidental take of threatened salmon species and would not jeopardize their continued existence, the Commission approved the projects, having determined that the proposed five-year gravel mining projects proposed for the lower Eel and lower Van Duzen Rivers that would be performed in accordance with the procedures described in the LOP notice and NOAA-Fisheries BO would avoid impacts on sensitive fish species consistent with the requirements of Sections 30233 and 30240 of the Coastal Act. LOP-2004-1 expired at the end of 2008. In addition, the six gravel mining permits granted by the Commission in 2004 only authorized gravel mining through the summer of 2008.

b. Federal ESA Section 7 Consultations with the U.S. Fish & Wildlife Service

Similar to NOAA-Fisheries consultation on the Corps LOP process, the U.S. Fish and Wildlife Service (FWS) has consulted in the past on the LOP process with regard to impacts on the western snowy plover. The western snowy plover has been listed under the federal Endangered Species Act as a threatened species since 1993, and plovers were first discovered nesting on Eel River gravel bars near Fernbridge in June of 1996. Since that time the FWS has provided technical assistance to the Corps regarding its actions relative to the effects of gravel extraction on plovers.

In August of 1996, the FWS, in response to an informal consultation request from the Corps regarding LOP 96-1, concurred with the Corps' determination that the LOP 96-1 procedure was not likely to adversely affect the western snowy plover. This determination was based on various operating requirements being implemented including, but not limited to, not commencing gravel extraction operations prior to September 15 in the absence of plover surveys and maintenance of a minimum 300 meter buffer between identified plover habitat and gravel operations.

In July of 2001 the Corps requested formal Section 7 consultation on the extension of LOP 96-1 and its effect on the plover, but the FWS responded with a letter dated August 17, 2001 that more information was necessary to initiate formal consultation. Additional recommendations were provided by the FWS for the draft LOP 2002-1, including those mentioned above plus additional details such as speed limits and time-of-day restrictions on operations.

Formal consultation on the plover was again requested by the Corps in May of 2004. In September 2004 the FWS explained that the agency was unable to complete consultation on the LOP 2004-1 before the 2004 extraction season, but confirmed that plover chicks had vacated the gravel bars for the 2004 year, and gravel extraction was not likely to adversely affect plovers. Also in September 2004 the FWS concurred with the Corps' determination that issuance of an individual permit to Eureka Ready Mix for gravel extraction activities at Hauck Bar (at river mile 14, just downstream of the confluence of the Eel and Van Duzen Rivers) was not likely to adversely affect plovers, provided various protective measures were followed.

In September of 2005 the FWS issued its BO for gravel operations on the lower Eel and lower Van Duzen Rivers covered under LOP 2004-1 (Exhibit F), at which time the LOP 2004-1 was republished with the Incidental Take Statement (ITS) attached as Appendix E. The terms and conditions of the ITS included various measures to protect plovers from activities associated with gravel extraction on the lower Eel River. The BO expired at the end of 2008.

In its approval of various gravel mining permits in 2004, the Coastal Commission determined that the proposed five-year gravel mining projects proposed for the lower Eel and lower Van Duzen Rivers that would be performed in accordance with the procedures described in the LOP-2004-1 notice and the FWS BO would avoid impacts on the western snowy plover, consistent with the requirements of Sections 30233 and 30240 of the Coastal Act.

(4) *Permits and Consultations for the 2009-2014 Gravel Extraction Seasons*

With the expiration of LOP-2004-1 at the end of 2008, the planning process for a new Humboldt County LOP procedure began in the spring of 2008. In February of 2009, the Corps issued a new LOP procedure notice (No. 2007-00857), which describes standardized procedures for gravel extraction activities, temporary stockpiling of gravel, associated salmonid habitat improvement activities, and construction of seasonal road crossings for the five-year implementation period of LOP-2009. The new LOP-2009 announcement is very similar to LOP-2004-1 in its terms and conditions. The Biological Assessments (BA) prepared by the applicants to assist the Corps, NOAA-Fisheries, and the FWS in their review of the proposed gravel operations to be permitted under LOP-2009, however, was required to include a detailed

assessment of the effects of the gravel extraction activities authorized under the previous LOP (LOP-2004-1). The BA also was to list and quantify habitat enhancement activities undertaken during the five-year implementation period of LOP-2004-1 to determine a rough target of enhancement activities for the LOP-2009 implementation period.

The gravel extraction terms and limitations set forth in proposed LOP-2009 include, in part, the following:

- All applicants shall use the CHERT process for annual review and recommendations.
- A minimum head-of-bar length, generally defined as that portion of the bar that extends from at least the upper third of the bar to the up-stream end of the bar as exposed at summer low flow shall not be mined or otherwise altered.
- The minimum skim floor elevation will remain above the water surface elevation of the 35 percent exceedence flow for each site, on an annual basis.
- Temporary channel crossings locations will avoid known spawning areas. Where bridges are not able to span the entire wetted channel, the crossing location will be determined on a site-specific basis.
- Temporary crossings will be placed after June 30 only. All crossings and associated fills will be removed after excavation ceases but before October 15 on the Eel River with possible extensions of time.
- The amount of time heavy equipment is in the wetted channel shall be minimized by limiting the number of equipment crossings to two (2) occurrences during placement and removal of the crossing structures.
- Temporary storage of excavated material may occur on the gravel bar, but must be removed by October 1. In order to minimize the turbidity associated with excavating wet sediment, all wet excavated sediment must be stockpiled on the gravel bar away from the low flow channel and allowed to drain prior to hauling across the temporary channel crossing.
- All riparian woody vegetation and wetlands must be avoided to the maximum extent possible. Any riparian vegetation or wetland that is to be disturbed must be clearly identified by mapping. Woody vegetation that is part of a contiguous 1/8-acre complex, or is at least 2 inches diameter breast height (DBH) that is disturbed must be mitigated;
- Gravel removal must remain a minimum distance of 500 feet from any structure (i.e. bridge, water intake, dam, etc.) in the river. For bridges, the minimum setback distance is the length of the bridge or 500 feet, whichever is greater; Gravel removal may encroach within this setback if approval is given by owners of these structures and approved by the Corps;
- The project area must be regraded, if necessary, before the water levels rise in the rainy season and must be completed by October 15 each year. Regrading includes filling in depressions, grading the construction/excavation site according to the approved configuration, leaving the area in a free-draining configuration (no depressions and

sloping toward the low flow channel), and removing all temporary fills from the project area.

- Unless the Letter of Permission is specifically modified, gravel extraction shall cease by October 15 each year. Regrading, if necessary, shall be completed prior to October 15th. Requests for a extension will be reviewed by the Corps on a case by case basis. The applicant, however, must have regraded the site before an extension can be authorized.
- All applicants shall submit, as part of the application, a written assessment by a qualified biologist describing the potential effects of the project on federally threatened, endangered, or proposed species under the Endangered Species Act.
- There is a potential for gravel operations downstream of the confluence of the Eel River and the Van Duzen River to adversely affect the western snowy plover. Appendix E (of the LOP-2009 public notice) contains requirements necessary to assure the extraction activities (including pre-season surveys) are not likely to adversely affect the western snowy plover.
- There is a potential for operations anywhere in the rivers and streams of Humboldt County to adversely affect SONCC coho salmon, CC Chinook salmon and NC steelhead. Appendix M (of the LOP-2009 public notice) contains the most recent NOAA-Fisheries Biological Opinion. The BO contains restrictions (reasonable and prudent measures), which are mandatory conditions of the LOP-2009. [This measure anticipates issuance of the NOAA-Fisheries BO, which has not yet occurred.]
- The actions authorized by this LOP are expected to include certain activities at project areas, during extraction seasons, that will enhance habitat for salmonids and other riverine species. The specific details of such habitat enhancement activities shall be determined during, and follow, the same multiagency pre-extraction design review process that is used for gravel extraction operations. Many of the habitat enhancement activities shall be consistent in scope, size and cost impact as restoration activities that have occurred in the past under LOP-2004. These activities included, but were not limited to, trenching designed to improve salmon migration, alcove construction, placement of edge water large woody debris, and construction of wetland pits to improve aquatic and riparian habitat. Some habitat enhancement activities will be new to this LOP, including, but not limited to, riparian planting and strategic placement of large wood and boulders in the stream.
- Large woody debris (LWD) in the wetted channel and on floodplains and terraces is an important component of aquatic and riparian habitat. However, it is common practice for LWD to be gathered by local residents for firewood and other uses. To reduce the adverse effects of this longstanding practice, educational signing regarding the importance of LWD for salmonids shall be placed at access roads owned, controlled, or utilized by the gravel operators. In addition, in order to protect LWD deposited on mined gravel bars, all access roads owned or controlled by commercial gravel operators shall be gated and locked to reduce access; the County shall be exempt from this requirement. Operators should consult with NOAA-Fisheries for suggestions on the wording and design of this sign.

- Impacts to snowy plovers shall be avoided to the maximum extent possible. Appendix E (of LOP-2009 public notice) further describes the operating requirements that are required for gravel activities, including pre-extraction planning and surveys. The Corps will not participate in on-site pre-extraction reviews until after September 15 or after the plover biologist provides the Corps written confirmation that the pre-extraction surveys have been completed in accordance with the FWS final BO for LOP-2009 and Appendix E of the LOP.
- Extraction proposals in the lower two miles of the Van Duzen River shall be limited to alternative extraction designs, such as trenching, alcoves, horseshoe pits, very narrow skims, etc. In particular, trenching is recommended in some locations in the lower Van Duzen, especially when very close to the wetted channel. [3]
- In addition to the alternative extraction techniques listed above, "Very Narrow Skims" on the lower two miles of the Van Duzen River (from the confluence to River Mile 2) shall be limited to 90 feet total width, as measured across the top of the extraction. This width provides for confinement of typical early season (November/December) peak flows of 1,000 cfs and maintains a depth of one foot within the narrow skim area, which shall also be above the water surface elevation of the 35 percent exceedence flow, so that impairment of adult passage is reduced.

Shortly after the announcement of the new LOP, the Corps again requested a FESA Section 7 consultation from NOAA-Fisheries and the FWS. The formal consultations conducted by NOAA-Fisheries and the FWS provide critical evidence for the Commission's review of the proposed gravel mining operations on the lower Eel and Van Duzen Rivers that the operations will not result in significant adverse impacts on threatened and endangered species. In previous actions on coastal development permits for gravel mining on the lower Eel and Van Duzen rivers, the Commission has relied upon those BOs to find consistency of the gravel mining projects with Section 30233 of the Coastal Act and to approve the projects.

On July 27, 2009, NOAA-Fisheries transmitted its preliminary conclusions and draft terms and conditions to minimize the amount or extent of "take" of threatened salmonids (Exhibit D). The final BO for LOP-2009 for proposed gravel extraction operations on the Eel and Van Duzen Rivers is anticipated to be issued in late August. The preliminary conclusion states that:

> *"After reviewing the best available scientific and commercial information, the current status of SONCC coho salmon, CC Chinook salmon, NC steelhead, and their designated critical habitats, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the biological opinion of NMFS that gravel mining under LOP 2009 for the five-year permit period, ending December 31, 2013, is not likely to jeopardize the continued existence of threatened SONCC coho salmon, threatened NC steelhead, and threatened CC Chinook salmon, and is not likely to adversely modify or destroy SONCC coho salmon, CC Chinook salmon or NC steelhead designated critical habitat."*

[3] For a description of gravel extraction methods referenced in the LOP, see Appendix B.

The preliminary conclusion of NOAA-Fisheries notes that the measures instituted in 2004 have worked well, and the agency does not anticipate any significant changes the requirements and recommendations to the Corps that will be included in the final BO for LOP-2009.

The FWS final BO is expected to be issued by late August 2009. The FWS has informed staff that it does not anticipate that its recommended conditions for western snowy plover will be significantly different than those included in the 2005 Biological Opinion (see Exhibit F). The FWS preliminarily concludes that the proposed gravel operations will not jeopardize the continued existence of the plover or adversely modify or destroy its designated critical habitat. As discussed in more detail in Finding IV-O below, the Commission attaches Special Condition No. 14, which requires the applicant to submit, prior to permit issuance, final BOs in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. Any changes required by the agency shall be reported to the Executive Director and not incorporated into the project until the applicant obtains any necessary amendment to the coastal development permit.

(5) *History of Coastal Commission Permits for Gravel Extraction on the Lower Eel & Van Duzen Rivers*

Over the past two decades, the Commission has issued at least 32 permits for gravel extraction on the lower Eel and Van Duzen Rivers, as summarized in Table 1. In general, actual annual extracted volumes in the lower Eel and lower Van Duzen Rivers have consistently been lower than approved volumes every year over the past decade, as seen in Table 2. From 1997 through 2007, a total of 2,273,959 cubic yards of aggregate was extracted from the lower Eel (averaging 206,724 cubic yards annually), which is only 62 percent of the total approved volume of 3,685,802 cubic yards (see Table 2) (figures for the lower Van Duzen River are unavailable, as those data were lumped with data from gravel operations upriver, outside of the coastal zone).

Table 1. Summary of gravel operations in the coastal zone on the lower Eel and Van Duzen Rivers, from approximately River Mile (RM) 5 on the lower Eel up to just beyond the confluence of the Eel and Van Duzen Rivers (up to RM 0.7 on the lower Van Duzen River).

Location (Bar & River Mile)	List of Current & Past Applicants	Coastal Development Permit Nos.	Approved Maximum Annual Volumes (cubic yards)
Singley Bar (RM 5-6)	Eureka Ready Mix (aka Eureka Sand & Gravel); Arcata Readimix	1-92-157 1-97-068 1-04-022 1-09-005	150,000
Worswick Bar (RM 7)	Humboldt County Public Works Dept.; Humboldt Bay Gravel, Inc.; Eureka Southern Railroad Co.	1-90-195 1-96-062 1-00-055 1-04-024 1-09-014*	25,000
Drake Bar (RM 9)	Mallard Pond Sand & Gravel; Drake Materials; Drake Sand & Gravel	1-94-079 1-01-046 1-02-162 1-04-046	250,000

Location (Bar & River Mile)	List of Current & Past Applicants	Coastal Development Permit Nos.	Approved Maximum Annual Volumes (cubic yards)
Sandy Prairie Plant B (RM 10-11)	Mercer-Fraser; Canevari Timber Co.	1-94-006 1-94-006-A1	200,000
Sandy Prairie Plant A (RM 11-12)	Mercer-Fraser	1-94-035 1-00-009 1-03-014 1-04-020 1-09-022	70,000
Hansen Bar (RM 13.5)	Charles Hansen	1-97-017 1-02-023 1-03-030 1-09-011	50,000
Hauck Bar (RM 14)	Eureka Ready Mix (aka Eureka Sand & Gravel)	1-96-053 1-02-022 1-02-164 1-04-011 1-09-006	150,000
Near the confluence of Van Duzen & Eel Rivers (up to Van Duzen RM 0.7)	Rock & Dwelley	1-96-068 1-02-006 1-03-048 1-04-045 1-09-021*	100,000

* Permit applications are pending approval.

Table 2. Approved and extracted gravel mining volumes in the lower Eel River (excluding the Rock and Dwelley operation on the lower Van Duzen River) since 1997 (from CHERT 2009, Exhibit A). [Note: Data for the lower Van Duzen River are unavailable, as they were lumped with data from gravel operations upriver, outside of the coastal zone.]

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1997	561,700	326,500	58
1998	399,100	273,000	68
1999	471,400	290,500	62
2000	291,300	208,600	72
2001	389,900	119,300	31
2002	387,300	220,000	57
2003	318,300	163,900	51
2004	188,840	120,305	64
2005	199,370	166,280	83
2006	235,495	208,240	88
2007	243,097	177,334	73
Totals	**3,685,802**	**2,273,959**	**62**
Years	**11**	**11**	**---**
Annual Averages	**335,073**	**206,724**	**62**

At the project site, gravel extraction operations historically have varied with market demands and river conditions, but similar to the trend seen in the lower Eel in general, actual annual extracted volumes at the project site have typically been lower than approved volumes.

C. Detailed Project Description

The applicant proposes to extract a maximum of 100,000 cubic yards of sand and gravel per year for a period of five years. In addition, the applicant proposes to continue to use the existing stockpile site west of the Caltrans right-of-way along Highway 101 to stockpile material for later shipment as unprocessed material. The existing stockpile area was permitted under the five years of gravel operations authorized by CDP No. 1-04-045 to be 535 feet long, 220 feet wide, and a maximum of 15 feet high. The applicant is proposing to continue to use the existing stockpile area, but is proposing to increase its maximum height to 30 feet. Finally, the applicant is proposing to install summer bridge crossings as needed to access areas of the extraction site. If a bridge becomes necessary depending on the location of the wetted, low-flow channel, the applicant proposes to construct a crossing consisting of two 60-foot-long rail cars spanning the area to be crossed. Gravel from the surrounding area would be graded to form necessary abutments. At the end of the extraction season, the bridge would be removed off the site and the bar in the vicinity of the bridge would be regarded to reestablish pre-existing contours.

Although the total project area is approximately 161 acres in size, in any given year approximately 34 acres would be disturbed and then reclaimed.

As discussed above, the applicant has implemented a salmonid migration barrier modification project (fish channel) at the confluence of the Van Duzen and Eel Rivers annually since 2001, as well as installation of large woody debris (LWD), alcoves, and off-channel trenching. This work has been implemented as part of a collaborative effort between the applicant and Eureka Ready Mix (Hauck Bar) under the guidance of DFG and NOAA-Fisheries. The applicant again proposes to excavate the fish channel under the current application, in cooperation with Eureka Ready Mix, DFG, and NOAA-Fisheries. Narrow skims may also be utilized, but would be limited to a maximum width of 90 feet.

The applicant has previously undertaken gravel extraction in the proposed area under permits approved by the Commission for five calendar-year periods (CDP No. 1-96-068 for the 1997 through 2001 gravel extraction seasons and CDP No. 1-04-045 for the 2005 through 2008 gravel extraction seasons). Additionally, one-year extraction operations were approved under Coastal Development Permit Nos. 1-02-006 and 1-03-048.

The proposed annual extraction amount of 100,000 cubic yards is proposed as an upper limit, is consistent with the PEIR for the lower Eel River, and is based upon evaluation of additional information as well as the data collected under the Humboldt County PEIR and Interim Management Programs. This project has been described to permit adaptive management of the project area. In any given year, project extraction volumes, locations, and methods would be submitted by the project consultants for approval by local, state, and federal agencies, including the County of Humboldt, DFG, and the Corps. Annual assessments and site evaluations would be

used to determine where aggregate could be excavated without causing long-term river bed degradation, the levels and volume of recruitment, and appropriate extraction volumes. No mining would occur at any location until after specific mining and reclamation plans are developed on the basis of annual environmental assessments and monitoring of the proposed project site.

Gravel is proposed to be extracted using a bulldozer, a front-end loader, and dump trucks. The trucks would haul extracted material from the extraction site off the bar to the stockpile area via existing access roads that have been developed for other purposes. No new haul roads are proposed to be cut or developed.

During any given extraction year, gravel mining would not occur until after July 22nd, consistent with FWS recommendations for minimizing disturbance of the western snowy plover during its breeding season. Extraction operations would be completed in any given mining year by November 1st or earlier if declared by the Corps, NOAA-Fisheries, and/or the DFG. This coincides with the onset of the rainy season and rise in the river, which likely will inundate the extraction areas and/or prompt the upstream migration of adult salmonids.

D. Protection of the Riverine Environment

The proposed project involves the surface mining extraction of sand and gravel from exposed gravel bars of the lower Van Duzen River using mechanized heavy equipment for grading and dredging operations. Several Coastal Act policies address protection of the portion of the river environment below the ordinary high water mark from the impacts of development such as gravel mining. Coastal Act Sections 30230 and 30231 require, in part, that marine resources (including salmonids) and coastal wetlands be maintained, enhanced, and where feasible restored. These policies specifically call for the maintenance of the biological productivity and quality of marine resources, coastal waters, streams, wetlands, and estuaries necessary to maintain optimum populations of all species of marine organisms and for the protection of human health. Section 30233 applies to any diking, filling, or dredging project in a river and other coastal waters. Gravel extraction within a river bed is a form of dredging within a wetland.

Section 30230 of the Coastal Act states, in applicable part, as follows:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.* [Emphasis added.]

Section 30231 of the Coastal Act states as follows:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff,*

preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

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

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

...

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas. [Emphasis added.]

...

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...

Section 30240 of the Coastal Act states as follows:

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

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

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

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

When read together as a suite of policy directives, Sections 30230, 30231, and 30233 set forth a number of different limitations on what types of projects may be allowed in coastal wetlands. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories or tests. These tests require that projects that entail the dredging, diking, or filling of wetlands demonstrate that:

1. the purpose of the filling, diking, or dredging is for one of the seven uses allowed under Section 30233;
2. feasible mitigation measures have been provided to minimize adverse environmental effects;
3. the project has no feasible less environmentally damaging alternative; and

4. the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

(1) *Permissible Use for Dredging and Filling of Coastal Waters*

The first test set forth above is that any proposed filling, diking, or dredging must be for an allowable use as enumerated under Section 30233 of the Coastal Act. The proposed project involves dredging for mineral extraction. The multi-year gravel operation proposes to use a variety of extraction techniques that would be allowed by the proposed Corps' LOP and recommended by NOAA-Fisheries as techniques that would avoid significant impacts to salmonids. Surface mining of gravel aggregate materials is specifically enumerated as a permissible use in the above-cited policy [Section 30233(a)(5)], provided the activity is not undertaken in environmentally sensitive areas. Therefore, to the extent that the proposed gravel extraction will avoid environmentally sensitive areas, the proposed project is consistent with the use limitations of Section 30233(a)(5).

All but one of the proposed gravel extraction techniques would involve excavation on dry portions of the gravel bars without encroachment into the salmon habitat of the river channel. The sole exception is the wet trenching technique, which would involve excavating sediment directly from portions of the channel, after the stream flow has been diverted to a secondary channel location. The wet trenching method of extraction would only be used when there is the objective of improving instream salmonid habitat by the limited use of sediment removal, and where the diversion of the low flow channel into a secondary channel that provides salmonid habitat is possible. The wet trenching technique would involve excavation within salmonid ESHA habitat, and thus would not be permissible under Section 30233(a)(5). As the wet trenching method proposed is a form of substantial alteration of a river or stream proposed for the improvement of fish habitat, the Commission evaluates this aspect of the proposed development under Section 30236 of the Coastal Act in Section IV-E of the findings below.

a. Mineral Extraction Allowed by Section 30233(a)(5)

There are various types of environmentally sensitive habitats on the project site including: (a) the live (flowing) waters of the river, which is habitat for threatened salmonid species; (b) riparian habitat, including North Coast riparian scrub habitat occurring on high points within the bank-full channel of the river, and North Coast black cottonwood forest occurring along the outer channel edges; and (c) nesting habitat for the federally threatened western snowy plover.

The proposed mining project will be located in areas that will avoid intrusion into these habitat areas and/or be performed at times when sensitive species will not be nesting and/or utilizing the site for habitat. Descriptions of the habitats and their use by wildlife are found in the Findings Section IV-A-(3), "Habitat Types & Special-Status Species," of this report.

i. Flowing River Channel as Environmentally Sensitive Habitat

Under Section 30107.5 of the Coastal Act, any area supporting a plant, animal, or habitat is environmentally sensitive if the area meets two main criteria: (1) the plant, animal, or habitat is

either rare or of special value because of its special nature or role in the ecosystem, and (2) the area could be easily disturbed or degraded by human activities and developments.

The water column and river bottom substrate within the year-round low-flow channel of rivers provide habitat for a wide variety of resident and migratory fish and wildlife species at all trophic levels, ranging from aquatic macro-invertebrates to mammals. These perennially-inundated areas within the river meet the first criterion of the definition of environmentally sensitive area, because during the time that the proposed mining would be conducted within these riverine areas, the inundated areas of the reach may contain rare or endangered species, namely federal- and state-listed salmonids using this reach as a transit corridor between areas of holding habitat prior to the onset of upstream migration.

The perennially-inundated areas within the river also meet the second criterion in that diversion, dewatering, fill, and dredging activities for gravel extraction in the river, such as proposed by the applicant, can quickly disturb and degrade the habitat areas the mining activities come in contact with, at least during the mining activities. In addition, on a more permanent basis long after the initial excavation work is completed, trenching can also destabilize the river channel and easily cause erosional impacts that can degrade the perennially inundated areas within the river. Furthermore, most portions of the riverbed that remain wetted also qualify as environmentally sensitive areas because of their special role as a holding area and transit corridor for migrating threatened salmonids.

The Commission has previously determined in numerous permit actions that such riverine perennial channels supporting migrating threatened salmonids are environmentally sensitive areas. The Commission has consistently conditioned permits for development in and near such channels and along riparian woodlands within streams and rivers to avoid disturbances of such environmentally sensitive aquatic resources.

In the most comprehensive sense, the entire area between the banks of the river could be considered an environmentally sensitive area, at least during portions of the year when covered by higher flows. However, during the summer dry season when river waters are confined to the definable low-flow channels, the dry exposed areas within the stream banks become inaccessible to migratory threatened salmonid fish species and other aquatic life forms. In recognition of this situation and the resource-dependent nature of sand and gravel mining, for purposes of considering the proposed gravel mining's consistency with Section 30233(a)(5) and 30240, the Commission has generally applied the environmentally sensitive area designation only to the portions of the river containing live flow, whereas mining would occur during the dry season in the mid-summer to early fall.

Not all portions of the river containing live flow during the summer-early fall gravel mining season necessarily qualify as environmentally sensitive. The edges of the shallow flat-water areas in the lower Eel and lower Van Duzen Rivers do not support threatened migratory salmonid fish species during the summer to early fall gravel extraction season. Unlike other portions of the rivers and other North Coast rivers, the lower Eel and lower Van Duzen do not provide spawning habitat for the threatened salmonid species. Instead, salmon pass through the

area during migration periods to spawn further upstream. The migration periods occur at other times of the year when gravel extraction is not occurring. However, salmonids are found in the lower Eel and lower Van Duzen Rivers at most times of the year, including in limited numbers during the summer to early fall gravel extraction period, but they do not frequent all parts of the channel. During the summer and early fall, water temperatures in the lower Eel and lower Van Duzen Rivers are considered stressful for salmonids. As water temperatures increase, the amount of dissolved oxygen (DO) in the water decreases. Surveys conducted under the Corps' LOP procedure have shown that salmonid habitat areas are located in riffles and at the head of pools, where DO and food concentrations are highest. Shallow flat-waters and the lower reaches of long pools are avoided by salmonids since they do not have the necessary oxygen and food concentrations, lack cover, and do not provide relief from higher water temperatures. Therefore, the Commission finds that the edges of the shallow flat-water areas of the channel during the summer and early fall are not environmentally sensitive, as they do not provide salmonid habitat. This finding should not be construed as indicating that other shallow flat-waters of other coastal rivers or even other parts of the Eel or Van Duzen Rivers during the summer are similarly not environmentally sensitive. The specific use of the lower Eel and lower Van Duzen Rivers by salmon species has been surveyed pursuant to the Corps' LOP process and the consultation process with NOAA-Fisheries and has been documented in Biological Opinions prepared for the gravel operations. The surveys provide a basis for demonstrating that salmonids do not inhabit the shallow flat-waters during the summer months. The results cannot be generalized to other river systems where no such surveys have occurred. In addition, unlike other rivers, the lower Eel and the lower Van Duzen are not considered by NOAA-Fisheries to provide salmonid spawning habitat (only limited rearing habitat, but primarily just migratory habitat).

Based on discussions with NOAA-Fisheries, gravel mining activities undertaken directly within the flowing river channels in the form of trenching have the potential to have both direct and indirect significantly adverse impacts on threatened salmonid species through: (a) water quality degradation associated with increased turbidity and sedimentation of coastal waters; (b) fish injuries and or deaths from contact with excavation equipment; (c) fish injuries, deaths, and changes in behavior due to flow diversions; (d) decreased invertebrate production associated with removal and/or degradation of habitat substrate; and (e) increased susceptibility to predation due to tendency of migratory fish to concentrate in trench excavations that afford little or no cover from predators and poachers.

None of the proposed extraction techniques except "wet trenching" described below in Section IV-E specifically include extraction within the wetted channel. However, the applicants do propose to install seasonal crossings with abutments that could extend into shallow flat-water portions of the channel. The Biological Opinion prepared for the gravel extraction operations require that seasonal crossings be located where the temporary bridge structures would minimize the potential impact to sensitive salmonid habitats. The locations are determined based on identification by a fisheries biologist of where sensitive juvenile rearing, adult holding, and spawning habitats do not exist. NOAA-Fisheries and CHERT review the proposed bridge placement and determine where the seasonal bridge can be located to avoid salmonids. If the seasonal crossings cannot completely span the channel, the review process will direct the crossings to be located in shallow flat-water areas where salmonids are not present. The wider

flat-water portions of the channel are usually too wide to be feasibly crossed by a seasonal crossing without some portions of the crossing abutments extending into the side of the channel. Through the LOP–Biological Opinion process, mitigation measures have been developed for abutments that enter the wetted channel. During construction, the operator is required to contain abutment fill behind a containment structure such as a K-rail, sill logs, concrete blocks, or other suitable material to avoid filling any more of the channel than is absolutely necessary. The nearside below-water abutment fill is required to consist only of clean washed gravel to minimize downstream turbidity. Bridge construction, use, and removal shall occur prior to the arrival of the upstream migrating adult salmonids.

To ensure that mineral extraction and associated activities such as the installation of seasonal crossings within an ESHA as precluded by Coastal Act Sections 30233(a)(5) and 30240 do not occur, the Commission attaches (1) **Special Condition No. 1-(C)**, which prohibits excavation from occurring within the active wetted channel, where sensitive salmonid species could be present, except for wet trenching performed for restoration of instream salmonid habitat authorized pursuant to Section 30236 (see Section IV-E below), and (2) **Special condition 2-(C)**, which prohibits any portion of the seasonal crossing abutments from extending into the wetted channel, except in shallow flat-water areas, which are not considered environmentally sensitive during the time of year when gravel extraction operations are permitted to occur.

ii. Riparian Vegetation as Environmentally Sensitive Habitat

The Coastal Commission has previously determined in numerous permit actions that most forms of riparian vegetation are environmentally sensitive, as riparian zones serve many critical ecosystem functions. First, riparian areas contribute important organic debris that is transformed into nutrients, which support the riverine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. If these areas are altered or eliminated, the food supply and thus the abundance of fish is likely to be reduced. Additionally, riparian vegetation provides cover – both for shade and protection purposes – for aquatic species such as salmonids, which need cool water temperatures for growth and survival and protection from predators. Furthermore, riparian areas capture contaminants; by absorbing or filtering contaminated stormwater runoff, soils and vegetation in riparian areas can prevent pollutants from entering coastal waters. Moreover, healthy riparian areas support rich and diverse communities of animals, including birds, amphibians, and mammals, that depend on the areas for feeding, breeding, refuge, movement, and migration. Importantly, riparian areas serve as buffers for human health and safety. The riparian functions of water quality, soil stability, and the ability to absorb the impacts of large storm events and other natural, physical processes have direct benefits to humanity. Flooding and storm events can be exacerbated in the absence of riparian areas, which can serve as protective buffers. The Commission has consistently conditioned permits for development near riparian woodlands along streams and rivers to avoid disturbances of riparian areas where mature vegetation exists.

Some of the riparian scrub vegetation on the gravel bar is inundated during high flows and is often uprooted and scoured by river flows. The hydrodynamics of the river can cause the channel

itself to migrate over time, which in time can eliminate more stands of riparian scrub vegetation from one year to the next. As a result, much of the vegetation is young, having only grown a season or several seasons since the time of the last inundation severe enough to remove the plants previously growing there. Given that some of this riparian vegetation is very new and underdeveloped, it may not provide habitat values sufficient enough for the vegetation to be characterized as environmentally sensitive.

Under Section 30107.5 of the Coastal Act, as discussed above, any area supporting a plant, animal, or habitat is environmentally sensitive if the area meets two main criteria: (1) the plant, animal, or habitat is either rare or especially valuable because of its special nature or role in the ecosystem, and (2) the area could be easily disturbed or degraded by human activities and developments. The non-persistent, young riparian scrub-shrub areas clearly meet the second criterion in that gravel extraction on the river bar, such as proposed by the applicant, can quickly degrade or obliterate any of this habitat that extraction activities come into contact with. With regard to the first criterion, the young riparian scrub-shrub vegetation is not rare, as it generally does not contain rare or endangered species, and it can be found extensively on the many thousands of acres gravel bars along North Coast waterways. However, such vegetation can be considered especially valuable and therefore also meet the first criterion. In general, riparian vegetation must grow to a certain size and mass before it can begin to contribute significantly to the river ecosystem. A willow sprig growing in isolation that has just taken root and only rises a few feet out of the ground cannot serve the ecosystem functions discussed above such as contributing organic debris to the riverine food web (including supporting insects and other macro-invertebrates on which juvenile salmonids depend), capturing contaminants, providing forage area, nesting opportunities, or screening from predators for birds and wildlife, and other functions. As the plant grows taller, however, and as more riparian plants colonize the surrounding area, the developing vegetation begins to contribute more debris to the riverine food web, capture more contaminants, and provide more forage, nesting, and cover opportunities that make it especially valuable habitat and therefore an environmentally sensitive area.

There is no clear-cut answer to the question of just when in the growth and development of riparian scrub vegetation it reaches the point where it can be considered environmentally sensitive. In discussions with DFG staff, Commission staff has learned that no specific plant height and diameter, coverage, age, etc. thresholds exist for riparian vegetation that define when habitat value is sufficient to categorize the vegetation as environmentally sensitive. Part of the reason for this uncertainty is that there can be tremendous variability in the values of riparian vegetation of the same size from one location to the next depending on such factors as surrounding habitat and vegetation, surrounding land uses, river configuration, etc.

One existing standard that may provide useful guidance for determining when riparian scrub-shrub vegetation reaches the point of becoming environmentally sensitive is a standard imposed in the Corps' LOP Procedure. One restriction of the Corps' LOP for gravel mining on the Eel and Van Duzen Rivers concerns riparian vegetation. The restriction states as follows:

> "All riparian and woody vegetation and wetlands must be avoided to the maximum extent possible. Any riparian vegetation or wetland that is to be disturbed must be clearly

identified by mapping. Woody vegetation that is part of a contiguous 1/8-acre complex or is at least two inches in diameter breast height (DBH) must be mitigated if it is disturbed. Impacts to other woody vegetation must be described and a summary submitted to the Corps and CHERT with the gravel extraction plans. These impacts may require mitigation at the discretion of the Corps…"

The above-referenced Corps LOP restriction establishes a threshold for when impacts to riparian vegetation must be mitigated. The threshold is reached any time the riparian area that would be disturbed contains woody vegetation that is part of a contiguous 1/8-acre complex or is at least two inches (2") in diameter at breast height.

The Corps administers its permit program under Section 404 of the Clean Water Act (and the related Section 10 of the Rivers and Harbors Act of 1899). This administration does not limit mineral extraction in wetlands and open coastal waters to the same extent that Coastal Act Section 30233 does. As previously stated, Section 30233(a)(5) only allows the dredge or fill of wetlands and open coastal waters for mineral extraction if the mineral extraction occurs outside of environmentally sensitive areas. Although the Corps can allow mineral extraction in an environmentally sensitive area so long as mitigation is provided, the Commission cannot allow mineral extraction within an environmentally sensitive area at all. Thus, the Corps' purpose in determining when mitigation should be required is not the same as determining when riparian vegetation reaches a level of growth and development such that it should be considered environmentally sensitive.

By requiring mitigation whenever a riparian vegetation area that is to be disturbed contains woody vegetation that is part of a contiguous 1/8-acre complex or is at least 2 inches DBH, the Corps' LOP indicates that vegetation at this level already is providing habitat value. Otherwise, if the vegetation were not providing habitat value there would be no need for mitigation. Therefore, the Commission finds that the riparian vegetation must reach a form of growth and development where it provides important habitat values at some point before the Corps' threshold is reached. Acknowledgement of this fact is contained in the rest of the Corps' standards, which indicate that impacts to other woody vegetation not rising to the threshold level must also be described and submitted to the Corps and may require mitigation at the discretion of the Corps.

In discussions with DFG staff, Commission staff has discerned that under average growing conditions, a willow tree that is one inch (1") in DBH or part of a contiguous 1/16-acre complex would likely have survived for one growing season. Given that riparian vegetation is only becoming established during the first growing season, the vegetation may not provide significant habitat value at this point. On the other hand, vegetation that has survived more than one growing season would be established and likely to be used by wildlife. Therefore, the Commission finds that the riparian scrub-shrub vegetation should be characterized as an environmentally sensitive area when the vegetation contains woody vegetation that is part of a contiguous complex of 1/16-acre or larger or is one-inch or larger in DBH. In addition, by restricting extraction in vegetated areas that are essentially half as developed as the riparian vegetation for which mitigation is indicated under the Corps LOP, the Commission will

minimize the chances that any riparian vegetation providing significant habitat value will be disturbed by the proposed gravel extraction.

To ensure that mineral extraction proposed by the applicant each year is not performed within an area of environmentally sensitive riparian vegetation, thereby remaining an allowable use under Coastal Act Section 30233(a)(5), the Commission attaches **Special Condition Nos. 1-(E) & 1-(F)**, which further state that gravel extraction operations shall not disturb or remove any area of riparian vegetation growing on the river banks or on the gravel bar meeting either the aerial extent or plant girth criteria discussed above. Furthermore, the Commission attaches **Special Condition No. 3** which requires the applicant to submit annually for the review and approval of the Executive Director a final gravel extraction plan for the gravel extraction season that is consistent with the extraction limitations of Special Condition No. 1, which include the aforementioned limitations on extracting gravel in riparian areas.

iii. Exposed Gravel Bars as Environmentally Sensitive Habitat

Another form of environmentally sensitive areas that has the potential for occurrence on the exposed gravel bars is seasonal nesting habitat of the western snowy plover. As noted previously, the western snowy plover is a federally listed threatened species, which in the past has been observed nesting on gravel bars of the lower Eel and Van Duzen Rivers during April through early September. The FWS has overseen surveying on the gravel bars within the lower Eel and Van Duzen Rivers during the April to September breeding season window. Surveys conducted in 2008 indicate that a total of only four adult plovers constructed a total of two nests along the Eel River gravel bars with 100 percent of resulting chicks hatching out (see Exhibit B). The number of plovers sighted on gravel bars has declined over the past several years, though the overall number of plovers sighted on local beaches has increased.

As the habitat of rare and endangered species meets the definition of environmentally sensitive areas pursuant to Section 30107.5 of the Coastal Act, the Commission finds that any areas utilized by the western snowy plover during the nesting season when the birds are present constitute ESHA. Therefore, the Commission attaches **Special Condition No. 4**, which requires that gravel extraction operations avoid western snowy plover habitat by either not commencing until after the nesting season, or commencing only after a biologist approved by the FWS has surveyed the site and either found no plover nests, or has found some but will conduct daily surveys to ensure a 1,000-foot buffer area is maintained around the nests that are found. Furthermore, Special Condition No. 4 requires daily surveys prior to pre-extraction activities occurring in suitable habitat and restricts vehicle use to prevent adverse impacts to plovers. This condition is consistent with the recommendations of the FWS to avoid disturbance of the threatened bird species. The requirements of Special Condition No. 4 will ensure that mineral extractions will not impact western snowy plover habitat during the time of nesting, when such areas constitute environmentally sensitive areas.

b. Conclusion on Use Limitations of Coastal Act Section 30233(a)

Therefore, as conditioned herein, the proposed gravel extraction operation is consistent with the use limitations of Section 30233 of the Coastal Act on dredging in coastal water bodies, as the

proposed gravel extraction is for mineral extraction in areas that are not environmentally sensitive, consistent with Section 30233(a)(5).

(2) *Alternatives Analysis*

The second test set forth by the Commission's dredging and fill policies is that the proposed dredge or fill project must have no feasible less environmentally damaging alternative. In this case, the Commission has considered the various identified alternatives, and determines that there are no feasible less environmentally damaging alternatives to the project as conditioned by Special Condition Nos. 1-14. A total of four possible alternatives have been identified, including: (a) the "no project" alternative; (b) obtaining sand and gravel from quarry operations; (c) obtaining sand and gravel from terrace deposits in the Eel River floodplain; and (d) modifying the proposed project. As explained below, each of these alternatives is infeasible and/or more environmentally damaging than the proposed project as conditioned.

a. No Project Alternative

The no project alternative means that no gravel extraction would occur at the site. Without extraction from the site, an equivalent amount of sand and gravel materials would be obtained from other sources to meet regional demand for cement and concrete aggregate products for the construction of roads, buildings, and other development. Increasing production from other river bar extraction operations would have environmental impacts similar to or greater than the proposed project.

The proposed project is located in an area where gravel has historically been accumulated and mined. Mining in many other parts of the river where gravel does not accumulate could lead to changes in river geomorphology which, in turn, could cause a variety of adverse impacts such as increased sedimentation, the undermining of bridge supports, and bank erosion resulting in the loss of environmentally sensitive riparian habitat areas and/or adjacent agricultural lands.

As discussed below, obtaining additional sand and gravel terrace deposits from the valley floors of local rivers would also create adverse environmental impacts similar to or greater than the proposed project. The Commission therefore finds that the "no project" alternative is not a feasible less environmentally damaging alternative to the project as conditioned.

b. Obtaining Sand and Gravel from Quarry Operations

Excavation from the river could be avoided if an equivalent amount of sand and gravel could be obtained from upland quarries. As discussed in the Final Programmatic EIR on Gravel Removal from the Lower Eel River certified by Humboldt County in 1992, there are few quarries in the vicinity where it would be economically feasible to obtain material of sufficient quality and quantity to that available at the project site. The substrate of nearby areas of Humboldt County is composed mostly of the Franciscan formation, which is comprised of large masses of greywacke and sandstone interspersed with less competent (for construction applications) clay and silt materials. This composition of material generally does not lend itself to quarrying. The quarries that are found in the region are generally located in remote areas with limited water supplies and

where no nearby processing facilities are available. The unprocessed materials would need to be transported greater distances resulting in increased traffic, air quality, and greenhouse gas emissions impacts. The Commission therefore finds that substituting gravel extracted from quarry operations is not a feasible less environmentally damaging alternative to the project as conditioned.

c. Obtaining Sand and Gravel from Terrace Deposits

Excavation from the river could be avoided if an equivalent amount of sand and gravel products could similarly be obtained from terrace deposits in the floodplain of the lower Eel, Van Duzen, or Mad Rivers. The floors of these river valleys are underlain by substantial amounts of gravel deposited over thousands of years and provide upland rock quarries. However, commencing gravel extraction from these terrace deposits would create its own adverse environmental impacts. Much of the undeveloped valley floor of each of these rivers is developed with agricultural and timber production uses. Converting productive coastal agricultural lands or forest lands to gravel extraction or other uses would not be consistent with Coastal Act policies, which call for the maintenance of lands suitable for agriculture and timber production. Most of the remaining undeveloped areas of these river valleys are currently covered with riparian habitat and other environmentally sensitive habitats. Extracting gravel from such areas would result in far more impacts to environmentally sensitive habitat than extraction at the project site as conditioned by the permit to avoid all riparian habitat. Therefore, the Commission finds that substituting gravel extracted from terrace deposits in local river valleys is not a feasible less environmentally damaging alternative to the proposed project as conditioned.

d. Modifying the Proposed Project as Conditioned

Various modifications to the project as proposed and conditioned could be made in an attempt to reduce the environmental effects. One such modification would be to mine in different locations at the project site. However, this modification would not result in less significant adverse impacts than the project as conditioned under this permit. As discussed previously, the proposed project has been conditioned to restrict mining to areas that would avoid significant adverse impacts to coastal resources. Therefore, modifying the proposed gravel extraction project to require mining in different locations at the project site could result in greater impacts to coastal resources and would not be a feasible less environmentally damaging alternative. No other feasible modification to the proposed extraction scheme has been identified. Therefore, the Commission finds that modifying the proposed gravel extraction project as conditioned is not a feasible less environmentally damaging alternative.

Conclusion

For all of the reasons discussed above the Commission finds that there is no less environmentally damaging feasible alternative to the development as conditioned, as required by Section 30233(a).

(3) *Feasible Mitigation Measures*

The third test set forth by the dredging and fill policy of the Coastal Act is whether feasible mitigation measures have been provided to minimize the adverse environmental impacts of the proposed project.

Depending on the manner in which the gravel operation is conducted, the portions of the proposed project to be conducted below the ordinary high water mark could have five potentially significant adverse effects on the natural environment of the lower Eel River. These impacts include: (a) direct and indirect impacts on fisheries; (b) alteration of the riverbed and increased bank erosion; (c) impacts on environmentally sensitive riparian vegetation; (d) impacts on western snowy plover; and (e) impacts on water quality. The potential impacts and their mitigation are discussed in the following sections:

a. Impacts on Fisheries

As noted previously, the Eel River and its tributaries (including the Van Duzen River) are ranked among the most significant anadromous fisheries in Northern California and include coho salmon, Chinook salmon, and steelhead trout, all federally listed threatened species under the federal Endangered Species Act. The project area and the lower Eel River are important for these anadromous fish as a migration route to and from upstream spawning grounds. In addition, the lower Eel and lower Van Duzen Rivers support summer rearing habitat for juvenile salmonids, especially steelhead yearlings and fall Chinook sub-yearlings, and holding areas for adult summer steelhead as well as spawning and nursery habitat for other marine fishes and many invertebrates.

Gravel extraction from river bars can adversely affect fisheries in a number of ways. Poorly designed extractions can alter the river channel or even cause capture of the channel into extraction areas in a manner that can lead to significant downstream erosion of stream banks and greater sedimentation of the river. In addition, NOAA-Fisheries has indicated that juvenile and adult salmonid stranding could occur as a result of certain extraction methodologies depending on how the methodology is implemented and the manner in which the extraction area is reclaimed following extraction. For example, the various on-bar and secondary channel trenching techniques could result in salmonid stranding once river waters rise following the end of the mining season and then subsequently drop during the following spring. The potential for salmonid stranding is minimized if the trenches are breached on their down-stream ends to provide the fish with a connection back into the river's main channel.

NOAA-Fisheries staff has also indicated that gravel mining has the potential to result in elevated turbidity levels and increased sedimentation. Fine sediments can become entrained in runoff from skimmed bar surfaces, as skimming typically exposes finer sediment that would be inundated during lower discharges. According to NOAA-Fisheries, increased sedimentation can adversely impact salmonid spawning habitat by filling pores spaces, which decreases hydraulic conductivity of the gravel, thus reducing the supply of oxygenated water to incubating eggs.

Construction and removal of channel crossings and the use of heavy equipment can adversely affect salmonids. Heavy equipment is required to operate in the wetted, low-flow channel to

construct and remove the crossings, which are typically placed at riffle locations. According to NOAA-Fisheries, death or injury of salmon through direct contact with such heavy equipment is likely during installation and removal of the crossing structures. In addition, Chinook salmon build redds and spawn in riffles, and the redds could be subject to a pulse of fine sediment during removal of the channel crossing in late fall. In addition, the operation of heavy equipment has the potential to result in disturbance to salmonids caused by noise and vibration in the extraction work area. Furthermore, stream crossings can also impact rearing salmon habitat by impeding or altering channel stream flow dynamics.

The impacts of gravel mining operations on sensitive fish species include more than just the direct gravel mining activities within or in proximity to the low flow channel or the individual impacts of a particular gravel mining operation at one site. Often of greater significance are the indirect effects of gravel mining on physical riverine form together with the cumulative adverse impacts on sensitive fish species from all of the various gravel mining operations occurring along the river. Accurately assessing significant adverse indirect and cumulative impacts of the various gravel mining operations on sensitive fish species and/or their habitat can be a difficult task for any one operator to perform.

An assessment of the significant adverse indirect and cumulative impacts of gravel mining operations permitted by the Corps along the lower Eel and lower Van Duzen Rivers on sensitive fish species does exist in the form of Biological Opinions issued by the NOAA-Fisheries. These Biological Opinions are issued as a result of formal consultations between the Corps and NOAA-Fisheries pursuant to Section 7 of the Federal Endangered Species Act.

As discussed previously in Finding IV-B, on June 17 2009, the Corps formally requested that NOAA-Fisheries prepare a BO to analyze the Corps LOP Procedure 2009 for proposed gravel extraction on Humboldt County rivers over the next five years (through 2013). NOAA-Fisheries anticipates issuing its BO by the end of August 2009.

Based on the biological information collected as part of the FESA Section 7 consultation, NOAA-Fisheries staff concludes that the proposed seasonal extraction of gravel over the next five years will not result in more than incidental take of threatened salmonid species and will not jeopardize their continued existence. In its July 27, 2009 draft preliminary conclusions and draft terms and conditions to minimize the amount or extent of "take" of threatened salmonids (Exhibit D), NOAA-Fisheries states that

> *"After reviewing the best available scientific and commercial information, the current status of SONCC coho salmon, CC Chinook salmon, NC steelhead, and their designated critical habitats, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the biological opinion of NMFS that gravel mining under LOP 2009 for the five-year permit period, ending December 31, 2013, is not likely to jeopardize the continued existence of threatened SONCC coho salmon, threatened NC steelhead, and threatened CC Chinook salmon, and is not likely to adversely modify or destroy SONCC coho salmon, CC Chinook salmon or NC steelhead designated critical habitat."*

The preliminary conclusion of NOAA-Fisheries notes that the measures instituted in 2004 have worked well, and the agency does not anticipate any significant changes the requirements and recommendations to the Corps that will be included in the final BO for LOP-2009, which is expected to be issued by late August of 2009.

To ensure that significant adverse impacts to salmonids from exceedance of incidental take of listed species does not occur during authorized mining operations, the Commission incorporates within the standards of **Special Condition Nos. 1 and 3** specific elements of proposed LOP Procedure 2009 that have been identified by NOAA-Fisheries as important for minimizing impacts to channel form and function, as well as protecting fish habitat.

As part of its review, NOAA-Fisheries has been reviewing the extraction methods and techniques described in LOP-2009 including, but not limited to, traditional skims, horseshoe skims, inboard skims, narrow skims, alcove extractions, wetland pits, wet trenches for salmonid habitat improvement purposes only, and dry-trenches. NOAA-Fisheries staff believes that although there is a preference for the non-skimming methods, all of the above methods would not adversely affect channel form and function in a manner that would be likely to jeopardize the continued existence of the sensitive fish species.

Therefore, to ensure that the mineral extraction proposed by the applicants use these proposed techniques to avoid degradation of the habitat of threatened salmonid species, the Commission includes within the requirements of **Special Condition No. 1-(B)** a limitation which requires use of only these extraction methods. This requirement will ensure that significant adverse disturbance of fish habitat from use of inappropriate extraction measures will be avoided.

Maintaining a head of the bar buffer, where gravel extraction would be precluded, is intended to provide protection of the natural stream flow steering effect provided by an undisturbed bar. According to the BO, head-of-bar buffers reduce the potential for geomorphic changes to the river from sediment extraction. The buffer helps to maintain bar slope and form, which in turn helps to guide stream flows that are effective at creating and maintaining habitats. Therefore, **Special Condition No. 1-(K)** precludes mining in the upper one-third of a gravel bar, consistent with the BO and Corps permit requirements.

The use of vertical offsets of the gravel extraction area from the low flow channel of the river that exists during the summer mining season will also help minimize sedimentation impacts on the river. The natural entrainment of sediment into river flows in the dry summer and early fall seasons is minimal in comparison with natural entrainment in winter months, when heavy rains entrain large quantities of sediment into river flows. Anadromous fish depend on the natural variation in sedimentation of river flows for spawning, migration, and other life-cycle changes. Artificially introducing large amounts of sediment at times of the year when natural entrainment would be low will adversely affect the anadromous fish as discussed above. Therefore, certain vertical offsets need to be maintained to prevent the sediment in lower skimmed surfaces of the bars from becoming entrained prior the beginning of significant movement of fine bed load material in the river. The general effect of skim floor elevations is that effects associated with sediment inputs are reduced as the elevation of the skim floor increases. The application

proposes to set minimum skim floor elevations to correspond to the water surface elevation of the flow that is exceeded 35 percent of the time in the historic record of daily average flows for rivers in Humboldt County. According to the Biological Opinion, the 35 percent exceedence flow is the flow where significant movement of fine bed load material begins in the rivers of Humboldt County. A skim floor at the 35 percent exceedence flow will provide confinement of the low flow channel until the stream is gaining in volume and naturally beginning to transport fine sediment. Therefore, **Special Condition No. 1-(J)** requires that any bar-skimming extractions that are proposed adjacent to the low flow channel shall have a minimum skim floor elevation at the elevation of the 35% exceedence flow.

In addition, gravel mining operations on the river bed need to cease before the rainy season to prevent significant adverse impacts to fisheries, as the runs of the various species of anadromous fish up and down the river increase in the fall with the rise in river water levels and remain at high levels through the early spring. In recent F&GC Section 1600 Streambed Alteration Agreements issued for gravel extraction at the project site, the Department of Fish and Game has limited gravel extraction operations to the dry season of June 1 through October 15 each year, which corresponds to the period when potential impacts to fisheries is lowest. The Department can extend the operations until November 1 if dry weather conditions prevail. The NOAA-Fisheries 2004 BO also allows for completion of gravel mining operations by October 15, with similar extensions to November 1 if possible. The 2009 BO, according to NOAA-Fisheries staff, would similarly allow for such extensions.

Therefore, the Commission attaches **Special Condition No. 5** that requires mining and all post-extraction bar grooming work and equipment removal be performed during the summer months and completed by October 15th to ensure no significant disturbance to anadromous fish. The Executive Director may approve either one or two week extensions of gravel extraction and reclamation activities beyond that date to as late as November 1st for all gravel extraction except for trenching within the wet channel in a configuration and extraction volume that is the minimum amount necessary for improving salmon habitat, which may extend to as late as November 15th if the permittee has submitted a request for an extension in writing, the Executive Director determines that dry weather conditions are forecast for the extension period, and any necessary extensions of time have been granted by the DFG, the Corps, and NOAA-Fisheries.

The 2004 BO also indicates that it is the opinion of NOAA-Fisheries that the proposed gravel mining under the project is not likely to destroy or adversely modify SONCC coho salmon designated critical habitat (Exhibit E). The 2009 BO anticipated by NOAA-Fisheries staff will similarly conclude that the proposed gravel mining operation is not likely to destroy or adversely modify such critical habitat. As discussed in more detail in Finding IV-O below, the Commission attaches **Special Condition No. 14**, which requires the applicant to submit, prior to permit issuance, final Biological Opinions in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. Any changes required by the agency shall be reported to the Executive Director and not incorporated into the project until the applicant obtains any necessary amendment to the coastal development permit.

Therefore, the Commission finds that as conditioned, the proposed gravel mining project would avoid significant cumulative adverse impacts on sensitive fish species consistent with the requirements of Sections 30231, 30233, and 30240 of the Coastal Act.

b. Impacts on River Morphology

As discussed above, a potential major impact of gravel mining operations is degradation of the riverbed and erosion of the riverbanks. Such impacts can occur if the amount of gravel extracted from a particular part of the river over time exceeds the amount of gravel deposited on the site through natural recruitment – the downstream movement of sand and gravel materials. Bed degradation and bank erosion can also result from the manner in which gravel is extracted. For example, if gravel bars are skimmed too close to the low-water surface or are left with a very shallow slope, at higher flow stages the river will tend to spread across the bar, reducing the overall depth of flow and resulting in rapid channel migration or instigation of a multi-channel "braided" configuration. This is also true of watercourse reaches where aggradation of materials is a problem. Such sites tend to trap gravel that would otherwise move downstream, potentially trapping or impeding fish migration up and down the river.

Although the applicants propose to extract an amount of gravel that is small relative to the overall permitted gravel mining activity along the Eel and Van Duzen Rivers, extraction without consideration of river morphology concerns could cause bed degradation and riverbank erosion.

As discussed above in Finding IV-B-2, in January of 2009 CHERT released a 10-year analysis of river channel cross sections taken at various sites along the Eel and Van Duzen Rivers near mining sites (including the lower, middle, and South Fork reaches of the Eel River and the lower Van Duzen River) (Exhibit A).[4] The report represents the longest-term geomorphic analysis completed to date examining the potential effects of gravel mining operations on river channel morphology. The report finds that "While certain methods of mining and locally excessive volumes can affect instream habitat in the short term, the river does not appear to suffer from long term or broad scale channel bed degradation from gravel mining. Furthermore, the CHERT adaptive management program authorized by the IMP specifically addresses preventing local over-extraction and avoids/minimizes mining methods that cause aquatic and riparian habitat damage" (page 2). The report concludes that "...we did not discern any large scale, persistent effects of Eel River gravel mining on channel thalweg elevations, mean bed elevations, or scour...Gravel mining effects in the Eel River are probably limited to short term, localized effects which the adaptive management program and federal and state oversight attempt to avoid or minimize. Refinement of project-scale minimization measures will continue to be a fundamental component of the adaptive management process, as will instream habitat improvement projects associated with gravel extraction operations" (page 24).

As discussed in the previous section, the proposed gravel extraction methods have been proposed to avoid significant adverse impacts to channel form and function. The determination of the

[4] County of Humboldt Extraction Review Team (CHERT). January 2009. *Analysis of Eel River Cross Sections at Gravel Mining Sites, 1997-2007*. Unpublished report prepared by Randy Klein, Doug Jager, Andre Lehre, and Bill Trush. 24 pp (Exhibit A).

NOAA-Fisheries Biological Opinion that gravel operations conducted in accordance with the LOP-2004 procedures will not result in more than an incidental take of listed species and will not likely threaten the continued existence of these species, and the opinion of NOAA-Fisheries staff that mining under the LOP-2009 would similarly not result in more than incidental take of listed species, is based in part on a finding that the extraction methods specified in LOP 2009 will be used to help preserve channel form and minimize bank and bar erosion that would degrade fishery habitat. **Special Condition No. 1** limits the use of gravel extraction techniques to those recommended by NOAA-Fisheries. In addition, the annual gravel extraction plans will be reviewed by CHERT in consultation with NOAA-Fisheries and the Corps to ensure that the particular methods proposed in any given year will minimize the chances of degradation of channel form based on conditions that exist at the time. **Special Condition No. 3** requires that the annual gravel extraction plan be submitted for the review and approval of the Executive Director and section (A)(4) of that condition requires that the submitted plan be consistent with the recommendations of CHERT. These requirements will ensure that disturbance of the active channel will be avoided.

c. Impacts on Environmentally Sensitive Riparian Vegetation

To prevent disturbances to riparian habitat, **Special Condition No. 1** includes the requirement that the mining be performed, on the portions of the gravel bar that do not contain or are in close proximity to riparian vegetation with environmentally sensitive habitat characteristics. Furthermore, the Commission attaches **Special Condition No. 6**, which reiterates that gravel extraction and processing operations shall not disturb or remove any area of environmentally sensitive vegetation growing on the gravel bar or river bank, and enumerates the threshold growth characteristics for when riparian vegetation becomes environmentally sensitive habitat. In this manner, disturbance to all of the environmentally sensitive riparian vegetation in the vicinity of the project will be avoided.

d. Impacts on Western Snowy Plover

The western snowy plover (*Charadrius alexandrinus nivosus*) was listed as a threatened species by the U.S. Fish and Wildlife Service (FWS) in 1993. A final rule for critical habitat for the species was published by the FWS in 2005. On the lower Eel River, designated critical habitat for the plover includes seasonally exposed gravel bars located between the mouth of the Eel River upstream to its confluence with the Van Duzen River. At the State level, the western snowy plover has been classified by the Department of Fish and Game as a "species of special concern" throughout all of California since 1978.

Snowy plovers were first documented nesting on gravel bars along the lower Eel River near Fernbridge in 1996, which prompted increased surveying and monitoring efforts to describe the seasonal and spatial use of the lower Eel River by plovers. Surveys have indicated that snowy plovers are distributed along the unvegetated portions of larger gravel bars from the mouth of the Eel River upstream to the mouth of the Van Duzen River and have been found on the gravel bars from early April until early September.

According to the western snowy plover Biological Assessment prepared for the gravel operators on the lower Eel River (Winzler & Kelly, March 9, 2009, Exhibit B), overall plover population numbers, nests, and fledged chicks along the lower Eel River gravel bars have been declining over the years. While in 2001 there were 39 birds and 39 nests detected on the lower Eel River, in 2008 there were only four birds and two nests on the lower Eel River. During the same time period however, plover nesting on local beaches increased. Although the reason for this apparent shift in habitat use from river bars to beaches is not understood, it is clear that some nest loss along the lower Eel has occurred due to river floods (high spring flows). Additionally, Colwell et al. (2005-2008) documented that recreational vehicle use of the gravel bars has directly contributed to 41 percent of Eel River plover nest failures over the past four years.

Because the plover is a federally listed threatened species, the responsibility for protecting the species rests with FWS. The Service's Arcata office coordinates with the Corps to provide guidance and regulatory review to gravel extraction operators on the lower Eel River. The FWS has set forth recommendations for plover protection based on current data. These recommendations have been incorporated as Special Condition No. 4 and are outlined below.

Western snowy plover adults, nests, and chicks are very cryptic, largely because of their ability to blend in with their surroundings as a defense strategy. All life stages of the plover are susceptible to death or injury by humans driving, operating equipment, and otherwise using occupied plover habitat. Disturbance from noise and activity associated with gravel extraction, vehicle use, and pre-gravel extraction activities may adversely affect western snowy plovers by altering their feeding and breeding behavior, reducing the suitability of nesting habitat, masking essential warning signs of predators, and attracting potential scavengers/predators.

According to the FWS, data from other portions of the western snowy plover's range suggest that activity and vehicle use in nesting and chick rearing habitat during low light and night conditions likely increases the risk of vehicle strikes to plovers, including adults. Activities associated with gravel extraction (including surveys for engineering, hydrology and biological resources) often need to be conducted prior to the initiation of gravel extraction activities. Because these pre-extraction activities require vehicular use and human presence in potential nest areas during the nest season, the potential exists to adversely affect the western snowy plover through direct harm or harassment.

To avoid disturbance to the plovers from vehicle use and pre-extraction activities, the Commission attaches **Special Condition No. 4**. Special Condition No. 4 requires the following: (a) For activities occurring prior to September 15, daily plover surveys shall be conducted by a biologist approved by the FWS prior to daily initiation of any pre-extraction activities that occur in suitable plover habitat; (b) If plovers or an active plover nest is within the area of planned operations or a 1,000-foot buffer area, activities within 1,000 feet of the plovers or nest shall be delayed until the nest has hatched and the plovers have moved to a distance greater than 1,000 feet away (hazing is not authorized); (c) Extraction activities within 1,000 feet of plover habitat may only occur if three consecutive days of FWS-approved plover surveys conducted by a FWS-approved biologist are completed with no detections of plovers or nests, and operators must ensure that extraction activities do not occur when plovers or nests are within 1,000 feet of the

extraction site; (d) All pre-extraction activities conducted in suitable nesting habitat prior to August 22 of each year shall be preceded by plover surveys completed each day that pre-extraction activities are planned to occur.

Due to the significant adverse impacts that vehicle use on the gravel bars has on the federally threatened western snowy plover, the FWS proposes including in its BO prepared for the Corps LOP-2009 terms and conditions aimed at minimizing vehicle impacts. The FWS is requiring that vehicle use in suitable plover habitat shall be minimized during the plover nesting season (March 1-September 15), and that access roads owned, controlled, or utilized by commercial gravel operators shall be gated and locked during the plover nesting season when no active extraction and hauling is occurring (including at night). This requirement has been included as part of **Special Condition No. 4**, which specifies various measures to protect western snowy plover in the project area, as discussed above. The condition imposed by the Commission requires that the gates be designed to block vehicular access only and shall allow for pedestrian access, unless the applicant obtains additional authorization from the Commission to block pedestrian access. This condition will keep the vehicles that adversely affect the plovers off of the bars during the plover nesting season while protecting the pedestrian access to the shoreline consistent with the access policies of the Coastal Act. If the applicant desires to install gates that block pedestrian as well as vehicular access, the applicant must apply for additional authorization from the Commission so that the Commission can evaluate whether such gates in the specific location proposed would block the public's right of access inconsistent with the access policies of the Coastal Act.

The requirements of Special Condition No. 4 will ensure that gravel operations will not be performed in western snowy plover nesting sites or otherwise significantly disturb this threatened species. Therefore, as conditioned, the Commission finds that the project will avoid significant adverse impacts to the western snowy plover species.

e. Impacts on Water Quality

If properly managed, the proposed gravel operations should not significantly adversely affect the river's water quality. However, gravel extraction operations in close proximity to an open stream course could adversely impact water quality and ultimately the biological productivity and fisheries resources of the river. For example, pushing gravel materials or allowing sediment-laden water to drain from an excavation bucket into the river could degrade water quality and biological productivity by increasing the turbidity of the water. In addition, if not retained to allow settlement of suspended sediment, wash water from gravel processing activities could entrain soil materials which could result in sedimentation of coastal waters.

To prevent such occurrences, the Commission attaches Special Condition Nos. 1, 3, 6, and 7. **Special Condition No. 1** requires the applicant to perform the mining project on the exposed gravel bar, to avoid in-water activities that might result in sedimentation of the river. **Special Condition No. 3** requires that a runoff control plan be reviewed and approved by the Executive Director as part of the annual final gravel extraction plan ensuring that mining equipment be maintained and operated in such a manner as to not allow for release of petroleum products into

the river, that spill clean-up materials be available on the worksite, and that operators and sub-contractors undergo spill contingency training. **Special Condition No. 6** prohibits placing any material into the river during gravel extraction activities. **Special Condition No. 7** requires that all materials be promptly removed from the river after the cessation of mining and prior to the start of the rainy season.

Therefore, as conditioned, the project will not result in significant adverse impacts to coastal water quality.

Conclusion

The Commission finds, as conditioned herein, the proposed gravel extraction operation is consistent with the requirements of Section 30233 of the Coastal Act in that feasible mitigation measures have been provided to minimize adverse environmental effects. The gravel extraction limitations and performance standards imposed through Special Condition Nos. 1, 2, 3, and 5 are designed to prevent impacts to river morphology, riparian vegetation, threatened and endangered species, and water quality. Together with the requirements of Special Condition Nos. 6 and 7 to prohibit placement of material into the active channel and limit the extraction season, the project is conditioned to ensure that significant adverse impacts to the Eel River from the proposed gravel extraction operation will be avoided. Therefore, the proposed project as conditioned is consistent with the requirements of Sections 30231, 30233, and 30240 of the Coastal Act.

(4) ***Maintenance and Enhancement of Estuarine Habitat Values***

The fourth general limitation set by Sections 30231 and 30233 is that any proposed dredging or filling project in coastal waters must maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

As discussed in the section of this finding on mitigation, the conditions of the permit will ensure that the project will not have significant adverse impacts on fisheries resources, river morphology, environmentally sensitive riparian vegetation, western snowy plover, or water quality. By avoiding impacts to coastal resources, the Commission finds that the project will maintain the biological productivity and functional capacity of the habitat consistent with the requirements of Sections 30231, 30233, and 30240 of the Coastal Act.

Conclusion

The Commission thus finds that the project is an allowable use, that there is no feasible less environmentally damaging alternative, that no additional mitigation is required for the impacts associated with the dredging of coastal waters, and that riverine habitat values will be maintained or enhanced. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Sections 30231 and 30233 of the Coastal Act.

E. Development Within Coastal Rivers and Streams

Section 30236 of the Coastal Act states 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.

As discussed above, the wet trenching technique, which may be proposed in an annual gravel extraction plan if deemed appropriate by NOAA-Fisheries and DFG, would involve excavation within salmonid ESHA habitat, and thus would not be permissible under Section 30233(a)(5). However, Section 30236 allows substantial alteration of rivers and streams where the primary function is for the improvement of fish habitat. To the extent that use of the wet trenching technique is primarily for the improvement of fish habitat, the proposed wet trenching excavation is consistent with the use limitations of Section 30236, as explained below.

Trenching can be an effective tool for the enhancement of salmonid migration corridors and in providing cold water refuge adjacent to the wetted channel. NOAA-Fisheries has encouraged the use of trenching on the lower Eel and lower Van Duzen Rivers to assist salmonid migration through desiccated bar areas. Trenching adjacent to the low-flow channel also can provide adult holding habitat. A migration trench is essentially a designed channel mimicking a natural channel, which permits salmonid migration and water flow through a desiccated reach of a stream. Meander and slope may be designed into the channel to control velocity and provide resting areas for fish. Large woody debris also may be placed within the channel to provide cover and refuge for salmonids during upstream migration. Connection of the designed channel at the upstream end must be carefully planned so that the existing channel area is not significantly diminished and so that low, pulse flows do not encourage fish migration into channel areas that are incapable of providing cover and protection from predation or upstream passage. The upstream connection to the existing channel should most likely form a narrow riffle to prevent pool dewatering.

To ensure consistency with the limited purpose for which Section 30236 allows substantial alteration of rivers and streams, the Commission attaches **Special Condition No. 1-(B)**, which states that if wet trenching methods for salmonid habitat improvements are used, the trenching within the wet channel shall be limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat. Additionally, the Commission

attaches **Special Condition No 3-(A)-9**. This condition requires that, prior to the start of each year's gravel extraction operations, the applicant shall submit, for the Executive Director's review and approval, a final gravel extraction plan for that gravel extraction season that includes, among other things, evidence demonstrating that any proposed wet trenching for instream salmonid habitat restoration purposes is limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat, including but not limited to, written approval of the proposed wet trenching from NOAA-Fisheries and/or the Department of Fish and Game.

By limiting the trenching configuration and extraction volumes to the minimum amount necessary for improving salmonid habitat ensures that the primary function of the technique will be for the improvement of fish habitat, even though there may be incidental use of the gravel extracted for commercial purposes. This aspect of the mining is consistent with 30236, provided that the primary function of the extraction is for the improvement of fish habitat and the best mitigation measures feasible are incorporated into the project. Special Condition Nos. 1, 2, 3, 5, 6, and 7 discussed above require the best feasible mitigation measures be taken relating to extraction standards and limitations, methods of extraction, and the timing of extraction to minimize significant adverse environmental effects on coastal resources such as sensitive species and riparian vegetation.

Therefore, the Commission finds that as conditioned herein, the proposed wet trenching excavation is consistent with the requirements of Section 30236 of the Coastal Act, in that the primary function of the wet trenching is the improvement of fish habitat, and the best feasible mitigation measures have been provided to minimize or avoid significant adverse environmental effects.

F. Protection of Environmentally Sensitive Habitat Areas

Section 30240 of the Coastal Act states that environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and that development in areas near such sensitive habitat areas shall be sited and designed to prevent significant adverse impacts to these areas.

As discussed above in the section on permissible uses for dredging of wetlands and open coastal waters, the proposed project as conditioned will not adversely affect environmentally sensitive habitat either within or outside of the bank-full channel of the river. As conditioned, the proposed gravel mining project will not result in significant cumulative adverse impacts on sensitive fish species consistent with the requirements of Sections 30231 and 30233 of the Coastal Act. In addition, mining is limited by the provisions of **Special Condition No. 1**, which prohibit mining in those portions of the gravel bars where the riparian vegetation has reached a size and extent where there is an expectation of appreciable habitat values for nesting, forage and cover of wildlife being afforded. Furthermore, none of the riparian habitat along the banks of the river will be disturbed by the extraction operation itself. Existing haul roads through the riparian areas must be used to truck gravel from the bar to the stockpiling and processing facility. **Special Condition No. 6** requires that the proposed project not disturb or remove any of the

established riparian vegetation at the site and prohibits the cutting of new haul roads through the habitat. Moreover, to help prevent potential impacts to the habitat afforded to nesting snowy plovers, **Special Condition No. 4** requires that gravel extraction operations avoid western snowy plover habitat by, among other means, either not commencing until after the nesting season (after September 15), or commencing only after a biologist approved by the FWS has surveyed the site for three consecutive days and either found no plovers or nests, or has found some but will continue to conduct daily surveys to ensure a 1,000-foot buffer area is maintained around the nests that have been found. The FWS recommends this protocol to avoid disturbance of the western snowy plover. The requirements of Special Condition No. 4 will ensure that gravel operations will not be performed in western snowy plover nesting sites or otherwise disturb this threatened species.

Therefore, the Commission finds that the project as conditioned is consistent with Section 30240 of the Coastal Act, as the project will avoid significant adverse impacts to the environmentally sensitive habitat areas found on the site.

G. Protection of Visual Resources

Section 30251 of the Coastal Act provides in applicable part that the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall: (a) be sited and designed to protect views to and along the ocean and scenic coastal areas, and (b) be visually compatible with the character of surrounding areas.

The gravel extraction and gravel processing operations would be visible from Highway 101. However, these operations are seasonal activities that would occur for only approximately three months each year. In addition, many of the various gravel extraction operations occurring along the lower Eel and Van Duzen Rivers are similarly visible from Highway 101 and other public roads. The proposed project would not be any more prominent that the gravel extraction and processing activities that have occurred in the past. Therefore, the Commission finds that the proposed project is visually compatible with the character of the area, as gravel extraction operations here and in the vicinity have long been part of the view shed.

Stockpiling gravel adjacent to the highway could have the greatest impact on visual resources because the stockpiles could potentially become very tall and actually block views to a certain degree of the river from the Highway. However, as proposed by the applicant, the stockpiles would only be a maximum of 30 feet high. At that height, the stockpiles would not rise above the tops of the trees in the adjacent riparian woodland and thus would not block views of the river that are not already blocked by the woodland.

Therefore, the Commission finds that, as conditioned, the proposed project is consistent with the visual resource policies of Section 30251 of the Coastal Act, as the project is compatible with the visual character of the surrounding area and will not block views to and along the coast.

H. Public Access

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 30210, 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.

The project site is located between the first public road (Highway 101) and the sea (the lower Van Duzen River is considered to be an arm of the sea in this area). Public access to the river is available at the project site via a Caltrans right-of-way that runs parallel to Highway 101, on the west side of the highway, just north of the Van Duzen River Bridge. This right-of-way is shared by the applicant to gain access to the gravel extraction and stockpile operation (which is located on the site of a former Caltrans construction staging area). Public recreational use of the river in this particular location includes fishing (though the prime fishing season occurs in the spring or wet season when gravel extraction is not occurring), recreational boating (canoeing and kayaking), birdwatching, and other uses.

A metal gate was installed in recent years along the Caltrans right-of-way road without the benefit of a coastal development permit. Typically the gate is left open during daylight hours but closed in the late afternoon by the applicant's gravel operation. Closure of the unpermitted gate blocks vehicular access to the river, but public pedestrian access is unimpeded.

On June 12, 2008 the Commission approved CDP No. 1-07-038 for the Caltrans Alton Interchange Project. As part of the highway development, Caltrans proposed to remove the unauthorized gate and provide public vehicular access to the river through the Caltrans right-of-way to allow recreational boaters and fishermen to drive in and drop off boats and gear near the river, while a public parking area is to be established further north along the right-of-way (not adjacent to the river). The gate would remain during construction of the Alton Interchange Project to ensure that access could be managed in a way that would minimize conflicts between construction vehicles and equipment and public access users and ensure the safety of public access users, but removed upon completion of the interchange project. Special Condition No. 19 of CDP No. 1-07-038 required Caltrans to submit a Final Public Access Improvement Plan for the Executive Director's review and approval incorporating Caltrans' proposed public access improvements, and the subsequently approved plan provides that the unpermitted gate installed on the right-of-way river access road will be removed by October 15, 2010 (i.e., by the end of construction of the interchange project).

Currently the applicant relies on the unpermitted gate to control public access to the gravel operation area both for public safety purposes during the mining season (pursuant to the requirements of the federal Mine Safety and Health Administration, or MSHA) and to prevent vandalism and illegal trash dumping on the property at night and during periods when no workers are on site. Once Caltrans removes the unpermitted gate and completes the public access plan required by Special Condition No. 19 of CDP No. 1-07-038, the applicant will need to install security fencing and other public safety barriers on the applicant's own property as required by MSHA. Depending on how such measures are installed, they could conflict with the public access plan required by the Caltrans permit condition. Furthermore, such fencing and barriers could block existing trails and gravel roadways along the river bank and along the top of the river bank of the applicant's property that has been used by members of the public to gain access to the river. Therefore, the Commission attaches **Special Condition No. 15**. This condition requires that, prior to the installation of any public safety fencing or barriers, the permittee shall submit, for the Executive Director's review and approval, a final public safety plan for the proposed fencing or barriers. The plan shall demonstrate that (a) the public safety fencing or barriers shall be implemented in a manner that does not block public pedestrian access to the river along the existing Caltrans right-of-way adjacent to Highway 101 through the permittees' property along the river bank and along the top of the adjacent downstream river bluff, including at the location of the seasonal railroad crossing that is installed for gravel operations, unless the applicant obtains additional authorization from the Commission to block pedestrian access in these areas; and (b) the proposed fencing or barriers are required to comply with local, state, or federal safety laws. This condition will allow for necessary safety measures while protecting pedestrian access to the river consistent with the access policies of the Coastal Act. If the applicant desires to install safety fences or barriers that block pedestrian access to or along the river, the applicant must apply for additional authorization from the Commission so that the Commission can evaluate whether such fences or barriers in the specific locations proposed would block the public's right of access inconsistent with the access policies of the Coastal Act.

Recreational boaters are generally able to stop at seasonal crossings and portage around the crossings. However, during most of the gravel extraction seasons that are authorized by this permit, seasonal crossings may be put in place as early as July 1 and remain in place as late as October 15. During any given season, four of the six gravel operations on the lower Eel and lower Van Duzen rivers are likely to have seasonal crossings over the main channel of the rivers, some with multiple crossings. The cumulative impact on boating use of boaters having to stop and portage around the seasonal crossings of the various gravel operators on the lower Eel would be significant. Therefore, the Commission attaches **Special Condition No. 2** which will ensure that any truck crossings of the channel installed by the applicants will not block passage down the river. The condition requires that any proposed seasonal crossing of the low flow or secondary channels that can be expected to maintain flow year round shall be of the railroad flatcar variety rather than culverted fill crossings. The condition also requires that the flatcar crossing be installed in such a manner that a minimum 3-foot vertical clearance is maintained above the surface of the water so that canoes and kayaks are able to pass through such a crossing.

Due to the significant adverse impacts that vehicle use on the gravel bars has on the federally threatened western snowy plover, the FWS proposes including in its Biological Opinion prepared for the Corps LOP-2009 term and conditions aimed at minimizing vehicle impacts. The FWS is requiring that vehicle use in suitable plover habitat shall be minimized during the plover nesting season (March 1-September 15), and that access roads owned, controlled, or utilized by commercial gravel operators shall be gated and locked during the plover nesting season when no active extraction and hauling is occurring (including at night). This requirement has been included as part of **Special Condition No. 4**, which specifies various measures to protect western snowy plover in the project area, as discussed in Findings IV-D and IV-E above. It is not yet clear what if any additional gates may be required to be installed and locked at night to comply with this requirement for snowy plover protection. The condition imposed by the Commission requires that any gates installed be designed to block vehicular access only and shall allow for pedestrian access, unless the applicant obtains additional authorization from the Commission to block pedestrian access. This condition will keep the vehicles that adversely affect the plovers off of the bars during the plover nesting season while protecting pedestrian access to the river consistent with the access policies of the Coastal Act. If the applicant desires to install gates that block pedestrian as well as vehicular access, the applicant must apply for additional authorization from the Commission so that the Commission can evaluate whether such gates in the specific location proposed would block the public's right of access inconsistent with the access policies of the Coastal Act.

As explained above, the project as conditioned will have no significant adverse effect on public access. Therefore, the Commission finds that the project, as proposed without new public access, is consistent with the public access policies of the Coastal Act.

I. State Lands Commission Review

The project is located in the bed of the Eel River, a navigable river, between the ordinary high water marks. As such, the State of California may hold a public trust easement and other property interests at the site. Any such property interest would be administered by the State Lands Commission. To assure that the applicant has a sufficient legal property interest in the site to carryout the project and to comply with the terms and conditions of this permit, the Commission attaches **Special Condition No. 8** which requires that the applicant submit evidence that any necessary authorization from the State Lands Commission has been obtained prior to issuance of the permit.

J. CHERT Review

Pursuant to the Corps LOP permit procedures and the County of Humboldt's surface mining regulations, in-stream gravel mining projects within Humboldt County are required to be assessed for potential direct and cumulative to riverine resources by an independent scientific panel known as the County of Humboldt Extraction Review Team, or "CHERT." The CHERT in turn makes specific recommendations to the County and the Corps with regard to appropriate actions that should be taken on the mining applications. Often during the review of mining plans for the upcoming mining season, CHERT may make constructive recommendations to the applicants in the interest of designing a mining proposal that will avoid and/or minimize

significant adverse impacts to river resources. These recommendations may involve changes to the amount of gravel proposed to be extracted, the specific location(s) of the extraction area(s), or the proposed mining techniques. To ensure that the project recommended for approval by CHERT is the same project that was reviewed under this permit by the Commission, and to ensure that extraction does not exceed the extraction limits established under Special Condition No. 1, the Commission attaches **Special Condition No. 3-A-(4)**, which requires the applicant to annually submit to the Executive Director for written review and approval a copy of the pre-extraction mining plan review comments obtained from the CHERT as part of the final gravel extraction plan as well as evidence that the final gravel extraction plan is consistent with all recommendations of CHERT and all terms and conditions of this permit.

K. Department of Fish and Game Review

The project requires an annual Section 1603 Streambed Alteration Agreement from the Department of Fish and Game. Therefore, to ensure that the project area reviewed by the DFG each year is the same project area that was reviewed under this permit by the Commission, and to ensure that extraction does not exceed the extraction limits established under Special Condition No. 1, the Commission attaches **Special Condition No. 9**, which requires that prior to commencing each year's gravel operations, the applicant submit a copy of the Section 1603 agreement approved by the DFG. The condition requires that any project changes resulting from the agency's approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit.

L. Regional Water Quality Control Board Review

The project requires a Water Quality Certification (WQC) from the North Coast Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act. The Board issued WQC Order No. R1-2005-0011 (dated June 21, 2005) for gravel extraction activities during the 2009 extraction season, but the certification expires on June 21, 2010. Therefore, to ensure that the necessary approvals from the Board are in place for the 2010 through 2013 extraction seasons proposed to be covered by this coastal development permit, and to ensure that extraction does not exceed the extraction limits established under Special Condition No. 1, the Commission attaches **Special Condition No. 10**, which requires that prior to commencing each year's gravel operations, the applicant submit a copy of a WQC approved by the Board. The condition requires that any project changes resulting from the agency's approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit.

M. Annual U.S. Army Corps of Engineers Review

The project is within and adjacent to a navigable waterway and is subject to the authority of the U.S. Army Corps of Engineers under Section 404 of the Federal Water Pollution Control Act (33 USC 1251 et seq.) and Section 10 of the Rivers and Harbors Act (33 USC 403). Pursuant to the Federal Coastal Management Act, any approval granted by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. To ensure that the project ultimately approved by the Corps each season is the same as the project specified in the annual gravel extraction plan approved by the Executive Director

pursuant to Special Condition No. 1 herein, the Commission attaches **Special Condition No. 11**, which requires the applicant, prior to commencing gravel extraction operations each year, to demonstrate that all necessary approvals from the Corps for the approved gravel extraction, as conditioned herein, have been obtained. The condition requires that any project changes resulting from the agency's approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit. The Commission also attaches **Special Condition No. 12** to specify a permit termination date of November 1, 2013, which corresponds to the project termination date listed in the Endangered Species Act Section 7 consultation submitted by the Corps to NOAA-Fisheries.

N. Final U.S. Army Corps of Engineers LOP-2009 Approval

As discussed above, the project requires review and authorization by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. The Corps is permitting the proposed gravel operations under its Letter of Permission Procedure 2009 (LOP-2009). To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches **Special Condition No. 13**, which requires the applicant to submit to the Executive Director evidence of the Corps' approval of the project prior to commencement of construction. The condition requires that any project changes resulting from the Corps' approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit.

O. Final Biological Opinions

The project requires final Biological Opinions being issued by the NOAA-Fisheries and the U.S. Fish and Wildlife Service. As discussed above, the Biological Opinions are being prepared as a result of formal consultations between the U.S. Army Corps of Engineers (Corps) and NOAA-Fisheries and FWS pursuant to Section 7 of the Federal Endangered Species Act. The NOAA-Fisheries BO is expected to be finalized by the end of August 2009, and the FWS BO is expected to be finalized by the end of August 2009. To ensure that the project ultimately approved by the agencies is the same as the project authorized herein, the Commission attaches **Special Condition No. 14**, which requires the applicant to submit, prior to permit issuance, final Biological Opinions in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. The applicant shall inform the Executive Director of any changes to the project required by the agencies. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

P. Alleged Violation

The applicant maintains an existing stockpile of gravel west of the Caltrans right-of-way along Highway 101. Coastal Development Permit No. 1-04-045 authorized the stockpiling of gravel in that area in a mass not to exceed 15 feet high, 220 feet wide, and 535-feet long. The existing stockpile is approximately 30 feet high, exceeding the 15-foot height limitation authorized by CDP 1-04-045. In addition, Special Condition No. 6 of CDP 1-04-045 states that the gravel operations authorized by the permit terminated on November 1, 2008. To bring the stockpile into compliance with coastal development permit requirements, the applicant has applied for, and CDP No. 1-09-021 authorizes, the continued use of the stockpile as a 220-foot-wide, 535-foot-long mass not to exceed 30 feet in height

Although certain development has allegedly taken place at the project site without the benefit of a coastal development permit (including, but not limited to, the continued stockpiling of gravel since November 1, 2008 without coastal development permit authorization), consideration of the application by the Commission has been based solely upon the proposed project's conformance with the Chapter 3 public access policies of the Coastal Act. Approval of this permit does not constitute a waiver of any legal action with regard to the alleged violations nor does it constitute an admission as to the legality of any development undertaken on the subject site without a coastal development permit.

Q. California Environmental Quality Act

The County of Humboldt, as the lead agency, adopted a Programmatic Environmental Impact Report (PEIR) to describe and analyze the potential environmental effects resulting from the gravel extraction operations in the lower Eel and lower Van Duzen Rivers in 1992.

Section 13906 of the California Code of Regulation requires Coastal Commission approval of a coastal development permit application to be supported by findings showing that the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Public Resources Code Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would significantly lessen any significant effect that the activity may have on the environment.

The Commission incorporates its findings on conformity with Coastal Act policies at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed herein in the findings addressing the consistency of the proposed project with the Coastal Act, the proposed project has been conditioned in order to be found consistent with the policies of the Coastal Act. As specifically discussed in these above findings which are hereby incorporated by reference, mitigation measures which will minimize all adverse environmental impact have been required. These required mitigation measures include requirements that limit extraction to avoid environmentally sensitive habitat areas, rare and endangered species, migratory fish, and extractions that could lead to changes in river morphology. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse

impact that the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

V. EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. Aerial Photo of Gravel Operations on the Lower Eel and Van Duzen Rivers

Note: The following six exhibits are included in a combined exhibit packet prepared for CDP Application Nos. 1-09-014 and 1-09-021, attached separately.

A. CHERT Analysis of Eel River Cross Sections at Gravel Mining Sites, 1997-2007
B. Western Snowy Plover Biological Assessment (Winzler & Kelly, March 12, 2009)
C. Salmonid Biological Assessment (Alice Berg & Associates, May 6, 2009)
D. NOAA-Fisheries Preliminary Conclusions and Draft Terms & Conditions
E. August 13, 2004 NOAA-Fisheries Biological Opinion for gravel operations on the lower Eel River during the 2004-2008 gravel extraction seasons
F. September 6, 2005 Fish and Wildlife Service Biological Opinion for gravel operations on the lower Eel River during the 2005-2008 gravel extraction seasons

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.

APPENDIX B

GRAVEL EXTRACTION METHODS DESCRIBED IN THE U.S. ARMY CORPS OF ENGINEERS LETTER OF PERMISSION PROCEDURE (LOP) 2009

Skims:

- **Traditional Skim**: Skimming or scalping of gravel from exposed gravel bars involves the use of excavating machinery to remove the uppermost layer of gravel. Historically, skimming may have been performed as far down as the water surface. However, to be eligible for authorization under LOP 2009, skimming shall be performed above the 35% exceedence flow water surface elevation of the low flow channel, and downstream from the Head of Bar Buffer (described below), and on exposed (dry) bars within the active channel that is typically inundated annually. After skimming the bar must be graded in order to be left smooth, free of depressions, and with a slope downstream and/or to the low-flow channel. Traditional skims are typically laid out as curvilinear benches along the outside of gravel bars and are typically no wider than about half the exposed bar surface width.
- **Horseshoe Skim**: This method would harvest gravel from the downstream two-thirds of gravel bars. A lateral edge-of water buffer is maintained along the low flow channel. The upper third of the bar will be left in an undisturbed state as an upper bar buffer. The finished grade of the extraction area will have a downstream gradient equal to the river and a flat cross slope and will be no lower than the 35% exceedence flow elevation. Cut-slopes will be left at a 2:1 (horizontal:vertical) slope except along the upstream side at the head-of-bar buffer where a 6:1 slope will be established. There will be at least a 15-foot offset buffer from the bank. The extraction surface shall daylight along the downstream one-third to one-fifth of the bar to facilitate drainage following high runoff events. The horizontal and vertical offsets are intended to remove the excavation area away from the low-flow channel and minimize effects on listed salmonid species by disconnecting the mined surface from frequent flow inundation. Due to less frequent flow inundation, horseshoe-shaped skims may take larger flow events to replenish than traditional skim designs, depending on the unaltered bar height between the excavation and the stream.
- **Inboard Skim**: This method is similar to the horseshoe except that it maintains a wider horizontal offset from the low flow channel where warranted. These areas would be excavated to a depth no lower than the water surface elevation offset, with a 0–0.5% cross slope, steeper (1:1) slopes on the sides, and gentle (10:1) slopes at the head of the excavation. The horizontal and vertical offsets are intended to remove the excavation area away from zones of frequent flow inundation. There would be a 15-foot offset buffer from the bank. The excavation may extend into the upper one-third of the head-of-bar buffer if sufficient rationale is provided to show that protection of the upstream riffle would be maintained.
- **Narrow Skims**: The narrow skims would be no more than one-third of the bar width, follow the shape of the bar feature, maintain the point of maximum height of the bar, and

trend in the general direction of streamflow. These skims would maintain a vertical offset corresponding to the discharge at 35% exceedence level. Finished skims would be free draining and slope either toward the low-flow channel or in a downstream direction. Furthermore, these skims would avoid the head of the bar, defined as the upstream one-third of the exposed bar surface. This buffer may be decreased on a case-by-case basis provided the extraction area narrows, tapering smoothly to a point and remains below the upstream cross-over riffle.

- Narrow skims along the lower two miles of the Van Duzen River shall be limited to a maximum width of 90 feet across the top of the extraction. This width is designed to contain average peak flows of 1,000 cfs commonly seen during the early period of adult salmonid migration in November and December. The minimum skim floor shall be equal to the water surface elevation of the 35% exceedence flow.
- Narrow skims that are adjacent to the low flow channel, but are not adjacent to entire riffle areas, will also be considered for the lower Eel River. These narrow skims may have a minimum vertical offset of 2 feet above the water surface elevation of the low flow channel. Narrow skim widths will be determined on a site specific basis, but narrow skims must: (1) not increase channel braiding; (2) not lower the elevation at which flows enter secondary channels; (3) avoid the higher portions of the annually inundated bar surface; and (4) must promote channel confinement.

- **Secondary Channel Skims**: These extractions are elongate, shallow skims in the area of dry, secondary channels, designed to be free-draining and open at either end so as to not impede fish passage/migration and to prevent any potential fish stranding. The upstream riffle crest, or elevation control of secondary channels shall not be affected by extraction proposals. The skim floor of these excavations shall be set at the 35% exceedence flow elevation. Secondary channel skims, with proper design, have a restorative function, as described in the section below.

Head of Bar Buffer:

The upstream end of the bar (head of bar) shall not be mined or otherwise altered by the proposed action. The minimum head of the bar shall be defined as that portion of the bar that extends from at least the upper third of the bar to the upstream end of the bar that is exposed at summer low flow. Therefore, the upstream one-third portion of the bar as exposed at summer low flow is provided as the minimum head of bar buffer. The intent of the head of bar buffer is to provide protection of the natural stream flow steering effect provided by an undisturbed bar. Variances to the minimum head of bar buffer may be considered on a case-by-case basis (e.g., for narrow skims) if the proposed alternative provides equal or greater protection. The specific nature of the proposed variance must be described, along with sufficient biological, hydrological, and sediment transport rationale to support the recommended alternative. Modifications in the default head-of-bar buffer dimension shall, at a minimum, provide for protection of the adjacent cross-over riffle by limiting extraction to the area downstream of the entire riffle.

Alcove:

Alcove extractions are located on the downstream end of gravel bars, where naturally occurring alcoves form and may provide velocity refuge for juvenile salmonids during high flows, and potential thermal refuge for juvenile salmonids during the summer season. Alcove extractions are irregularly shaped to avoid disturbance of riparian vegetation, and are open to the low flow channel on the downstream end to avoid stranding salmonids. Alcoves are extracted to a depth either above or below the water table, and are small in area and volume extracted, relative to other extraction methods.

Exposed Bar

The bar area subject to annual flow inundation and active sediment transport and replenishment cycles, lacking transitional vegetation colonization, grasses and shrubs. Area may contain sparse patches of widely scattered individual woody plants.

Wetland pits

Wetland pits are irregularly shaped excavations (to avoid excavating riparian vegetation) located on the 2-to-5 year floodplain surface. An excavator digs out the sediment below the water table and leaves the sides of the pit sloped. Wetland pits allow for gravel extraction away from frequently inundated gravel bar surfaces, and most salmonid habitat features. Wetland pits will only fill with sediment during high flow events, on the order of every 2-to-5 years, and typically over a multi-year period. Wetland pits must have vegetation, either existing or planted, around their perimeter, and must contain some type of cover elements, such as woody debris.

Trenching

- **Wet Trenching**: The wet trenching method of extraction is used to excavate sediment directly from portions of the channel, after the stream flow has been diverted to a secondary channel location. The wet trenching method of extraction would only be used when there is the additional objective of improving instream salmonid habitat by the limited use of sediment removal, and where the diversion of the low flow channel into a secondary channel that provides salmonid habitat is possible.

- **Dry Trenching**: The dry trenching method of extraction may be both shallow and stay above the water table, or deep and extend below the water table. The dry trenching method involves gravel bar excavation on the exposed (dry) bar surface. A gravel berm may be constructed with materials on site to isolate the trench from the channel, or the trench may be far enough from the low flow channel to not require a berm to separate it. Material is then excavated from inside the trench to a depth that is limited by the reach of the equipment, and by the annual, site specific recommendations provided by CHERT. After excavation, and when the sediment in the trench has settled, the berm is breached on the downstream end, and the trench is connected to the river to prevent fish stranding. Alternatively, the berm may be constructed to be naturally breached during normal fall flows.