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Staff:	Jim Baskin
Staff Report:	August 28, 2003
Hearing Date:	September 12, 2003
Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.:	1-03-015
APPLICANT:	Humboldt County Department of Public Works
PROJECT LOCATION:	At the Worswick gravel bar along the east side of the Eel River, at 1300 Fernbridge Drive, next to Highway 101, south of Fernbridge, in Humboldt County. APN 200-321-11.
PROJECT DESCRIPTION:	Seasonally extract up to 25,000 cubic yards of sand and gravel during the 2003-07 gravel extraction seasons (between September 15 and October 15) and process aggregate materials at an adjoining upland site.
LAND USE PLAN DESIGNATION:	Natural Resources (NR).
ZONING DESIGNATION:	Natural Resources, with Streams and Riparian Corridors Protection combining zone (NR/R).
LOCAL APPROVALS RECEIVED:	Humboldt County: (1) Vested Rights Determination (SP 73-87) issued Feb. 1,

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1987 for the annual removal of up to 200,000 cubic yards of gravel; (2) Reclamation Plan Approval No. RP-05-94; and (3) Approval of Financial Assurances guaranteeing reclamation of the site; (4) Final Program EIR on Gravel Removal from the Lower Eel River.

OTHER APPROVALS REQUIRED:

State Lands Commission; California Department of Fish & Game F&GC Section 1603 Streambed Alteration Agreement; U.S. Army Corps of Engineers Letter of Permission

SUBSTANTIVE FILE DOCUMENTS:

Humboldt County LCP; Humboldt County Program Environmental Impact Report on Gravel Removal from the Lower Eel River

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends that the Commission approve with conditions the coastal development permit for multi-year sand and gravel extraction, processing and stockpiling. The applicant proposes to extract gravel over the next five years, between September 15 and October 15, from a gravel bar along the lower Eel River from a site located approximately 1,500 feet upstream from the Highway 211 (Fernbridge Drive) crossing. The Commission previously granted a five-year permit to the applicant in 1996 (CDP-1-96-062).

Gravel mining along rivers is regulated by a variety of local, state, and federal agencies. In recent years, with the listing of various salmonid fish species as threatened under the state and federal Endangered Species Acts, considerable attention has been paid to changing mining protocols to best protect the threatened fish species from mining impacts. The development of a multi-year gravel mining permitting protocols by involved federal resource agencies has been on-going. Although information is currently being assessed by the National Marine Fisheries Service (NOAA Fisheries) in anticipation of re-issuance of the U.S. Army Corps of Engineers' (USACE) Letter of Permission (LOP) for gravel mining on the Eel River through 2007, data analysis for multi-year gravel mining has not been completed. In the interim, NOAA Fisheries is in the process of issuing an amended biological opinion addressing the Corps' second administrative extension of the current LOP through the 2003 calendar year. From consulting with NOAA Fisheries staff, Commission staff understand that as did its predecessor, the amended opinion will find that direct or cumulative impacts of gravel

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mining undertaken in 2003 subject to LOP standards would not result in more than incidental take to federally-listed endangered or threatened salmonid species. However, the opinion's scope will not support approval of mining activities beyond the immediate 2003 extraction season. Given the limited scope of the LOP, and in the absence of any other information that demonstrates that gravel extraction in future years beyond 2003 would not result in significant cumulative or individual adverse impacts to threatened or endangered fish species staff is unable to provide a recommendation to the Commission on whether gravel mining in future years beyond the 2003 extraction season is consistent with the Coastal Act.

The specific gravel extraction plan prepared by the applicant is currently being reviewed by the County of Humboldt Extraction Review Committee (CHERT), the local reviewing entity established by the County in coordination with development of the USCOE's LOP process for permitting gravel mining pursuant to Section 404 of the Clean Water Act. Under both the County of Humboldt's surface mining regulations and the LOP process, gravel mining entities are required to submit gravel pre-extraction plans for review and approval of the CHERT as a way of ensuring that gravel extraction each year does not exceed the annual replenishment of the site by the river, and that other potential resource impacts from gravel extraction are avoided.

The staff recommends a number of special conditions requiring measures to prevent disturbances to both riverine and terrestrial habitat. Because the bar-skimming method of gravel extraction contributes to alteration and migration of the river channel, and thereby adversely affects salmonid habitat, staff is recommending measures recommended by NOAA fisheries that require the use of alternative extraction methods that best preserves gravel bar height and form, and best preserves existing channel configurations. However, unlike the NOAA Fisheries recommendation, staff's recommendation expressly prohibits bar skimming as the specific circumstances where bar-skimming would not contribute to alteration and migration of the river channel and degradation of salmon habitat have not been identified.

In addition, to prevent disturbance of environmentally sensitive riparian vegetation areas, staff recommends that the Commission require that the gravel extraction activities be conditioned to avoid environmentally sensitive riparian habitat areas. However, in recognition of the fact that areas of the bar contain very young vegetation that has not developed to the point where it provides appreciable habitat value, and that the Coastal Act defines environmentally sensitive areas in such a way as to only include riparian vegetation with habitat value, the condition does not ban extraction in all areas containing vegetation. Instead, the conditions prohibit mining only in those areas 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. Such limitations will not be contained in either the adopted LOP or the final Biological Opinion. To the contrary, the LOP would allow extraction within riparian vegetation contingent upon mitigation being provided. The Coastal Act precludes the Commission from approving

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this option because of the prohibition within Section 30233(a)(6) on mining within an ESHA. For the same reason, the conditions recommended by staff would preclude mining within the wetted channel of the river even though the adopted LOP and final Biological Opinion may allow for this possibility.

In developing the recommended conditions, staff has considered the requirements imposed on the applicants by other regulatory agencies, including the USACE, the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NOAA Fisheries), the California Department of Fish and Game (CDFG), and the State Lands Commission (SLC).

As conditioned, staff believes that the proposed project is fully consistent with the Coastal Act.

STAFF NOTES:

1. Standard of Review

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

2. Permit Issuance Contingent on Finalization of NMFS Biological Opinion

Under the staff's recommendation, the issuance of any approved coastal development permit will be contingent upon a final Biological Opinion being issued by the National Marine Fisheries Service (NOAA Fisheries). This pending final opinion must be consistent with the anticipated conclusions of the preliminary biological opinion information relied on by staff in preparing this recommendation and that likewise provides support for the terms and conditions of this coastal development permit. To approve the project, the Commission must make findings under Sections 30231 and 30233 of the Coastal Act that the proposed gravel mining project for the 2003 extraction season would not result in significant cumulative adverse impacts on threatened salmon species in the lower Eel River. To make these findings, the staff report relies upon the anticipated conclusions of the Biological Opinion prepared by NOAA Fisheries on the effects on threatened salmon species of gravel mining projects in Humboldt County during the 2003 gravel mining season authorized by the Corp. No other comprehensive analysis of the cumulative effects of 2003 gravel mining in the lower Eel River on threatened salmon species is currently available for the Commission to rely upon.

The Biological Opinion is being prepared as a result of formal consultations between the U.S. Army Corps of Engineers (Corps) and NOAA Fisheries pursuant to Section 7 of the

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Federal Endangered Species Act. The Biological Opinion is anticipated to conclude that extraction of gravel during the summer months of 2003 will not result in more than incidental take of threatened salmonid species and will not jeopardize their continued existence provided that extraction operations are conducted in the manner prescribed in a set of conditions attached to the Biological Opinion. The Coastal Commission staff recommendation incorporates the anticipated conditions of the Biological Opinion into the recommended conditions of approval. As the Biological Opinion is still not finalized as of the date of the publication of this report, the anticipated conditions in the Biological Opinion and even the basic conclusion that gravel extraction in 2003 will not jeopardize the threatened salmon species are subject to change.

The staff would normally not schedule for Commission action a project for which final information necessary to adjust permit conditions or findings is not yet available. However, delaying Commission action to a meeting after September would have severe consequences for the applicant's project. The gravel mining projects on the North Coast have historically been required by the Commission and other regulatory agencies to cease operations by October 15 each year to avoid the increased impacts of in-stream gravel mining that can occur during the rainy season. If the Commission cannot act on this project at the September hearing, a continuance to the October meeting or later would not leave any time period available for mining should the Commission eventually approve the project.

NOAA Fisheries staff have indicated to Commission staff that the Biological Opinion is likely to be finalized before the September 12, 2002 Commission meeting in time to allow whatever changes are made to the conditions of the Biological Opinion to be incorporated into the Commission staff recommendation as appropriate by addendum or orally by staff at the Commission meeting. In an effort to accommodate the applicant, staff has scheduled the project for Commission action even though the possibility remains that the Biological Opinion may not be finalized by September 12. Staff notes, however, that because the Commission's action must be based on conclusions and conditions which are actually adopted by the National Marine Fisheries Service in a final Biological Opinion, if the final Biological Opinion that is adopted is not consistent with the anticipated conclusions of the preliminary biological opinion information relied upon by staff in preparing this recommendation and does not provide support for the terms and conditions of this coastal development permit, the coastal development permit will never issue and a new coastal development permit approved by the Commission will be required.

I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

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Motion:

I move that the Commission approve Coastal Development Permit No. 1-03-015 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 the majority of the Commissioners present.

RESOLUTION TO APPROVE PERMIT:

The Commission hereby approves a coastal development permit, subject to the conditions specified below, for the proposed development on the grounds that, as conditioned, the development 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 attached Appendix A.

III. SPECIAL CONDITIONS:

1. 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.

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2. Final Gravel Extraction Plan

A. **PRIOR TO THE START OF GRAVEL EXTRACTION OPERATIONS**, the applicant shall submit, for the review and written approval of the Executive Director, a final gravel extraction plan for the 2003 gravel extraction season consistent with the terms and conditions of this permit and that contains the following:

1. A gravel extraction plan of the 2003 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 limits specified in Special Condition Nos. 3 and 4 below, and is prepared in conformance with Appendix C of U.S. Army Corps of Engineers, San Francisco District Letter of Permission Procedure, Gravel Mining and Excavation Activities in Humboldt County, No. LOP 96-1;
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), unless review by CHERT is not required by the County, and evidence that the final gravel extraction plan is consistent with the recommendations of the CHERT;
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 Appendix C of U.S. Army Corps of Engineer's, San

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Francisco District Letter of Permission Procedure, Gravel Mining and Excavation Activities within Humboldt County, No. LOP 96-1, dated August 19, 1996;

6. The results of biological monitoring report data required by the U.S. Army Corps of Engineers as described in Appendix D of U.S. Army Corps of Engineers, San Francisco District Letter of Permission Procedure, Gravel Mining and Excavation Activities within Humboldt County, No. LOP 96-1, dated August 19, 1996;
7. 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 erosion control, run-off, spill prevention and response 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

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- d. A schedule for installation and removal of the temporary runoff control measures.
- 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.

3. Extraction Limitations

Extraction of material shall be subject to the following limitations:

- a. The permittee shall extract no more than 25,000 cubic yards of gravel from the site;
- b. The permittee shall extract material only by dry trenching, wetland pits, horseshoe-shaped deep skims, or alcove extractions. Extraction by bar-skimming is prohibited. The extraction method that best reduces the effects of gravel extraction on spawning habitat and redds, and that best reduces channel braiding and widening shall be used at the extraction site as approved by NOAA Fisheries in consultation with the CHERT. 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

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- vegetation complex 1/16 acre or larger, or (2) one-inch-in-diameter at breast height (DBH) or greater;
- g. Horseshoe extractions shall (1) 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, (2) not exceed approximately 1/3 the width of bars, (3) not penetrate the summer water table, (4) not have side slopes that exceed 3h:1v and/or a head slope that exceeds 6h:1v;
 - h. Dry trench extractions shall be (1) limited to excavation on an exposed dry travel 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. Wetland pit extractions shall be (1) located on the 3 to 7 year flood plain surface, (2) excavated so as to leave the sides of the pit sloped, and (3) regularly shaped or irregularly shaped to avoid riparian vegetation;
 - j. 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; and
 - 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 is from the widest point of the bar to the upstream end of the bar that is exposed at summer low flow.

4. Extraction Season

Gravel extraction activities shall not commence until after September 15, 2003. Extraction and all regrading required by Special Condition No. 7 must be completed by October 15, 2003. The Executive Director may approve an extension of gravel extraction and regrading activities beyond that date to as late as November 1 if the permittee has submitted a request for an extension in writing and 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 regrading activities shall occur after October 15 unless the permittee has first received approval of an extension of time from the Executive Director. The applicant must have regraded the site before an extension can be authorized.

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5. Seasonal Site Closure

The excavation area must be regraded before October 15, or by the extended date approved by the Executive Director pursuant to Special Condition No. 5 above. The site must be regraded when extraction has been completed, or daily after October 1. Regrading 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.

6. Permit Termination Date

The gravel operations authorized by this permit shall terminate on November 1, 2003. Continued gravel operations after that date shall require a new coastal development permit.

7. 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. 3. 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.

8. 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 variety, consisting of one or two 60-foot-long or 90-foot-long rail cars placed side-by-side in a manner 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. The presence of heavy equipment in the wetted low-flow channel shall be minimized by limiting the number of heavy equipment crossings during each

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crossing installation or removal. A maximum of two crossing per installation or 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; and

- d. Channel crossing removal shall be completed by October 15, 2003 or by the extended date approved by the Executive Director pursuant to Special Condition No. 5 above.

9. Streambed Alteration Agreement

PRIOR TO THE START OF ANY 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 for the project for the 2003 gravel extraction season. The applicant shall inform the Executive Director of any changes to the project required by the Department of Fish and Game. 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. Army Corps of Engineers Approval

PRIOR TO THE START OF ANY GRAVEL EXTRACTION OPERATIONS, the permittee shall submit a copy of the permit issued by the U.S. Army Corps of Engineers granting approval for the project for the 2003 gravel extraction season, or a 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.

11. Final Biological Opinion

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 has issued a Final Biological Opinion in support of the gravel extraction authorized by this permit and that is consistent with all terms and conditions of this permit.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. Site Description.

The applicant proposes to extract up to 25,000 cubic yards of river run sand and gravel during the 2003 through 2007 gravel extraction seasons and process gravel in adjacent upland areas at the Worswick gravel bar below the Sandy Prairie landform along the east side of the lower Eel River, approximately 1,500 feet southeast of Fernbridge in Humboldt County (see Exhibit Nos. 1 and 2). The subject property is located along the southwest side of U.S. Highway 101 and is accessed via Fernbridge Drive (State Route 211).

The proposed extraction would occur within a portion of the 227-acre parcel. The parcel stretches along approximately ½ mile of the river and extends from approximately the middle of the Eel River northeasterly to the North Coast Railroad Authority (NCRA) right of way. The bulk of the parcel consists of portions of the Worswick gravel bar lying below the northeastern bank of the river. The bar is largely exposed during low river flow conditions during the dry season and submerged during high flow conditions in the winter. The northeasterly side of the parcel does encompass the riverbank and a narrow, approximately 50-foot-wide strip of upland area adjacent to the railroad right of way. This upland strip has been used previously and is proposed to be used again as part of the current application as an aggregate facility where processing activities including sorting and crushing occur. The entire property is within the Commission's retained permit jurisdiction. The Commission previously granted a five-year permit to the applicants in 1996 (CDP No. 1-96-062) and a one-year authorization to extract gravel in 2002 (CDP No. 1-00-055).

The Eel River and its tributaries are ranked among the most significant anadromous fisheries in Northern California. Chinook salmon, coho salmon and steelhead trout are among the most important species with regard to commercial and sport fisheries. The project area and the lower Eel River are mainly utilized by the anadromous fish as a migration route to and from the upstream spawning grounds. In addition, the National Marine Fisheries Service (NOAA Fisheries) indicates that the lower Eel River supports summer rearing 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 riverine habitat of the river channels on the site and the occasional ponds that form under summer low water conditions provide habitat for invertebrates, fish, amphibians such as frogs and salamanders, invertebrate-eating birds and various mammals including river otters and mink and other mammals that come to the river to forage (such as deer and raccoon). The exposed cobble in the gravel bars adjacent to the low-flow channels

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provides roosting habitats for 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 vegetation growing within the North Coast riparian scrub habitat is dominated by coyote brush (Baccharis pilularis), which forms a dense shrub layer in some areas. The understory is comprised of weedy annual grasses and forbs. Only a sparse covering of small trees is found in the north coast riparian scrub communities (5%-25%), including black cottonwood (Populus balsamifera ssp. trichocarpa) and willows (Salix sp.). The riparian scrub habitat on or adjacent to Worswick Bar 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 foraging, nesting and cover.

The most important of the habitat types found at Worswick Bar is the North Coast black cottonwood forest. Remnants of this habitat type are found within the project vicinity on an inner reaches of the adjoining levee within the bank-full channel. This habitat type is a broad-leaved, winter deciduous forest dominated by black cottonwood with willow 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 on the applicant's property range back to 20 to 25 years old, becoming established following major flooding of the Eel River that occurred in 1964. The cottonwood forest represents the most structurally complex habitat on the lower Eel, 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.

In general, the riparian vegetation lining the lower Eel River is perhaps the single-most important element for the natural environment in the area. The riparian habitat provides habitat for most of the birds and mammals in the project area. The presence of two different kinds of riparian habitat, the North Coast Scrub and the North Coast black cottonwood forest, provide habitat for a greater number of wildlife species than a more uniform and simple habitat structure would.

The riparian zone along the river 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. In addition to its habitat value, the riparian corridor also provides water quality protection, stream bank stabilization through root penetration, and flood protection.

The project site is used by federally listed threatened and endangered species including coho salmon (Oncorhynchus kisutch), Chinook salmon (Oncorhynchus tshawytscha), steelhead trout (Oncorhynchus mykiss), and the western snowy plover (Charadrius

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alexandrinus nivosus). The coho was listed by the federal government as a "threatened species" along the northern California and southern Oregon coastlines in May 1997 with critical habitat designated in May 1999. Chinook salmon was federally listed as "threatened" in September 1999 with critical habitat designated in February, 2000. Most recently, the steelhead trout was listed as "threatened" in June, 2000. In 1993, the western snowy plover became a federally listed "threatened" species. Though originally thought to primarily inhabit open beach strand environments, plovers have also been observed roosting and nesting on gravel bars on the lower Eel River. The plover sitings on the Eel River have been in the months of April through early September, during the nesting season. The plovers establish their nests on the open gravel bars rather than in trees.

The Southern Oregon – Northern California Coasts Evolutionarily Significant Unit coho is currently a candidate for listing as an endangered or threatened species under the California Endangered Species Act (CESA). Other fish species in the river that are listed by the California Department of Fish and Game as "species of special concern" include coastal cutthroat trout (Oncorhynchus clarki), Pacific lamprey (Lampetra tridentata), and Green sturgeon (Acipenser medirostris). Special status species are those legally protected by state or federal endangered species laws, those under consideration for such protection or those of concern to state or federal resource agencies. Even though no special status species apart from the fish species mentioned above have been found at the site, the black cottonwood riparian forest areas at the site offer suitable habitat for a state listed endangered species, the willow flycatcher (Empidonax traillii), and four "species of special concern:" the black-shouldered kite (Elanus caeruleus), Cooper's hawk (Accipiter cooperii), yellow warbler (Dendroica petechia), and yellow-breasted chat (Icteria virens).

The applicant has previously undertaken gravel extraction in the proposed area under a approved Coastal Development Permit (CDP 1-96-062), approved by the Commission for a five calendar-year period on July 8, 1997 and most recently under Coastal Development Permit 1-00-055 (CDP 1-00-055). CDP-1-00-055 terminated on October 15, 2002.

B. Detailed Project Description.

The applicant proposes to extract up to a maximum of 25,000 cubic yards of sand and gravel between September 15 and October 15, 2003 through 2007. In addition, the applicant proposes to seasonally process and stockpile gravel in upland areas adjacent to the gravel bar. The County uses the gravel extracted and processed at the site in the repair of County-maintained roads and bridges.

The County has mined and processed gravel at the site for many years. The specific location of extraction has stayed nearly the same from year-to-year. The County last extracted gravel from the site in 2002. The work plan for 2002 was typical of extraction that has occurred at the site in the past. In 2000, an area measuring approximately 500 feet long by 425 feet wide was mined to a depth of approximately two to three feet. The

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extraction was at a distance of approximately 150 to 200 feet from the water's edge, and the extraction area was left at a slope of 1½ percent toward the river. For the 2002 season, the extraction area encompassed a roughly 5.8-acre area located to the west and north of the 2000 season extraction area approximately 150 to 550 feet back from the water's edge (see Exhibit No. 3). Gravel would be skimmed from the bar in this area to a one- to two-foot depth.

Gravel is proposed to be extracted using a bulldozer, front-end loader, and dump trucks. The trucks will haul extracted material from the extraction site off the bar via an existing access road that rises up the bank through the riparian forest to the upland terrace for stockpiling and processing. The Eel River's low flow channel runs along the southern side of the streambed, on the opposite direct from the processing site, so no stream crossings are proposed as part of the project.

The applicant is proposing to perform some processing of the gravel to be extracted at the site. The processing operation would occur in the upland strip between the riparian forest area that lines the northern bank of the river and the NCRA right-of-way. The processing operation would use a portable rock crusher unit that is comprised of various units including an electrical generator housed in a 40-foot-long semi-tractor trailer, a hopper with conveyor, jaw crusher with conveyor, cone crusher with conveyor, and a screening unit with conveyor. The gravel processing operation does not produce pea gravel or other aggregate products that require washing to remove sand and other fines. Therefore, there is no wash water discharge associated with the processing operation and no sedimentation basin.

Gravel is proposed to be stored in a 500-foot-long by 80-foot-wide stockpile area in piles that would be approximately 20 feet in height

C. Background on Eel River Gravel Mining.

Lower Eel River Gravel Extraction Operations

The lower Eel River has been used for gravel extraction since 1911. Currently, eleven gravel operations are located along an eight-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. The 11 operations along the Eel River are within the coastal zone. The average annual maximum amount of gravel permitted to be extracted by the fourteen gravel mining operations in the lower Eel and Van Duzen Rivers was estimated by the County in the past to be approximately 1,480,000 cubic yards. Average total annual mining prescriptions for the same river reaches as established from mean annual recruitment (MAR) cross-sectional analysis was 577,772 cubic yards for the 1997 through 2002 extraction seasons. Actual average annual extraction was generally much lower, estimated at approximately 365,641 cubic yards for the same 1997-2002 period.

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The projects 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 landsliding occurring in the watershed.

Thus, over-extraction by all of the projects in the lower Eel River 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), 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 resulting from the gravel mining operations can occur. The potential 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.

1991 Program 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.

Gravel mining operations on the Eel River 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. To comply with environmental review requirements under the California Environmental Quality Act (CEQA) the County decided to prepare a Program Environmental Impact Report (PEIR) to describe and analyze the potential environmental effects resulting from the thirteen gravel removal operations in the lower Eel River-Van Duzen watersheds. The document was certified in July 1992 and is 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 thirteen operators to reach a final determination as to which operations were proceeding according to valid vested rights or County permits, and

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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 occurred over the last 75 years. Annual monitoring as well as analysis of additional sources of historic bed elevations has further substantiated this. A late 1990's comparative study by the U.S. Army Corps of Engineers (Corps) repeating cross sections at locations that were surveyed in 1969 showed overall little change bed elevations and gradient in the last 30 years.

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 Program EIR 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 river. As described in the Program EIR, 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' LOP 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.

The County established its "Lower Eel River Interim Monitoring Plan" 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, 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

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streambed and also evaluates and recommends practices designed to preserve and enhance vegetation and wildlife habitat.

U.S. Army Corps of Engineers Letter of Permission Procedure

In the fall of 1993, due to an amendment to their Clean Water Act (CWA) regulatory program, the Corps became more involved in regulating gravel extraction operations. Whereas previously, the Corp's 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.

Federal Endangered Species Act Section 7 Consultations with NOAA Fisheries and USFWS

As with all "federal actions" that might adversely impact rare, threatened, and endangered fish and wildlife, the LOP process 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 proposed LOP gravel mining authorization procedure.

The consultation process primarily consists of the agency undertaking the action compiling biological assessment 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. The National Marine Fisheries Service (NOAA Fisheries) prepares and issues a Biological Opinion 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 (USFWS). Based on the findings of the NOAA Fisheries review, mitigation measures required by the FESA are incorporated into extraction requirements. As more information is gathered on the

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species and the direct, indirect, and cumulative effects on their members and habitat, these mitigation requirements are revised as necessary.

NOAA Fisheries originally issued a Biological Opinion (Opinion) for the Letter of Permission Procedure for Gravel Mining and Excavation Activities within Humboldt County, California (LOP 96-1) in July, 1997. The LOP 96-1 was authorized for a five-year term, expiring in August, 2001. Several Endangered Species Act listing actions occurred subsequent to the issuance of NOAA Fisheries' 1997 Opinion 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 Biological Opinion (May 1, 2000). In June, 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 Biological Opinion 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 Biological Opinion to analyze the extended duration of LOP 96-1.

On November 26, 2003, the Corps issued a public notice announcing re-initiation of its efforts for authorization of a new Humboldt County Letter of Permission 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 Biological Opinion for LOP-2003-1. The Draft Opinion incorporated newly available information that was not previously analyzed in the 2000 Biological Opinion and its subsequent revisions issued for the LOP's 2001 and 2002 administrative extensions. In addition, the Draft Opinion further details 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 Opinion, 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

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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 believe 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, USFWS, 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 FESA-listed fish species. Given the limited time remaining to further consider these comments and allow for an adequate period to conduct mining in 2003, the Corps temporarily set-aside LOP 2003-1. In its place, the Corps initiated consultation with NOAA Fisheries and USFWS for an additional administrative one-year extension of LOP 96-1. In addition, the Corp modified the procedures and terms of LOP 96-1 to include the reasonable and prudent alternatives identified within the draft Biological for LOP 2003-1 in the interest of avoiding a jeopardy opinion also being issued for the 2003 extension of LOP 96-1.

For the proposed project site, these gravel extraction limitations include the following:

- All applicants shall use the CHERT process for annual review and recommendations;
- Bar-skimming as an extraction method shall be minimized and only on-bar/secondary channel “horseshoe deep-skimming,” or “dry,” “wetland pit,” or “alcove” trenching be allowed;
- A minimum head-of-bar length, generally defined as the up-stream portion of the bar from its widest point, shall be delineated in which gravel mining would be prohibited as part of any gravel mining authorization under extended LOP 96-1;
- The timing of temporary channel crossing construction and removal, and the methods used to construct temporary channel crossings, shall minimize inputs of fine sediment into the wetted channel, and minimize impacts to spawning habitat;

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- All main channel crossings must be spanned to the maximum length practicable using either a flatcar or bridge span. If encroachment into the low flow channel is necessary to span the wetted channel then abutments shall be constructed from washed cobbles, brow logs, large concrete block, or other appropriate materials that can be placed and removed with minimal effects;
- 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 crossings shall be placed after June 15 only. All crossings and associated fills must be removed after excavation ceases, but before October 15 for all rivers;
- Temporary storage of excavated material may occur on the gravel bar, but must be removed by October 1. Temporary stockpiling of gravel on bars may occur during the active work week, Monday through Saturday, but must be removed on or before Saturday of each weekend;
- Work on gravel bars shall be limited to Monday through Saturday, 7:00 a.m. to 6:00 p.m.;
- Haul roads shall follow the shortest route possible while avoiding sensitive areas such as riparian vegetation, and shall be scarified after extraction is complete to prevent compaction of the gravel bar;
- 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. 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

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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, 2003. 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; and
- Large woody debris (LWD) deposited in the wetted channel and on floodplains and terraces by floods shall be protected from being gathered for firewood and other uses. 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 gravel operators shall be gated and locked to reduce access.

Based on consultations with NOAA Fisheries staff, Commission staff understand that the Biological Opinion to be issued by NOAA Fisheries will likely include the following additional "reasonable and prudent measures" (RPMs) necessary and appropriate to further minimize take of SONCC coho salmon, CC Chinook salmon, and NC steelhead. These RPMs would require that:

- Copies of all pre- and post-extraction information be provided to NOAA Fisheries;
- All gravel mining authorizations made pursuant to the extended LOP be subject to the gravel extraction limitations enumerated within the LOP;
- Prior approval be granted by NOAA Fisheries for any extensions to the June 15 – October 15 season for gravel extraction operations and/or bridge construction and removal;
- All potential appurtenant fisheries enhancement projects be subject to NOAA Fisheries review;
- A fish rescue plan be developed for all extraction plans requiring the use of coffer damming or stream diversions;
- An extraction reach-specific monitoring plan replacing the anadromous fish monitoring protocol within the original LOP 96-1 be developed by the Corps, gravel operators, CHERT, and NOAA Fisheries prior to September 15;

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- A data form for consistent reporting of cross-sectional and other survey information be developed by the Corps, gravel operators, CHERT, and NOAA Fisheries prior to September 15; and
- All monitoring is completed and associated reports compiled and submitted to NOAA Fisheries no later than December 31.

At the time of the writing of this staff report, the Biological Opinion is undergoing internal review by NOAA Fisheries staff. NOAA Fisheries and the Corps expect that a final Opinion will be issued by late-August with the modified LOP 96-1 implemented by mid-September.

Listing of Coho Salmon Under California Endangered Species Act

On July 28, 2000, the California Fish and Game Commission (CFGC) received a petition from the Salmon and Steelhead Recovery Coalition requesting that the coho salmon north of San Francisco (i.e., Southern Oregon / Northern California Coast Environmentally Significant Unit or "SONCC Coho ESU") be listed as an endangered species under the California Endangered Species Act (CESA). The petition described runs of coho as having declined 90 percent in the past 30 years, to stand at one percent of the historic levels. CFGC subsequently forwarded the petition to the California Department of Fish and Game (CDFG) to review the petition and determine whether acceptance of the petition would be appropriate. On April 5, 2001, the CFGC accepted the petition for listing, initiating a 12- to 14-month review period by CDFG in which appropriate recommendations on the requested listing were to be developed. During that period, the protection granted to listed species under the CESA was extended to candidate species, specifically prohibiting taking of the species without the express consent of CDFG.

On April 27, 2001, the CFGC published a notice of findings declaring the coho a candidate species (see Exhibit No. 7). Pursuant to Section 2084 of the Fish and Game Code, CDFG also adopted a Statement of Proposed Emergency Regulatory Action for the species' candidacy period (see Exhibit No. 8). The so-called "2084 rules" establish a variety of performance standards for various types of in-stream activities, including gravel mining, that are to be required as part of any Streambed Alteration Agreements issued by CDFG. The standards are intended to minimize potential impacts to the coho during its listing candidacy.

In April 2002, the CDFG released Candidate Status Review Report 2002-3, "Status Review of California Coho Salmon North of San Francisco." The report concluded that CDFG had found that while a CESA "endangered" listing was not warranted at this time, the SONCC Coho ESU was in serious danger of becoming extinct throughout all or a significant portion of its range. Accordingly, CDFG recommended that the CFGC list the SONCC Coho ESU as "threatened." The CFGC subsequently took action at the August 30th meeting, listing the coho as an endangered species in the area between San Francisco

Bay and Punta Gorda and threatened between Punta Gorda and the California-Oregon border. To allow time for preparation of a recovery plan on how best to protect the coho, the CFGC placed a 90-day suspension on the listing. In the fall of 2002, the listing suspension was further extended for a period of one year to allow additional time for preparation of the recovery plan.

D. Protection of the Riverine Environment.

The proposed project involves the surface mining extraction of sand and gravel from the Worswick Bar of the lower Eel River using heavy mechanized 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. These policies include Sections 30231 and 30233. Section 30231 applies generally to any development in riverine environments and other kinds of water bodies in the coastal zone. 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 30231 of the Coastal Act states, in applicable part:

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

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

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

...

- (6) 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...*

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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.

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

1. that the purpose of the filling, diking, or dredging is for one of the eight uses allowed under Section 30233;
2. that feasible mitigation measures have been provided to minimize adverse environmental effects;
3. that the project has no feasible less environmentally damaging alternative; and
4. that 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 purpose as enumerated under Section 30233 of the Coastal Act. The proposed project involves dredging for mineral extraction. Surface mining of gravel aggregate materials is specifically enumerated as a permissible use in the above-cited policy, provided the activity is not undertaken in environmentally sensitive areas; Section 30233(a)(6) allows dredging for mineral extraction, 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)(6).

The environmentally sensitive habitat consists of various types including nesting habitat for the threatened western snowy plover, North Coast riparian scrub habitat occurring on high points within the bank-full channel of the river, North Coast black cottonwood forest occurring on a large island and on the left bank of the river within the project site and the live waters of the river which is habitat for threatened salmonid species. The proposed mining project would be located in areas that would generally avoid intrusion into these habitat areas and/or be performed at times when sensitive species were not nesting and/or

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utilizing the site for habitat. Descriptions of the habitats and their use by wildlife are found in the Findings Section C, "Site Description," of this report.

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 their unique 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 clearly 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, the 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 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 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 fish 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)(6) and 30240, the Commission has generally applied the environmentally sensitive area

designation only to the portions of the river containing stream flow when mining would occur during the summer-early fall dry season.

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 these species through: (a) water quality associated with increased turbidity and sedimentation; (b) organism injuries and or deaths from contact with excavation equipment; (c) organism injuries, deaths, and changes in behavior due to water 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.

However, neither the proposed LOP or the anticipated Biological Opinion expressly prohibit extraction from within the flowing waters of a river. Moreover, the proposed LOP or the anticipated Biological Opinion provide for some limited "wet-trenching" extraction from within river reaches whose flow have been coffer-dammed or otherwise diverted into the seasonal high-flow channel. The Commission notes that the applicant's current 2003 mining plan does not specifically include wet-trenching extraction.

Accordingly, to further ensure that mineral extraction from within an environmentally sensitive habitat area as precluded by Coastal Act Sections 30233(a)(6) and 30240 does not occur and for consistency with the reasonable and prudent measures within the biological opinion prepared for the Letter of Permission program, the Commission attaches Special Condition No. 3.b which requires that excavation not occur within the actual wetted channel, where sensitive salmonid species could be present.

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. 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 coastal scrub-shrub 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 areas to be characterized as environmentally sensitive.

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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 their unique nature or role in the ecosystem, and (2) the area could be easily disturbed or degraded by human activities and developments. The non-persistent scrub-shrub riparian areas clearly meet the second criterion in that the gravel extraction materials on the river bar, such as proposed by the applicant, can quickly obliterate any of this habitat the extraction activities comes in contact with. With regard to the first criterion, the riparian scrub-shrub vegetation is not rare, as it usually does not contain rare or endangered species and can be found extensively on the many gravel bars along North Coast waterways. However, such vegetation can be considered especially valuable and therefore also meet the second 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 provide much forage area, nesting opportunities, or much screening from predators for birds and other animals who choose to use it. As the sprig grows taller, however, and as more riparian plants colonize the surrounding area, the sprig, and the plants now growing in association with it, can start to provide 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-shrub vegetation it reaches the point where it can be considered environmentally sensitive. In discussions with California Department of Fish and Game 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 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 USACE Letter of Permission (LOP) Procedure authorizing gravel mining in Humboldt County. The LOP, which was first issued in 1996, was developed by the Corps after a number of interagency meetings and consultations with representatives of various state and federal resource agencies. Modified extended LOP 96-1 reiterates many of the past restrictions on the gravel extraction projects that it authorizes. One such restriction 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

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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 may require mitigation at the discretion of the Corps...

The 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") diameter at breast height.

The U.S. Army Corps of Engineers 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)(6) 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 Corp's 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 Corp's 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 CDFG 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

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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)(6), the Commission attaches Special Condition Nos. 3.e & 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. 2 which requires the applicant to submit for the review and approval of the Executive Director a final gravel extraction plan for the 2003 gravel extraction season that is consistent with the extraction limitations of Special Condition No. 3, which include the aforementioned limitations on extracting gravel in riparian areas.

Exposed Gravel Bars as Environmentally Sensitive Habitat

Another form of environmentally sensitive areas that can potentially be found on the exposed gravel bars are seasonal nesting sites 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 August. As the Commission considers the habitat of rare and endangered species to be environmentally sensitive areas, the Commission finds any areas utilized by the western snowy plover during the nesting season when the birds are present constitute environmentally sensitive habitat areas.

The USFWS has overseen surveying on the gravel bars within the Eel River during the April to September breeding season window. Preliminary information from the surveys indicate that a total of 31 adult plovers (17♂, 14♀) constructed a total of 36 nests with 42 resulting chicks hatching out. USFWS staff have indicated that as of the date of the publication of this report, with the exception of two immature chicks remaining on the County of Humboldt's Worswick Bar extraction site, all other chicks have fully fledged and have left the other nesting sites on the lower Eel River, including the Hansen/Hauck Bar area. Based upon a projected rate of maturity, USFWS staff estimate that these remaining plovers would be fully fledged by approximately September 10. USFWS does not anticipate the arrival or further nesting habitat utilization of the lower Eel River gravel bars by any additional plovers during the remainder of the 2003 gravel extraction season.

In the recommended measures set forth by the USFWS, gravel extraction operations that commence after September 15, following the peak plover nesting season, are not subject

to the surveying and monitoring protocol required for mining activities that commence prior to September 15. The applicant proposes to commence gravel extraction after September 15 to avoid potential adverse impacts to plovers. Special Condition No. 3 requires that extraction not be performed prior to September 15 as proposed.

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 mining operation is for mineral extraction in areas that are not environmentally sensitive, consistent with Section 30233(a)(6).

(2) Feasible Mitigation Measures

The second 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 four 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 to western snowy plover; and (e) impacts to the water quality of the river. The potential impacts and their mitigation are discussed in the following sections:

(a) Fisheries

As noted previously, 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 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 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 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 U.S. Army Corps of Engineers (Corps) permitted gravel mining operations along the lower Eel River on sensitive fish species does exist in the form of Biological Opinions issued by National Marine Fisheries Service (NOAA Fisheries). These Biological Opinions are issued as a result of formal consultations between the Corps of Engineers and the NOAA Fisheries pursuant to Section 7 of the Federal Endangered Species Act. As discussed previously in the "Background on Regulation of Eel River Gravel Mining" Finding, the Corps decided to extend LOP 96-1 (previously due to expire on December 31, 2002) to provide an authorization process for the 2003 gravel mining season while a new LOP for subsequent gravel mining seasons is considered. The Corps requested that NOAA Fisheries amend the most recent (2002) Biological Opinion to analyze the extended duration of LOP 96-1.

As discussed in the preceding findings section, for the 2003 extraction season, NOAA Fisheries has been preparing an amended Biological Opinion for the further-extended duration of LOP 96-1 that incorporates newly available information that was not previously analyzed in previous Biological Opinions regarding the effects of gravel mining and extraction activities on listed salmonids. According to NOAA Fisheries, gravel mining results in both short-term and long-term changes to channel form and function and such changes affect habitat function for listed salmonids. In past discussions, NOAA staff have indicated that gravel mining could result in significant adverse impacts to listed salmonid critical habitat, especially if bar-skimming extraction were to continue as the primary extraction methodology, by:

- Alteration of pool quantity and quality through instigated changes in channel cross-sectional width-to-depth configuration, resulting increased channel braiding, sedimentation, and/or reductions in riparian function and diversity through loss and suppressed succession of bankside vegetation;
- Impacts to Chinook salmon spawning and rearing habitat for all listed salmonid species through destabilization of riffles, decreases in food and cover availability, and blockage of in-stream migration routes with increase predisposition to poaching and/or angling predation; and
- Impacts to velocity refugia due to continued removal of channel-confining bar deposits, changes to bed roughness or riparian form through

suppression of the formation of vegetated islands between multiple channels.

In consultation with the Corps, NOAA staff has identified several alternative extraction methods and techniques that could be utilized which would maintain the channel-confining and flow deflecting form and functions of the bar and not cause the above-listed deleterious effects to the riverine environment. These methods and techniques include: (a) concentrating on-bar gravel extraction from horseshoe-shaped "deep skims," (b) excavating "wetland pits" on the bar; (c) developing "alcove trenches" within the outboard secondary channels on the lower end of the bars; (d) longitudinal "dry trenching" down the length of a portion of the bars; and (e) maintaining a minimum head-of-bar area, generally defined as the upstream portion of the bars from their widest extent, in which mining would be prohibited. Accordingly, if used in-lieu of continued bar-skimming, significant adverse impacts to channel form and function as well as fish habitat will be avoided.

Therefore, to ensure that the mineral extraction proposed by the applicants does not degrade the habitat of threatened salmonid species, the Commission includes within the requirements of Special Condition No. 3 (b) a prohibition on the extraction of materials by the traditional bar-skimming method and requires instead the use of alternative methods that better protect the main channel configuration (i.e., "dry trenching," "wetland pits," horseshoe-shaped deep skims, and alcove excavations). In deciding among these alternative methods, Special Condition No. 3 also requires the use of the alternative method that best reduces the effects of gravel extraction and is approved by NOAA Fisheries in consultation with the CHERT. This requirement will ensure that disturbance of fish habitat will be avoided.

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, culverted stream crossings can also impact rearing salmon habitat by impeding or altering channel stream flow dynamics.

NOAA Fisheries also indicates 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 and left 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 have 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.

Based on the biological information collected as part of the FESA Section 7 consultation, NOAA Fisheries staff concludes that extraction of gravel during the 2003 extraction season will not result in more than incidental take of threatened salmonid species and will not jeopardize their continued existence provided that: (a) the "Gravel Extraction Limitations for the 2003 Mining Season" identified within the modified/extended LOP 96-1 (see pages 21-23 of this report) are complied with; and (b) the additional reasonable and prudent measures specified on pages 23-24 of this report within the finding sub-headed "Federal Endangered Species Act Section 7 Consultations with NOAA Fisheries and USFWS."

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. 2 and 3 requirements of the modified/extended LOP 96-1 and the additional reasonable and prudent measures recommended by NOAA Fisheries staff that the permittee: (1) extract gravel only from downstream of the widest point of the bar, outside of the bar-head mining/alteration exclusion area and provide minimum vertical offsets from the low flow channel as appropriate; (2) only utilize "horseshoe-shaped deep-skimming," or "dry," "wetland pit," or "alcove" trenching extraction techniques on the lower Eel River mining sites; and (3) provide for termination of the permit at the end of the 2003 mining season.

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

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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 conditions of the NOAA Fisheries Biological Opinion also require completion of gravel mining operations by October 15, with similar extensions to November 1 possible.

Therefore, the Commission attaches Special Condition No. 4 that requires mining and all post-extraction bar grooming work and equipment removal be performed during the summer months and completed by October 15 to ensure no significant disturbance to anadromous fish. The Executive Director may approve an extension of gravel extraction and regrading activities to as late as November 1 if dry weather conditioned are forecasted and the permittee has received all necessary approvals to extend gravel operations over the extension period from the Department of Fish and Game, the U.S. Army Corps of Engineers, and NOAA Fisheries.

NOAA Fisheries and the Corps expect that a new Biological Opinion on the effects of lower Eel River gravel mining on sensitive fish species will be issued and a new multi-year LOP will be implemented prior to the 2004 gravel extraction season. This new Biological Opinion will be prepared as a result of formal consultations between the Corps and NOAA Fisheries pursuant to the Federal Endangered Species Act on the Corps' proposed issuance of a new LOP to authorize gravel mining beyond the 2003 season.

This Biological Opinion will likely contain new recommendations on how to further limit gravel extraction operations to avoid significant adverse direct, indirect and cumulative impacts on sensitive fish species. For purposes of gravel extraction in 2003, NOAA Fisheries concludes that extending LOP 96-1 for gravel mining operations during 2003 "is still not likely to jeopardize the continued existence of Southern Oregon/Northern California (SONCC) coho salmon, Central California (CC) Chinook salmon, or Northern California (NC) steelhead, or destroy or adversely modify SONCC coho salmon designated critical habitat."

Therefore, the Commission finds that as conditioned, the proposed gravel mining for the 2003 extraction season would not result in significant cumulative adverse impacts on sensitive fish species consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

(b) 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.

The applicants propose to extract a maximum of 50,000 cubic yards during the 2003 extraction season, to be excavated under an extraction method designed in consultation with CHERT and CDFG staff. Although this amount is small relative to the overall permitted gravel mining activity along the Eel River (up to 1,480,000 cubic yards annually), extraction without consideration of river morphology concerns could cause bed degradation and riverbank erosion.

As discussed in the previous section, staff of NOAA Fisheries indicate that bar-skimming contributes to degradation of the riverbed. Alternative methods, such as horseshoe-shaped deep skims, and alcove extraction minimize degradation by maintaining the height and form of gravel bars, which in turn better maintain channel configuration. Therefore, to ensure that the mineral extraction proposed by the applicants does not degrade the riverbed by compromising channel confinement, the Commission includes within the requirements of Special Condition No. 3 (b) a prohibition on the extraction of materials by the traditional bar-skimming method and requires instead the use of alternative methods that better protect the main channel configuration (i.e., “dry trenching,” “wetland pits,” horseshoe-shaped deep skims, and alcove excavations). In deciding among these alternative methods, Special Condition No. 3 also requires the use of the alternative method that best reduces the effects of gravel extraction and is approved by NOAA Fisheries in consultation with the CHERT. These requirements will ensure that disturbance of the active channel will be avoided.

(c) Riparian Vegetation

As discussed previously under Findings Section IV(4)(a) above, the project site contains North Coast riparian scrub habitat and North coast black cottonwood forest. North Coast riparian scrub habitat occurs on “islands” between the low flow channels and is the most extensive plant community proximate to the project site. Remnants of North Coast black cottonwood forest are found on the bank

terrace adjacent to the river outside of the extraction area. Thus, the proposed project has the potential to adversely affect environmentally sensitive riparian vegetation at the Worswick Bar site.

To prevent disturbances to riparian habitat, Special Condition No. 3 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. 7, 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) Western Snowy Plover

The western snowy plover (Charadrius alexandrinus nivosus) was listed as a threatened species by the U.S. Fish and Wildlife Service in 1993. Snowy plovers were first documented nesting on gravel bars along the lower Eel River 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 a Biological Assessment prepared by qualified biologists entitled, "*Biological Assessment- Snowy Plover Habitat on the Lower Eel River, Humboldt County, CA,*" (July, 2001), approximately 805 acres of gravel habitat are potentially usable for snowy plovers. This estimate varies considerably from year to year and during the nesting season, as it is dependent primarily on river flow levels. The Biological Assessment summarizes plover use of the gravel bars from 1996 to 2001. This survey data indicates an increasing population of plovers in the lower Eel River area during recent years.

Because the plover is a federally-listed threatened species, the responsibility for protecting the species rests with the U.S. Fish and Wildlife Service (USFWS). The Service's Arcata Fish and Wildlife Office coordinates with the U.S. Army Corps of Engineers (Corps) to provide guidance and regulatory review to private gravel extraction operators and the County of Humboldt on the lower Eel River. The USFWS has set forth recommendations for plover protection based on

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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 USFWS, 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, a potential exists to adversely affect the western snowy plover through direct harm or harassment.

According to recent survey data provided by the USFWS, thirty-one (31) adult plovers were sighted on the lower Eel River gravel bars during the 2003 breeding season. These birds developed eleven thirty-six (36) nests on eight discrete bar sites through out the lower river, resulting in the successful hatching of forty-two (42) chicks. Although the total amount of chicks surviving to fully fledge is not known at this time, estimates range from 16 to 28.¹

At the time of the writing of this report (late August), all of the surviving chicks had fully fledged and left their nesting sites with the exception of two immature chicks at the County of Humboldt's Worswick Bar site. Based upon a projected rate of maturity, USFWS staff estimate that these remaining plovers would be fully fledged by approximately September 10. USFWS does not anticipate the arrival or further nesting habitat utilization of the lower Eel River gravel bars by any additional plovers during the remainder of the 2003 gravel extraction season.

In the recommended measures set forth by the USFWS, gravel extraction operations that commence after September 15, following the peak plover nesting season, are not subject to the surveying and monitoring protocol required for mining activities that commence prior to September 15. The applicant proposes

¹ Jim Watkins, Biologist, USFWS, pers. comm.

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to commence gravel extraction after September 15 to avoid potential adverse impacts to plovers. Special Condition No. 4 requires that extraction not be performed prior to September 15 as proposed.

Therefore, the Commission finds that the western snowy plover would not be significantly adversely affected by the project as proposed and no additional mitigation is required to protect western snowy plovers.

(e) 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. 2, 3, 4, and 7. Special Condition No. 2 requires that a runoff control plan be reviewed and approved by the Executive Director as part of the final 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, and that spill clean-up materials be available on the worksite, and that operators and sub-contractors undergo spill contingency training. Special Condition No. 3 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. 5 requires that all materials be promptly removed from the river after the cessation of mining and prior to the start of the rainy season. Special Condition No. 7 prohibits placing any material into the river during gravel extraction activities.

Therefore, as conditioned, the project will avoid significant adverse impacts to coastal water quality.

(f) 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

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standards imposed through Special Condition Nos. 2, 3, and 4 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. 5 and 7, to limit the extraction season and prohibit placement of material into the active channel, 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 and 30233 of the Coastal Act.

(3) Alternatives

The third 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. 1-12. 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 are 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 Program 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 are composed mostly of the Franciscan formation that 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 associated traffic and air quality impacts. The Commission therefore finds that substituting gravel extracted from quarry operations is not a feasible less environmentally damaging alternative.

(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 impact 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

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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.

(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 water quality, riparian vegetation, rare and endangered species, stream morphology, fisheries, or other coastal resources. 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 and 30233 of the Coastal Act.

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 estuarine 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. 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. None of the riparian habitat along the banks of the river will be disturbed by the extraction operation itself. In addition, existing haul roads through the riparian areas will be used to truck gravel from the bar to the stockpiling and processing facility. No new haul roads are proposed to be cut through the riparian woodland. To ensure that no new haul roads are created through riparian woodland, the Commission attaches Special

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Condition No. 7 that 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.

In addition, to help prevent potential impacts to the habitat afforded to nesting snowy plovers, USFWS bird surveys have been conducted. As discussed further in Findings Section IV.D.2.(d), above, although two plover chicks have hatched-out and are in the process of fledging on the applicant's extraction site, they are anticipated to be fully fledged by September 10. Moreover, the applicant does not proposed to instigate mining activities on the Worswick Gravel Bar until after September 15. Therefore the development will not adversely affect western snowy plover ESHA.

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

F. 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 will be visible from Highway 101 and from Fernbridge Drive, the highway frontage road. However, these operations are seasonal activities that would occur for only one month during the 2002 season (September 15 through October 15). In addition, the activities have been occurring at the site for many years, and many of the approximately twelve gravel operations occurring along the lower Eel River are similarly visible from Highway 101 and other public roads. The proposed project will not be any more prominent than 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 a part of the view shed.

Stockpiling gravel could have the greatest impact on visual resources of all of the activities proposed because the stockpiles could potentially be made very tall and block views to a certain degree of the river from public roads. However, as proposed by the applicant, the stockpiles would be a maximum of 20 feet high. At that height, the stockpiles would not rise appreciably 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.

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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.

G. 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 (U.S. Highway 101) and the sea (the Eel River is considered to be an arm of the sea in this area).

Recreational use of the river in this particular section of the river is very limited, largely because there are very few access points to the river. The principal public access use of the project site that does occur is by fishermen who use the river channel for recreational fishing. Other public access and recreational uses of this stretch of the river include canoeing and recreational boating. The prime fishing season occurs in the spring before the gravel extraction season begins. To the extent that canoeists and boaters do use the river channel during the extraction season, the proposed mining and aggregate processing operations would not be performed on portions of the exposed gravel bar and adjacent upland area on the north bank that might interfere with boating uses. The main channel will remain open and unimpeded for shallow-draft water transit through this reach of the lower Eel River.

Thus, the project will not significantly affect the fishermen, canoeists or other recreational boaters. Furthermore, gravel extraction operations have been occurring at the site for many years. The continued extraction authorized by this permit will not create any additional burdens on public access than have existed in the past. The project will not create any new demands for fishing access or other public access use.

Therefore, the proposed project would not have a significant adverse affect on public access that would be significant enough to warrant requiring public access. The

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Commission finds that the project, as proposed without new public access, is consistent with the public access policies of the Coastal Act.

H. 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 carry out the project consistent with the terms and conditions of this permit, the Commission attaches Special Condition No. 1 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.

I. CHERT Review.

Pursuant to the USCOE's Letter of Permission 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 modifications to 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. 3, the Commission attaches Special Condition No. 2.A.(4) which requires the applicant submit a copy of the pre-extraction mining plan review comments obtained from the CHERT as part of the final gravel extraction plan to be submitted for the review and approval of the Executive Director pursuant to Special Condition No. 2.

J. Department of Fish and Game Review.

The project requires an annual Section 1603 Streambed Alteration Agreement from the California Department of Fish and Game. The applicant has not yet received an agreement for the 2003 gravel extraction season. Therefore, to ensure that the project area reviewed by the Department of Fish and Game 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. 3, the Commission

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attaches Special Condition No.9 which requires that prior to commencing gravel operations, the applicant submit a copy of the Section 1600 agreement approved by the Department of Fish and Game.

K. 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 (USACE) 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 permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the USACE, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches Special Condition No. 10 that requires the applicant, prior to commencing gravel extraction operations, to demonstrate that all necessary approvals from the USACE for the proposed gravel extraction have been obtained.

L. California Environmental Quality Act.

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

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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.

EXHIBITS

1. Location Map
2. Vicinity Map
3. Site Plan
4. Proposed 2003 Extended Letter of Permission Procedure for Gravel Mining and Excavation Activities within Humboldt County, U.S. Army Corps of Engineers, August 13, 2003

APPENDIX A

STANDARD CONDITIONS

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

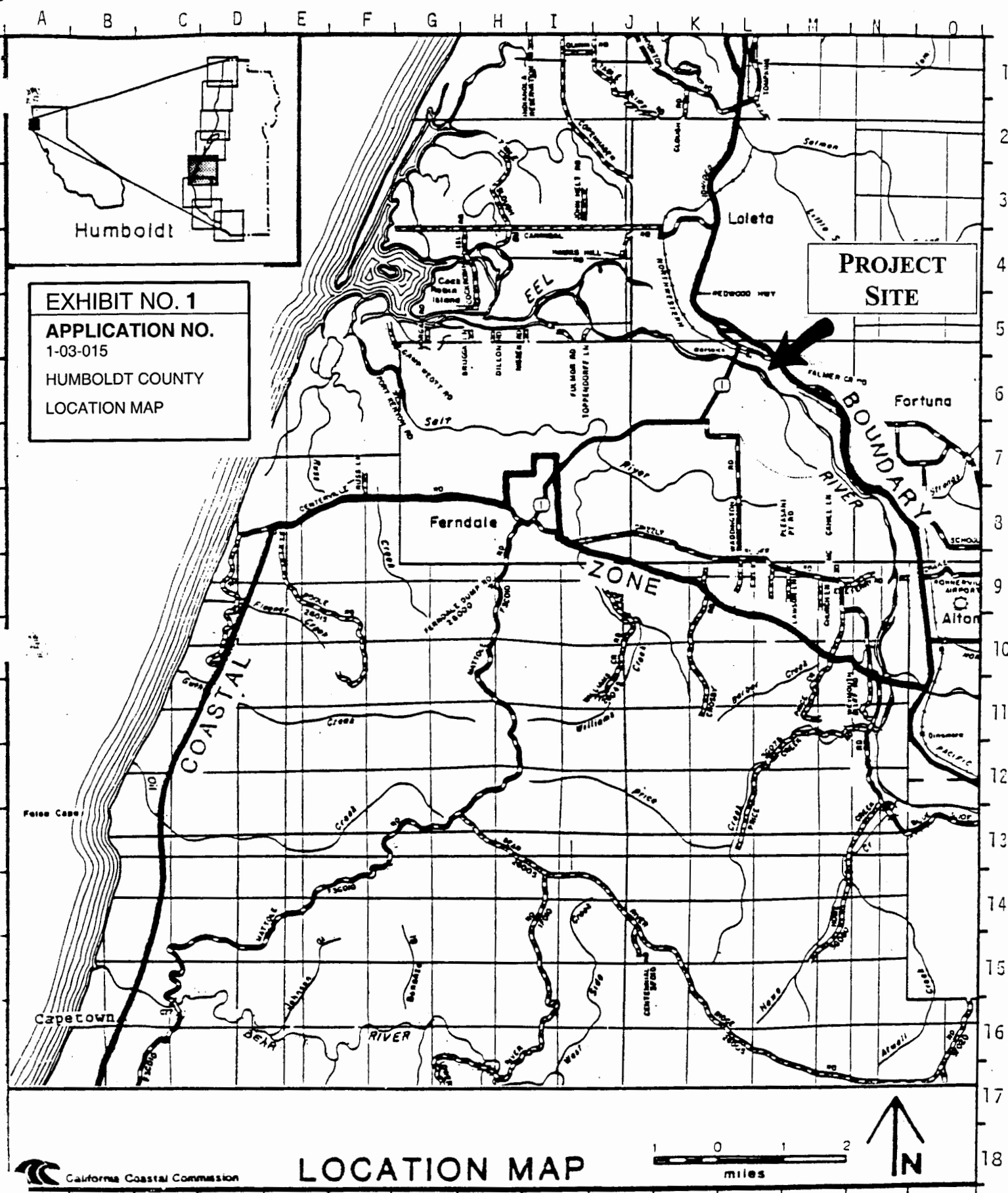


EXHIBIT NO. 1
APPLICATION NO.
1-03-015
HUMBOLDT COUNTY
LOCATION MAP

**PROJECT
SITE**

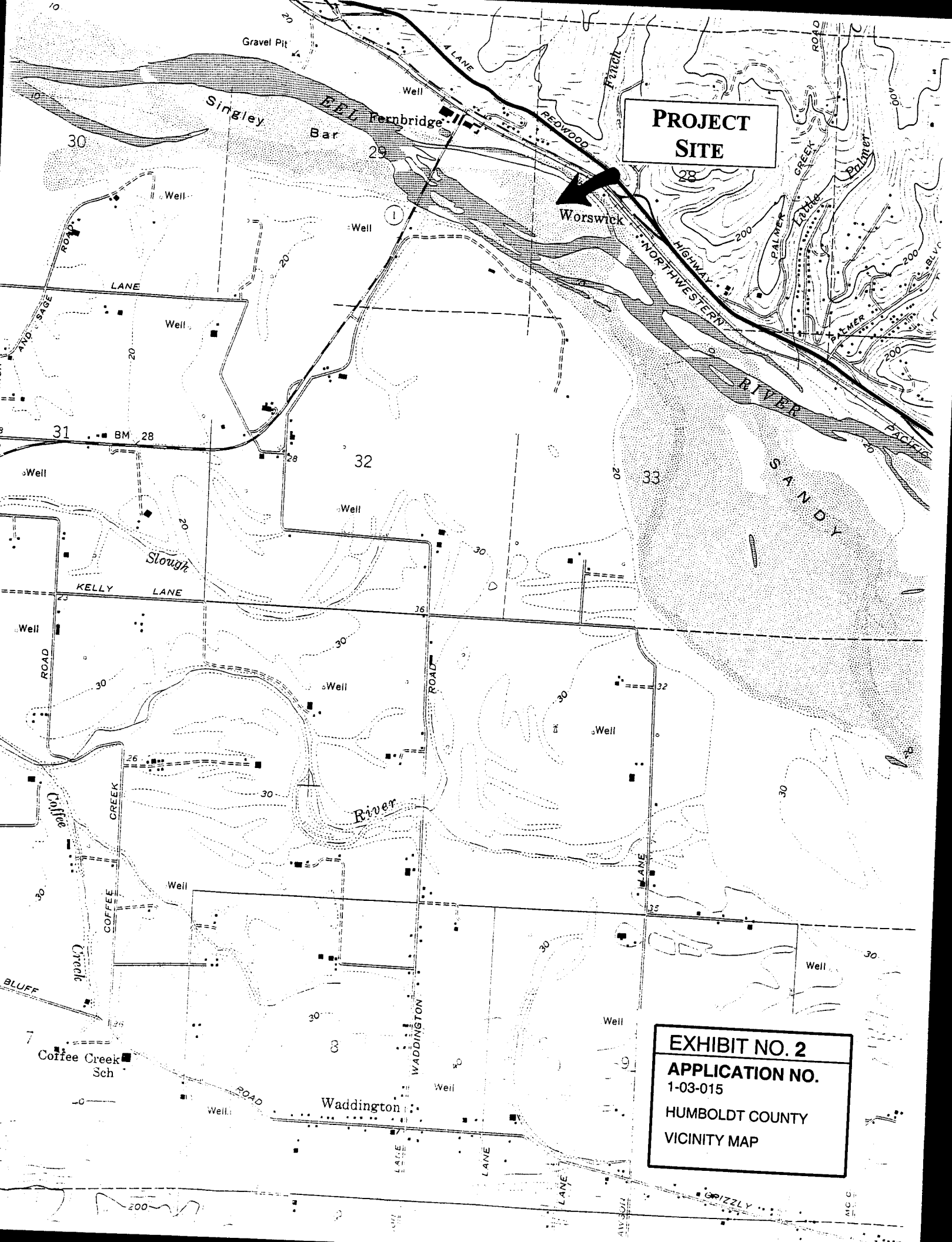


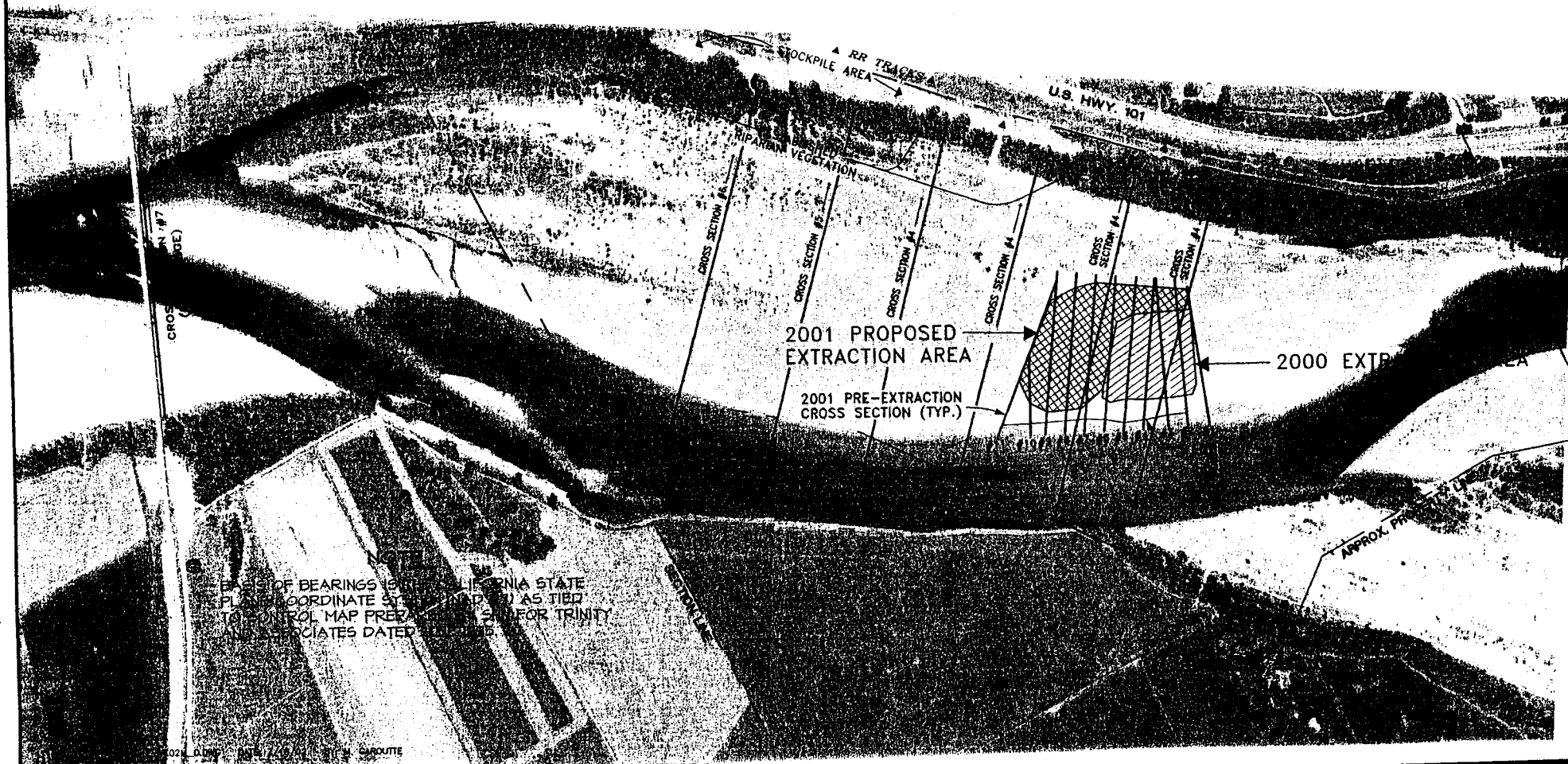
EXHIBIT NO. 3
 APPLICATION NO.
 1-03-015
 HUMBOLDT COUNTY
 SITE PLAN

COUNTY OF HUMBOLDT
 DEPARTMENT OF PUBLIC WORKS
 2002 ANNUAL MONITORING CROSS SECTIONS
 OF
 WORSWICK GRAVEL BAR
 PLAN

DATE OF SURVEYS: 6/12/02-6/17/02
 DATE OF PHOTO: 5/11/02

▲ CONTROL POINT
 SCALE: 1"=500'±

DISCHARGE AT SCOTIA, 5/11/02 = 1390 c.f.s.
 DISCHARGE AT SCOTIA, 6/17/02 = 410 c.f.s.



LETTER OF PERMISSION PROCEDURE (LOP-1) FOR GRAVEL MINING AND EXCAVATION ACTIVITIES WITHIN

HUMBOLDT COUNTY

The purpose of the LOP 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 LOP's to be issued under this procedure will contain limitations intended to protect the environment and natural and cultural resources. In cases where the District Engineer (DE) considers it necessary, applications will be required for individual permits.

SCOPE OF WORK:

Work authorized by LOP or modification (Mod) 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 by LOP 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 and construction of temporary coffer dams and 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 this LOP procedure shall be part of a single and complete project.

EVALUATION PROCEDURES:

Applicants shall submit complete applications, after consulting with the CHERT (County of Humboldt Extraction Review Team), to the Corps for review to determine whether the excavation activity qualifies under this LOP procedure. CHERT, a team of riverine scientists, will help identify areas of concern and locations for cross-section monitoring. If the activity qualifies under the LOP procedure, it will be authorized for the duration of the LOP procedure. However, each permittee must also submit yearly monitoring data regarding extraction amounts, cross-sectional information, biological monitoring and aerial photos.

The Corps conducts a public interest evaluation and coordination meeting with the Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), California Coastal Commission (CCC), California Department of Fish and Game (CDFG), and the California Regional Water Quality Control Board (RWQCB) 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, or reduce the future impacts of its operations to minimal impacts, and mitigate for past non-compliance.

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

- OCT 1 Gravel stockpiled on non Wild and Scenic river bars must be removed.
- OCT 15 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 NOAA Fisheries.
- DEC 1 Post-extraction cross section data and biological monitoring data submitted to Corps and CHERT except biological monitoring data gathered in Nov and Dec.
- DEC 31 Mitigation monitoring reports due to Corps.
Biological monitoring data gathered in Nov-Dec submitted to Corps and CHERT.

GRAVEL EXTRACTION LIMITATIONS FOR 2003 MINING SEASON:

Projects authorized under the modified LOP 96-1 procedure are subject to the following limitations. The limitations on gravel extraction for this modified LOP 96-1 have been expanded relative to those in the original LOP 96-1 to reflect new information and concerns of NOAA Fisheries. They also require closer coordination between the Corps, NOAA Fisheries, and CHERT in project review and approval. The Corps has the right to add or modify limitations as appropriate.

- 1. All applicants shall use the CHERT process for annual review and recommendations.**
- 2. Alternative extraction techniques shall be given deference over traditional skimming, which shall be minimized, in the Mad River, ~~the Eel River and~~¹ the Lower Eel River (from the mouth of the Van Duzen River downstream) and South Fork Eel River.**

In order to reduce the effects of gravel extraction on redd success and habitat quality and quantity, alternative extraction techniques will be considered first, in lieu of traditional skimming. In this context, extraction techniques will be considered in a hierarchy with alternative extraction techniques given primary consideration at each site. These alternative

¹ Per Kelley Reid, a typographic error; it is to be removed in the circulated electronic copy of Public Notice. Refer to his 030814.11:00 email

techniques include horseshoe extractions, alcoves, trenches and wetland pits. If site-specific geomorphic and biological conditions preclude the use of an alternative extraction technique, then narrow, crescent-shaped skims, for example, may be used as an alternative. Other alternatives may be submitted provided they are consistent with reducing the impacts to spawning habitat and redds, and channel braiding and widening. Where traditional skimming is proposed on the above river reaches, documentation and rationale for this approach shall be provided that describes why alternative techniques were not suitable for the site, and how the proposal reduces impacts to spawning habitat and redds and channel braiding and widening.

Where appropriate, alternative extraction techniques, such as horseshoe extractions, alcoves, and wetland pits can each reduce the impacts to redds, and to areas with braided or wide and shallow conditions, that are associated with bar skimming.

Horseshoe extractions: In order for horseshoe extractions to reduce the effects of gravel extraction, they should occur on the part of the gravel bar that is downstream from the widest point of the bar, and they must be set back from the low flow channel by providing sufficient vertical offsets that will provide for the physical and ecological functions of bars over a range of flows that maintain bars, riffles and pools, and provide for infrequent inundation of the horseshoe area. Additionally, horseshoe shaped extractions shall not exceed approximately 1/3 the width of bars, nor penetrate the summer water table. The floor of horseshoe shaped extractions shall provide for uniform drainage. Side slopes shall not exceed 3 horizontal to 1 vertical and the head slope shall not exceed 6 horizontal to 1 vertical.

Wetland pits: In order to minimize the impacts to juvenile salmonids from wetland pits, cover must be provided at the edges of the wetland pit by vegetation, and by placing woody debris within the pit. The vegetative cover at the edges of the wetland pit may be natural and/or planted. The pre-extraction mining plan shall describe the cover that is, or will be, associated with the excavated wetland pit. In addition, the calculated flow inundation frequency of the surface that the wetland pit is located on shall be provided as part of the pre-extraction mining plan, or CHERT recommendation.

Trenches: In order to minimize the impacts to salmonids from trenches, vegetative cover must be provided within the trench in the form of placing woody debris within the excavated trench. The pre-extraction mining plan shall describe the cover that will be associated with the trench.

In-stream conditions may change annually and between sites. The extraction method that best reduces the effects of gravel extraction on spawning habitat and redds, and the extraction method that best reduces channel braiding and widening shall be used at each extraction site. The Corps shall forward each CHERT recommendation for the Mad River, the South Fork Eel River and the Lower Eel River to NOAA Fisheries for their review prior to authorization by the Corps. Each CHERT recommendation will describe how the extraction method(s) will reduce these effects, and it is expected that bar skimming will be infrequently recommended and authorized in spawning reaches, and braided, wide or unconfined reaches.

3. Bar skimming shall not be used, rather alternative extraction designs shall be used in

the lower 2 miles (3.6 km) of the Van Duzen River extraction reach

Extraction techniques (i.e., bar skimming) that have contributed to the increased W/D ratio and, by extension, poor salmonid habitat and migratory conditions found in the lower 2 miles of the Van Duzen River extraction reach shall not be used.

Alternative extraction techniques can be successfully used to minimize or avoid these impacts. Specifically, carefully designed in-channel trenching, alcoves, or wetland pits (described above) shall be used in lieu of skimming in order to avoid or minimize impacts of channel widening and migration blockage. These alternative measures will promote greater channel stability, reduced channel widening and reduced channel braiding.

In-stream conditions may change annually and between sites. The alternative extraction method that best reduces channel braiding, widening, and instability shall be used at each extraction site. To ensure that this occurs, the Corps shall forward each CHERT recommendation for the Van Duzen River to NOAA Fisheries prior to authorization by the Corps. Each recommendation will describe how the alternative extraction method will reduce the effects described above.

4. 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. NOAA Fisheries 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. In addition, NOAA Fisheries 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.

The head of bar buffer is applicable to point bars, but may also be applicable to mid-channel and alternate bars to achieve channel confinement and hydraulic control. When a different protection measure other than the minimum head of bar buffer is proposed for mid-channel and/or alternate bars, evidence will be provided to NOAA Fisheries that channel confinement and hydraulic control is provided for by the alternative protection measure.

5. The minimum skim floor elevation shall be at the elevation of the top of the silt band, or at the elevation of the 35% exceedence flow.

The requirement for the minimum skim floor elevation to be equivalent to the water surface elevation of the 35% exceedence flow may be phased-in during 2003. Due to the approximate correspondence of the top of the silt band and the elevation of the 35% exceedence flow, the top of the silt band, where available, may be used to set the minimum skim floor elevation as a surrogate for the elevation of the 35% exceedence flow in 2003. Further, the top of the silt band, if available, shall be surveyed at each site as part of the monitoring and extraction cross-sections in order to assess its applicability as an indicator of the 35% exceedence flow. Where the elevation of the 35% exceedence flow and the top of the silt band are unavailable, a two-foot vertical offset from the summer low flow will be used to set the minimum skim floor elevation.

To aid compliance with these setbacks the area of extraction shall be clearly flagged, painted with an environmentally benign paint, 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., NOAA Fisheries, CDFG) and CHERT prior to submitting the extraction plans in the spring.

In addition, the elevation at the top of the silt band shall be surveyed at the USGS streamflow gages used by operators to index flow and stage at mining sites. The gage height and estimated discharge rate (according to the most current USGS discharge rating curve) corresponding to the top of the silt band shall be provided to the Corps, NOAA Fisheries, and CHERT with the pre-extraction report. This will assist NOAA Fisheries in its assessment of using the top of the silt band as a surrogate for the water surface elevation that corresponds to the 35% exceedence flow.

6. The timing of temporary channel crossing construction and removal, and the methods used to construct temporary channel crossings, shall minimize inputs of fine sediment into the wetted channel, and minimize impacts to spawning habitat

Temporary channel crossings (bridges and culverts) have the potential to disrupt spawning and rearing habitat, cause turbidity and fine sediment deposition in the low flow channel. Therefore, size and number of temporary channel crossings (bridges, culverts) must be kept to a minimum, and the impacts associated with them must be minimized. All temporary channel crossings and associated fills must be identified and located in the submitted yearly, pre-extraction information. Although bridges will be used for most temporary channel crossings, requests for use of culverts will also be considered for special circumstances (e.g., small, secondary flowing channels). Information describing the need for culverts must be provided to NOAA Fisheries for review of salmonid impact minimization measures, and that culverts allow upstream and downstream fish passage for all life history stages. Other restrictions are described below.

Design and construction: All main channel crossings must be spanned to the maximum length practicable using either a flatcar or bridge span. If encroachment into the low flow channel is necessary to span the wetted channel then abutments shall be constructed from washed cobbles, brow logs, large concrete block, or other appropriate materials that can be placed and removed

with minimal effects. Native gravel can be used if the bridge will completely span the wetted channel, native gravel would not enter the wetted channel, and all abutment materials will be removed from the site upon bridge removal. 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.

Heavy equipment passes across the wetted channel during temporary channel crossing construction and removal will be kept to an absolute minimum. The amount of time heavy equipment is in the wetted low-flow channel shall be minimized by limiting the number of heavy equipment crossings per each temporary channel crossing installation and removal. A maximum of two equipment passes across the channel per installation or removal shall be allowed, although one crossing is preferred when possible.

Timing: Temporary crossings shall be placed after June 15 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 NOAA Fisheries a copy of any request for a time extension for bridge construction or removal for their review before the time extension may be authorized by the Corps, due to the sensitivity of working directly within the wetted channel during the fall migration and spawning season of CC Chinook salmon. It is not expected that extensions will be granted if CC Chinook salmon adults have entered the extraction reach.

Location: Bridge locations shall avoid known spawning areas. Consideration shall be given to temporary channel crossings located at riffles in order to minimize impacts to spawning sites and juvenile salmonids. The middle of riffles may provide the best location for temporary crossings, but crossing location shall be determined on a site-specific basis. The proposed location, and reasoning used to determine how the crossing location minimizes effects to salmonids, shall be included in the CHERT recommendation.

7. Total extraction for 2003 in the Mad River shall not exceed 150,000 cubic yards

Sediment budget estimates for the Mad River vary, and an analysis of the cross-sectional information for the period between 1992 and 2002 is not available at this time. A study plan for the cross-section analysis of the 1992-2002 data will be developed by Humboldt County, and implemented as part of the update to the Mad River Programmatic Environmental Impact Review(PEIR). As the study will be part of the California Environmental Quality Act (CEQA) process, all stakeholders will be involved in study plan development and review. We expect that the study will take approximately 6 to 8 months to complete. The study may help to refine the sustained yield estimate for the Mad River, and the future maximum annual extraction volume may change.

8. Operational conditions

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 may occur during the active work week, Monday through Saturday, but must be removed on or before Saturday of each weekend. Work on gravel bars shall be limited to Monday through Saturday, 7:00 a.m. to 6:00 p.m. Modifications to excavation procedures may be made to increase fisheries and wildlife habitat with Corps approval. Haul roads shall follow the shortest route possible while avoiding sensitive areas such as riparian vegetation, and shall be scarified after extraction is complete to prevent compaction of the gravel bar.

9. 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 breast height (DBH) 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 which must be mapped consists of riparian vegetation which 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).

10. 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 approval is given by owners of these structures and approved by the Corps.

11. Regrading

The project area must be regraded, if necessary, before the water levels rise in the rainy season and must be completed by October 15. 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.

12. Timing of extraction

Unless the letter of permission is specifically modified, gravel extraction shall cease by October 15, 2003. Regrading, if necessary, shall be completed prior to October 15th. Requests for a 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 NOAA Fisheries before a decision is made on the time extension. Also note water crossing timing restrictions described above.

13. 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.

14. 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 the California Department of Fish and Game and U.S. Fish and Wildlife Service.

Permittees with operations on the main stem Eel River, downstream of the confluence with the South Fork Eel River, may affect the western snowy plover. After going through informal consultation with the USFWS, it has been determined that these projects are not likely to adversely affect the western snowy plover if operators follow the conditions of Appendix E. Operators with projects on the main stem Eel River, below the confluence with the South Fork Eel River, who intend to commence operations not in accordance to Appendix E shall notify the Corps so that it can initiate consultation with the USFWS in compliance with Section 7 of the Endangered Species Act.

15. Habitat Enhancement and Protection

Occasionally, gravel extraction operators propose projects that entail gravel extraction with a focus on habitat enhancement. NOAA Fisheries shall advise the Corps on any requests for potential fisheries enhancement projects.

Large woody debris (LWD) deposited in the wetted channel and on floodplains and terraces by floods 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 gravel operators shall be gated and locked to reduce access. Operators should consult with NOAA Fisheries for suggestions on the wording and design of this signing.

16. Special conditions

Additional special conditions may be added to the LOP on a case by case basis to minimize adverse impacts to the aquatic ecosystem and to the scenic and recreational values of the rivers listed in the Wild and Scenic Rivers Act.

LOCATION OF WORK:

An LOP issued under the provisions of this procedure shall apply to work in waters of the United States, including navigable waters of the United States, within Humboldt County, California and also any projects that straddle the county lines.

AUTHORIZATION 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: California's Regional Water Quality Control Board's (RWQCB) certification is required for work within the state of California, except for work within the boundaries of a Federally recognized Indian Reservation (See #5 below). The State has adopted water quality standards including implementation measures which avoid and mitigate adverse impacts and prohibit discharges which pollute waters of the State. Gravel mining extraction activities authorized under this LOP procedure are activities for which the State has waived site specific prescriptive regulation so long as the activity complies with specific conditions and does not violate the standards. Since the RWQCB has waived prescription of waste discharge requirements, the State will take no further action on requests for "401 Certification" for activities that fall within the scope of the waiver. The State, however, retains full authority to enforce its standards.

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 Skyline Boulevard, Suite A, Santa Rosa, CA 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 Stream 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 procedure.

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 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 Water Quality Certification from the EPA or from the Indian Reservation (if it is authorized by the EPA to grant water quality certification). 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.

CONDITIONS OF THE LETTER OF PERMISSION:

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

APPLICATION PROCEDURES:

Applications shall be divided into two categories based on quantity of material removed from the river basins. The two categories are: Class A projects: Projects which remove 5,000 cubic yards of material per year or more; and Class B projects: Projects which remove less than 5,000 cubic yards per year of material. All new projects (See #7 under General Restrictions 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 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, NOAA Fisheries, and CHERT at about the same time. Once 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 NOAA Fisheries for site reviews, or a five working day notice of when the site review is scheduled to occur shall be provided to NOAA Fisheries.

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 restrictions set forth herein. Should operators desire a preliminary review, a mutually agreeable date shall be scheduled between CHERT, the Corps and NOAA Fisheries for site reviews, or a five working day notice of when the site review is scheduled to occur shall be provided to NOAA Fisheries.

In all cases an application for authorization of work under this LOP procedure 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 work to be done (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 permit. Projects will also be considered in relation to other extraction operations.

● **Class A Projects:** Projects that remove 5,000 cubic yards or more per year of material from the river basin. 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 NOAA Fisheries at least two weeks prior to excavation. Pre-extraction reports shall include:

A. Cross-section Surveys: Monitoring and Extraction cross-section surveys shall be done 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 Stream 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 March 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.

II. A post-extraction report shall be submitted to the Corps, CHERT, and NOAA Fisheries 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. Stereoscopic 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 Jan 1 of the following year.

● **Class B Projects:** Projects that remove less than 5,000 cubic yards per year of material from the river basin. Class B projects must be physically separated from other gravel operations to be considered separate projects. Projects cannot be located on the same gravel bar, or on the same parcel number as other projects, and be considered as separate projects. The Corps reserves the right to elevate a Class B project to Class A status.

Project submittal must also 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, submitted by May 15 of the gravel year, that includes:

A. A site map showing project and extraction area boundaries and cross sections on 8.5 by 11 inch or 11 by 17 inch paper. Drawings shall be labeled with approximate scale and quantities of material removed from the site. Plan views must also map any known salmonid spawning sites;

B. A minimum of one monitoring cross-section and five extraction cross-sections per extraction site (See Appendix C for cross-section details);

C. A copy of the SAA signed by the CDFG, or a Riparian Protection and Surface

Mining Permit signed by the Federally recognized Indian Reservation. Permits may be obtained concurrently with the Corps permit;

D. Photos of the mining area before excavation. The point(s) from which the photos are taken shall be shown on a site map along with the direction of the photos.

E. Mapping and description, including size, species and number, of any riparian vegetation that will be removed, cut, or within 25 feet of excavation, stockpiling or trafficking of gravel and any wetland that will be impacted. Also included in submittal shall be a mitigation plan to minimize any unavoidable impacts.

II. A post project report, due by December 1 of extraction year, which shall include:

A. Post-extraction data for extraction and monitoring cross-sections according to Appendix C.

B. Photos of the mining area after excavation. Photos shall be taken from the same location as pre-project photos and be of similar coverage, quality and scale.

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 Dec. 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 Class A operations. Additional site visits can be made upon request by the operator or when otherwise deemed necessary by the Corps, NOAA Fisheries, 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, NOAA Fisheries, and CHERT by email, phone, or fax within two business days of project completion.

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, Calif. Dept. of Fish and Game, Calif. Coastal Comm., Calif. State Land Comm., US Fish and Wildlife Service, etc.):

U.S. Army Corps of Engineers
Regulatory Branch, Eureka Field Office
P.O. Box 4863, Eureka, California 95502
Attention: Mr. Kelly 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' Eureka Office at (707) 443-0855 or send an email to: Kelley.E.Reid@spd02.usace.army.mil

Work may not proceed until the District Engineer has issued an LOP. For projects which have obtained the LOP, the activity may not begin each year until a confirmation letter (Letter of Modification, or LOM) has been issued by the Corps. The Corps will attach the NOAA Fisheries Incidental Take Statement (ITS) to all LOMs issued the modified LOP 96-1 procedure 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 this LOP. The Corps may take actions to rectify projects which 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 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 ~~five~~ one years² from that date 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 LOP procedure. The public notice will supply a summary of past actions and may also seek reauthorization of the this LOP procedure.

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

Michael McCormick
Lieutenant Colonel, Corps of Engineers
District Engineer

² Per Kelley Reid, a typographic error; it is to be removed in the circulated electronic copy of Public Notice. Refer to his 030814.15:36 email

APPENDIX A

CONDITIONS OF LETTERS OF PERMISSION ISSUED UNDER "Gravel Mining and Excavation Activities in Humboldt County"

GENERAL CONDITIONS:

1. The Department of the Army has relied 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 LOP 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.

APPENDIX B

WILD AND SCENIC RIVER SECTIONS IN HUMBOLDT COUNTY, CA

Waterway: section	River Value
Eel River: Humboldt County Line to the Pacific Ocean	Recreational
South Fork Eel: Humboldt County Line to the confluence with the Eel River	Recreational
Klamath River: Humboldt County Line to the Pacific Ocean	Recreational
Trinity River: Confluence with South Fork Trinity River to west boundary of Section 2 T8N R4E	Recreational
Trinity River: West boundary Sect. 2 T8N R4E to confluence of Klamath River	Scenic
South Fork Trinity: Humboldt County line to Todd Ranch in Sect. 18 T5N R5E	Wild
South Fork Trinity: Todd Ranch in Sect. 18 T5N R5E to confluence of Trinity River	Scenic
Van Duzen River: From Dinsmore Bridge to power line crossing above Little Larabee Creek	Scenic
Van Duzen River: From the power line crossing above Little Larabee Creek to the confluence with the Eel River	Recreational

APPENDIX C

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, NOAA Fisheries 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 to follow the guidelines below. Please consult with 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 to 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 to 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 to 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 ft 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:

<i>XS 20+78, Smith Bar, Duke Ready Mix Site, Big River</i>			
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 to be surveyed in each extraction zone or

area.

3. Cross-sections shall be oriented perpendicular to the extraction center line.
- B. Extraction cross-sections to be surveyed prior to extraction, and used to design extraction, calculate extraction volume, and review extraction proposals.
 - C. Extraction cross-sections to 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 to be plotted at the same simple, usable vertical and horizontal scales and . All cross-sections must have a vertical exaggeration of 10. Scales to use for cross-sections are as follows:

<u>Cross Section Width</u>	<u>Paper Size</u>	<u>Horizontal Scale</u>
≤ 500 ft.	8 ½" x 11"	1 in. = 100 ft.
500 ft. - 1200 ft.	8 ½" x 14"	1 in. = 100 ft.
≥ 1200 ft. - 1600 ft.	8 ½" x 14" or 11" x 17"	1 in. = 100 ft.
≥ 1600 ft.	8 ½" x 14" or 11" x 17"	1 in. = 100 ft.

- C. Cross-sections can 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 to 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 to be at the left (LB) endpoint as you face downstream.
- E. Cross sections to 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 to be visible in the reproduced paper copies provided to the CHERT.

- F. Cross sections to 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. 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.

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 purpose of the biological monitoring is to identify adverse impacts that can be avoided, minimized and mitigate by mapping important resources such as fish habitat and riparian vegetation. This monitoring plan is not a river management plan but part of the Corps regulatory requirements to ensure protection of the aquatic ecosystem.

Each applicant will study his/her project reach which shall include the gravel extraction reach (or zone) and distances upstream and downstream of the gravel extraction area equal to half the gravel extraction reach. Modifications to the project reach may be made by the Corps for projects in close proximity to other gravel operators, and for projects that span large distances with relatively small excavations.

Each Class A applicant shall submit the following biological monitoring data to be obtained by a qualified biologist. Each applicant is responsible for ensuring that all data submitted are accurate and obtained by qualified individuals. Failure to employ qualified individuals may require resurveying, and or suspension of the permit.

A. Vegetation

1. All vegetation in each project reach was mapped, at a scale of 1 inch = 500 feet, during the 1996 year or first year of operations for riparian and wetland vegetation and formatted to be consistent to the USFWS National Wetlands Inventory methodology. Mapping of changes in vegetation were required once each year under LOP 96-1. This schedule shall continue under the modified LOP 96-1. Yearly summaries in vegetation changes in age structure and areal coverage can be supplied using stereoscopic aerial photos. Vegetation mapped shall extend a minimum of 100 feet from the top of the banks of the watercourse, or until a change in land use or paved road is found.

B. Anadromous Fish

The Corps, the applicants, CHERT and NOAA Fisheries will develop an extraction reach-specific monitoring plan by August 30, 2003, which will replace the anadromous fish monitoring requirements of the modified LOP 96-1 procedure. The monitoring plan will be reviewed by NOAA Fisheries and approved by the Corps prior to implementation. In the interim, the following biological monitoring will be required.

Wetland Pits: Snorkel surveys of wetland pits, by a qualified fisheries biologist, shall be required to monitor and assess juvenile stranding after high flows that inundate the wetland pit have receded. Wetland pits shall each be surveyed for stranded juvenile salmonids as soon as winter flows have receded, if the winter flow inundated the wetland pit. During the summer

season the wetland pit will be re-surveyed if stranded juvenile salmonids were previously found in order to assess survival. In addition, a monitoring plan that assesses salmonid stranding, which includes a fish rescue plan, if it is needed, shall be submitted as part of the pre-extraction mining plan when wetland pits are used as the extraction methodology.

Trenching: A monitoring plan that assesses salmonid stranding, which includes a fish rescue plan, if it is needed, shall be submitted as part of the pre-extraction mining plan when trenching is used as the extraction methodology.

C. Amphibians

Each project reach shall be surveyed once in early June, August and October to determine the presence or absence of foothill yellow-legged frogs, northern red-legged frogs, and bullfrogs. Surveys will focus on the ponded areas within the floodplain as well as shallow, slow moving water along the river's edges. During the tri-yearly surveys, all suitable habitat shall be investigated and delineated on appropriate aerial photos. Data recorded will include water temperatures taken during the survey, and number of sightings of adult, juveniles, egg masses and tadpoles seen. Visual inspections shall include scans of the stream banks and rivers' edges for egg masses, tadpoles, and adults. If adults are present, the surveyor shall note any adverse affects of the operations on amphibians.

D. Birds

Any gravel operation that begins in the spring (March, April or May) may adversely affect nesting and brooding activities of avian species. Monitoring of avian species to determine use of riparian areas and gravel bars according to sex, age, and breeding status may be required of any operator that commences gravel extraction before June 1. Monitoring shall include point counts and mist netting and shall be approved by CDFG and USFWS personnel.

Monitoring and impact avoidance requirements for the Western Snowy Plover are provided in Appendix E.

E. Mammals and Pond Turtles

No surveys shall be required for mammals and pond turtles, however, anecdotal information shall be recorded during other surveys and shall be submitted to the Corps.

APPENDIX E

WESTERN SNOWY PLOVER OPERATING REQUIREMENTS FOR PROJECTS LOCATED ON THE EEL RIVER BELOW THE CONFLUENCE OF THE SOUTH FORK EEL RIVER NEEDED FOR A "NOT LIKELY TO ADVERSELY AFFECT" DETERMINATION

Projects located on the Eel River, downstream from the confluence of the South Fork Eel River, are not likely to adversely affect the western snowy plover if:

1. Gravel extraction commences after September 15; or
2. Gravel extraction commences on or after August 16, and an USFWS approved biologist has surveyed the entire gravel bar, on or after August 16th, and not found western snowy plover nests and/or chicks; or
3. Gravel extraction commences on or after August 16, where a USFWS approved biologist has surveyed the entire gravel bar, on or after August 16th, found western snowy plover nests and/or chicks, and the operator:
 - a. has the bar surveyed each morning, by an USFWS approved biologist, to locate the discovered nests and/or chicks prior to gravel extraction; and
 - b. maintains a 300 meter buffer between the nests and/or chicks morning location and operations; and
 - c. halts operations the first day no nests or chicks are found on the bar; and
 - d. continues surveying for two more consecutive days to locate chicks. Surveys can stop on the third consecutive day of not finding chicks. Gravel extraction operations, however, can resume on the second consecutive day.