STATE OF OREGON
PROVISIONAL STATE POSITION
PACIFICORP'S PROSPECT HYDROELECTRIC PROJECT
OREGON STATE WATER RIGHT NOS.
PC 720, PC 721, AND PC 739
FEDERAL LICENSE NO. 2630

March 27, 2003

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I. Introduction

In October 2002, PacifiCorp submitted for public review a draft license application (DLA) for renewal of its Federal Energy Regulatory Commission (FERC) License No. 2630 for the Prospect 1, 2, and 4 Hydroelectric Project (Project). The Project is located on Red Blanket Creek and the Middle and North Forks of the Rogue River located in southwestern Oregon.

In response to PacifiCorp's release of its DLA, state agencies affected by the Project may prepare a provisional state position (PSP). This document is the State of Oregon Hydroelectric Application Review Team's (HART's) PSP on the Project's DLA. Where a project, such as the Prospect Project, has non-expiring water rights, known as Power Claims (PCs), the PSP includes the following components: (1) initial assessment of Project compliance with Oregon water quality standards and identification of Protection, Mitigation, and Enhancement measures appropriate for Clean Water Act (CWA) Section 401 Water Quality Certification and (2) recommendations to FERC regarding fish and wildlife, also known as 10(j) recommendations. Oregon Revised Statutes (ORS) 543A.095(4).

In addition, the PSP summarizes the state's reauthorization policy, standards of review, Project benefits and impacts on resources, reauthorization issues, proposes protection, mitigation, and enhancement (PM&E) measures, and considers PacifiCorp's proposed PM&E measures. Also, where there is insufficient information in the DLA for the state to comment fully on whether the Project will meet its standards, the PSP identifies those areas and requests that PacifiCorp provide more information.

II. State Agency Review of Applications for Reauthorization of Hydroelectric Projects

Oregon law requires affected state agencies to conduct a coordinated review of a project that is seeking to renew its existing FERC license. ORS 543A.020 and 543A.400(4)(b). This coordinated review of an existing hydroelectric project, such as PacifiCorp's Prospect Project, begins when the applicant for a new license notifies the state that it will renew its FERC license and invites interested parties, such as the state, to participate in the license renewal proceeding.

A coordinated review means that the state will a) resolve any internal state agency conflicts concerning the Project by the time an applicant issues its final license application, b) fully participate in the federal license renewal proceeding, including reviewing and commenting on the applicant's DLA and final license application, c) determine whether the Project will meet applicable state standards, and d) develop and issue sequential and iterative unified positions that include the elements set forth in ORS 543A.105 and discuss whether the state supports renewal of the applicant's license throughout the federal proceeding. These positions are formally known as the PSP, Provisional Unified State Position (PUSP), Second Proposed Unified State Position (SUSP) and Final Unified State Position (FUSP), and will be discussed in further detail below.

The state's coordinated review and state positions are developed through the formation of a HART, which is made up of the affected state agencies. The Prospect HART includes the Oregon Department of Environmental Quality (ODEQ), Oregon Department of Fish and Wildlife (ODFW), Oregon Water Resources Department (OWRD), and the Oregon Public Utility Commission (OPUC).

Development of the state position is an iterative process and the first written statement of that position is a PSP. The PSP is made available for a 30-day public comment period after the applicant has issued its DLA, but before the applicant issues its final license application. Based on the comments received, the state may revise its position and issue a PUSP, generally, though not always, 160 days before the applicant issues its final license. After the applicant issues its final license application, the state prepares a SUSP. The SUSP receives a 60-day public comment period at the same time that the draft CWA Section 401 Water Quality Certificate is issued for public comment by ODEQ.

ODEQ anticipates that PacifiCorp will apply to FERC for a new operating license on or about July 1, 2003. In that event, ODEQ will require PacifiCorp to submit a complete application for CWA Section 401 Water Quality Certification. ODEQ will act upon the application for Section 401 certification in the manner described in Oregon Administrative Rule Chapter 340, Division 48. ODEQ action on the application for certification could take up to one year.

HART considers the public comment received on the SUSP in its development of the FUSP. The FUSP includes the CWA Section 401 Water Quality Certification, Section 10(j) fish and wildlife recommendations, any other conditions recommended for inclusion in the state and federal license for the Project, as well as any additional information requests to be addressed in the federal proceeding. ORS 543A.115. The FUSP is submitted to FERC and PacifiCorp at the same time the state's 10(j) fish and wildlife recommendations are due to FERC. The 10(j) recommendations set forth comments and recommended terms and conditions to be included in the Project's federal license regarding fish and wildlife issues.

III. State Policy on Reauthorization of Hydroelectric Projects

It is the policy of the state to:

- recognize that existing projects have resulted in both benefits and costs to society, and that the opportunity exists on reauthorization to promote the public benefits while minimizing the public costs;

- maintain or enhance the natural resources of the state and to protect the natural resources of the state from adverse impacts caused by the continued existence of a project;

- protect the health and safety of the residents of the state; and

- require OWRD and other affected state agencies to conduct a coordinated review of projects seeking reauthorization in order to develop a unified state position in any local, state, or federal proceedings related to the reauthorization of hydroelectric projects.

IV. Standards

State law defines the minimum requirements for the renewal of hydroelectric projects within Oregon and issuance of new state water rights. ORS 543A.025. For the Prospect Project, these standards will be used by the HART as a framework for providing state input to the FERC relicensing process. These standards are summarized as follows:

- Require mitigation for adverse impacts to fish and wildlife resources attributable to the project due to new construction or operational changes, and ongoing adverse impacts at the time of reauthorization.

- Promotion, through mitigation measures, of restoration and rehabilitation of fish and wildlife to levels identified in goals, plans and policies of the Fish and Wildlife Commission.

- Consistency with any plan adopted by the Pacific Northwest Electric Power and Conservation Planning Council for fish and wildlife resources.

- Compliance with water quality standards, including full support of sensitive beneficial uses designated by rule for the Rogue Basin, meeting water quality standards and criteria, and the antidegradation policy.

- Must not endanger the public health or safety.

- Protection, maintenance, and enhancement of wetland and riparian resources.

- Maintenance, protection, or enhancement of other existing resources, including recreation, cultural, and aesthetic resources.

V. Project History

The Project is located in Jackson County, Oregon, near the unincorporated town of Prospect, exclusively on PacifiCorp property. The Project has three diversion dams on Red Blanket Creek and the Middle and North Forks of the Rogue River, which divert water to three powerhouses referred to as the Prospect No. 1, Prospect No. 2, and Prospect No. 4 powerhouses.

In addition to the dams and powerhouses mentioned above, the Project also includes spillways; intakes and affected reaches; water conveyance system and penstocks; tailraces; fish passage facilities; recreational facilities; access roads, reservoirs; turbines and generators; transmission

lines and substations; and additional mechanical, electrical, and transmission equipment appurtenant to the Project.

Construction of the Project began in October of 1904 with the Prospect No. 1 powerhouse, a reinforced-concrete structure housing a single horizontal Francis turbine that began operating in 1911 and ended with the construction of Prospect No. 4 Powerhouse in 1944. Between 1932 and 1935, OWRD issued three certificates for PC's to use water for hydroelectric production at the Project. PC 720 has the earliest priority date of these rights, October 8, 1904, and is for 400 cfs from the Rogue River. PC 721 has the second oldest priority date January 1, 1924, and allows appropriation of 75 cfs from Red Blanket Creek, 150 cfs from the South Fork Rogue River, and 150 cfs from the Middle Fork Rogue River. The final right, PC 739, has a priority date of August 24, 1928 and is for 275 cfs from the Rogue River. These rights allow for the development of 57,108 theoretical horsepower. The Project is able to generate a maximum of 36.76 megawatts (MW) of electricity.

The Project's current FERC license No. 2630 was issued on July 28, 1980; however, FERC made the license retroactive to May 1, 1965. The FERC license expires on July 1, 2005.

On January 11, 2000, PacifiCorp issued a Notice of Intent to relicense the Project, choosing FERC's traditional relicensing process. Also in January 2000, PacifiCorp distributed its First Stage Consultation Document (FSCD), which briefly described the Project and potential resource studies, and declared its intention to follow an expedited schedule for conducting relicensing studies.

PacifiCorp held joint agency-public meetings to review the FSCD and the relicensing process, take comments and answer questions regarding the process.

HART worked cooperatively with PacifiCorp and provided comments regarding the following topics: statutes, rules, plans, goals, resource concerns, and study proposals and plans. The HART provided formal written comments on the FSCD within the 60-day period following the public meetings (ODEQ comments dated March, 7, 2000 and ODFW comments dated April 17, 2000). The HART identified deficiencies in proposed studies, suggested modifications to the study plans, and requested that studies not identified by PacifiCorp be conducted.

On March 10, 2000, HART and PacifiCorp held a meeting at the ODEQ office in Portland, Oregon. At this meeting, PacifiCorp gave an overview presentation of the Project and a presentation on the structure of the relicensing. HART gave presentations on State of Oregon involvement, unified state position development, cost reimbursement agreements, and Project PC amendments.

On March 13, 2001, PacifiCorp presented the "Interim Resource Report – 2000 Study Period" for the Project to interested parties at the Windmill Inn in Medford, Oregon. This report identified resource areas (i.e. recreation, cultural, aesthetics, etc…), the area to be studied, methods to be used, preliminary results, and work scheduled in 2001.

On May 31, 2002, PacifiCorp informed the HART that a complete DLA could not be filed with the state by July 2002, one year prior to filing a final license application with FERC. The HART granted a 90-day filing extension to allow PacifiCorp more time to develop a more complete DLA. The HART reviewed the DLA and sent its comments to PacifiCorp on December 31, 2002, within the 90-day comment period required by FERC regulations.

The HART found the DLA lacked critical information needed to assess Project impacts including water quality, fish entrainment studies, macroinvertebrate studies, ramping rate studies, and instream flow studies. The HART concluded that the DLA was incomplete and did not provide sufficient information to evaluate the impact of the Project on the state's fish and wildlife resources. To review HART's comments on the DLA for the Project, go to the world wide web at "ftp://ftp.wrd.state.or.us/pub/Publications/" and select the document entitled "HARTCommentsDLA.pdf". If you have any difficulty in retrieving this document from the Internet, please call Craig Kohanek (OWRD) at 503-378-8455, extension 289.

VI. Project Benefits

Hydroelectric power generation is approximately 13.5 percent (1,078 MW) of PacifiCorp's total generation (8,000 MW). The Project is one of PacifiCorp's 53 hydroelectric facilities, and its 36.76 MW represents approximately 3.4 percent of its hydroelectric generation and 0.5 percent of its total generation. Annually, the Project generates an average of 285,177 megawatt hours (MWh) of electricity.

Project facilities contribute to the property tax base of Jackson County. In the 2002-2003 tax year, PacifiCorp paid the County $65,938 in property taxes. Property tax revenues help support schools and other public services provided by Jackson County. The Project currently provides jobs for three full-time employees, with total wages of $228,900 in 2002, in an area of Jackson County with limited employment opportunities. A fourth employee is expected to be hired in the near future. The Project supplies low-cost electricity to the equivalent of about 4,000 family residences.

The Project includes the North Fork Park, a facility that supports angling, picnicking, hiking, flatwater boating, swimming and wading activities. It also serves as a place to rest and relax. There is an undeveloped area that supports public recreation on the 2.5 mile stream reach between the North Fork diversion and the Prospect No. 1 powerhouse. The area is used for hiking, sightseeing, picnicking, and relaxation.

VII. Summary of Project Resource Impacts and Preliminary Conditions

Below, the Project's impacts are briefly summarized by resource area along with a summary of PacifiCorp's proposed PM&Es to address those impacts. PacifiCorp's PM&E measures are designated as "PACIFICORP A1," "PACIFICORP A2," etc., and reference the applicable resource section of this document and the specific comment number. PacifiCorp's proposed PM&Es were summarized from information that PacifiCorp provided in its DLA and are not a

comprehensive listing of PacifiCorp's PM&E measures. PacifiCorp's proposed PM&E measures are followed by HART's proposed conditions to be included in the CWA Section 401 Water Quality Certification, and 10(j) recommendations as well as the Project's new federal license. HART conditions are designated as "HART A1," "HART A2," etc. Please note that "PACIFICORP A1" and "HART A1," for example, are not intended to directly correspond to each other.

While HART has summarized PacifiCorp's proposed PM&Es in this PSP, at this early stage of application review, HART is still evaluating whether PacifiCorp's PM&Es are sufficient to meet state standards and CWA Section 401 Certification. Consequently, HART is not taking a position as to whether it agrees or disagrees with particular PM&E measures proposed by PacifiCorp in its DLA. HART is also not taking a position on whether, taken as a whole, PacifiCorp's PM&E measures adequately address and remove adverse Project impacts. Moreover, HART's proposed conditions are not yet comprehensive, but are the conditions that HART has been able to identify since the DLA was submitted. These proposed conditions may change as more information becomes available. At this time, no effort is being made to reconcile PacifiCorp's PM&Es with HART's proposed conditions. However, as this is an iterative process, subsequent HART positions on the Project (in particular the SUSP and FUSP) will identify which of PacifiCorp's PM&E measures HART finds are adequate to address Project impacts and which are not, as well as clarifying additional conditions HART believes that PacifiCorp must undertake to meet state standards.

It should be noted that HART has requested and is awaiting more information from PacifiCorp before it finishes developing its position on the Project. As mentioned before, these issues are identified in significant detail in HART's comments on PacifiCorp's DLA, which can be found on the Internet at "ftp://ftp.wrd.state.or.us/pub/Publications/" by selecting the document entitled "HARTCommentsDLA.pdf". In contrast to the detailed comments provided in HART's comments on the DLA, this PSP document only briefly identifies those major issues.

A. Fish and Wildlife Resources

1. Impacts

The Project adversely affects fish, aquatic, terrestrial, and riparian resources. It blocks or obstructs passage of fish, causing fragmentation of fish populations, entrains fish into its diversions because the power canals are not screened, and captures stream bedload.

In addition, the Project substantially reduces flow in 14-miles of fish bearing streams by cumulatively diverting up to 1,050 cfs from four streams. The existing operation of the Project alters the natural flow regime of the North Fork, Middle Fork, South Fork, and Red Blanket Creek and reduces the habitat available to the fish resources. It should be noted that the current Project FERC license does not require minimum flow releases in three of the four bypass reaches. As a result, when discharge in the North Fork and Red Blanket Creek is nearly equal to the hydraulic capacity of the Project, little water is released to the bypass reaches, and the amount of aquatic habitat is substantially reduced.

The North Fork Reservoir inundates riparian and stream habitat. Two of the diversions do not have fish ladders. One existing ladder is inadequate for efficient fish passage.

Flume failures result in impacts to riparian and aquatic habitats by erosion and sediment deposition. The Project includes approximately 9.25 miles of canals, flumes, and penstocks (waterways). These are obstacles to wildlife moving through the area, disrupting dispersal, migration, and interbreeding among sub-populations. Also, Project-caused water level fluctuations (ramping) adversely impact aquatic organisms. The Project inundates stream and riparian areas, captures spawning gravel, causes impacts to water quality, and disrupts wildlife connectivity.

The DLA filed with the State of Oregon does not provide adequate proposals to protect, mitigate, or enhance natural resources affected by the Project and its operation.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed the following PM&E measures to mitigate for Project impacts. These measures are only briefly summarized here, but are discussed more fully in PacifiCorp's DLA at Volume 1, Exhibit E3, pages 45-47 and Volume 1, Executive Summary, pages 7-8.

PacifiCorp A1 — Examine disposal practices for Red Blanket Creek diversion dam and canal. These disposal practices could be modified to include more regrading to natural contours that avoid concentrated canals and prevent back flow into the canal, thus minimizing sediment entrainment and erosion.

PacifiCorp A2 — Consider increasing sluicing of accumulated sediment during all high flows over some critical base level. This action would diminish the potential for larger, infrequent, releases of sediment, and reduce the potential for sediment-laden water to be diverted into the main power canal and forebay.

PacifiCorp A3 — Identify and institute appropriate instream flow regimes for Project affected stream reaches that will enhance currently residing fish populations, in consultation with agencies.

PacifiCorp A4 — Complete ramping rate evaluation to identify the most appropriate ramping schedule to minimize impacts to fish and aquatic resources that are occurring due to Project operations. In consultation with ODFW, identify appropriate ramping rates to reduce Project impacts on fish populations currently residing in stream reaches downstream of Project facilities.

PacifiCorp A5 — Develop and implement, in consultation with ODFW and the United States Fish and Wildlife Service (USFWS), appropriate PM&E measures

relating fish passage and entrainment at Project facilities or negotiate a waiver with fish resource agencies for fish passage requirements on all Project facilities.

PacifiCorp A6 Evaluate alternatives to traditional fish ladders and screens to provide enhanced benefit to the fisheries resources in the basin.

PacifiCorp A7 Consult with resource agencies to generate a plan for additional wildlife crossings at suitable locations on the fenced canals.

PacifiCorp A8 See PacifiCorp E6.

PacifiCorp A9 Continue Environmental Training Program for PacifiCorp maintenance personnel to protect sensitive resources.

PacifiCorp A10 Maintain a wildlife escape structure in the Red Blanket earthen canal.

PacifiCorp A11 Maintain fencing of the water conveyance system to protect wildlife resources and the public.

PacifiCorp A12 Maintain wildlife crossings along the water conveyance system.

3. Conditions Proposed by HART

The following conditions are draft ODFW 10(j) recommendations. These 10(j) terms and conditions are the State of Oregon's recommendations to FERC on what terms and conditions should be in the Project's new federal license to protect, mitigate and enhance fish and wildlife populations and their habitats affected by the Project. The HART believes that the Project can meet fish and wildlife standards if its impacts are properly mitigated. The 10(j) recommendations are included in Attachment 1, but the major recommended conditions are summarized below. HART proposes that PacifiCorp shall undertake the following measures:

HART A1 Construct, operate, and maintain fish ladders on Red Blanket Creek and Middle Fork Rogue diversion dams. Construct a fish ladder at North Fork Rogue diversion dam; or, provide alternative mitigation in lieu of a fish ladder.

HART A2 Construct, operate, and maintain fish screens on North Fork Rogue, Middle Fork Rogue, and Red Blanket Creek diversions.

HART A3 Enhance regulated flows in the bypass reaches of North Fork, Middle Fork, South Fork, and Red Blanket Creek.

HART A4 Eliminate or modify ramping in Project affected reaches to protect fish, wildlife and their habitat. Implement ramp rates consistent with current standards for protection of aquatic organisms.

HART A5 Develop and implement a maintenance plan to eliminate or minimize flume failures. Develop an action plan to immediately assess impacts of flume failures on natural resources and remediate impacts of future failures or catastrophic discharges from Project facilities.

HART A6 Implement gravel augmentation to compensate for captured bedload by North Fork Reservoir.

HART A7 Improve existing wildlife crossings and provide additional opportunities for wildlife to safely and freely cross waterways or other Project facilities.

HART A8 Implement measures to minimize adverse interactions between Project power lines and birds.

HART A9 Recognize unanticipated adverse impacts and develop appropriate mitigation measures. Develop a written plan to direct Project management to minimize unanticipated adverse impacts, recognize such impacts when they occur, consult appropriately with ODFW, and promptly remediate and mitigate the impacts.

HART A10 A new license should include conditions for managing emergencies at Project facilities that may cause harm or mortality to fish and wildlife species or their habitats. The license should also include conditions enabling ODFW to recommend new mitigation measures in the event that existing and proposed measures prove ineffective or if a fish or wildlife species is newly listed under the state or federal Endangered Species Acts (ESA).

HART A11 If at any time, an unanticipated emergency situation arises where fish or wildlife are being killed, harmed, or endangered by any of the Project facilities or as a result of Project operation, PacifiCorp shall immediately take appropriate action to prevent further loss. PacifiCorp shall immediately notify the nearest office of the ODFW, USFWS, ODEQ and OWRD, and comply with restorative measures recommended by the resource agencies.

HART A12 These conditions may be amended at any time during the term of the license if unanticipated impacts to fish and wildlife (or fish and wildlife habitat) have occurred or will occur, or if there is a change in the ESA status of a species affected by the Project.

HART A13 Construct, operate, and maintain fish screens on North Fork Rogue, Middle Fork Rogue, and Red Blanket Creek diversions to prevent loss of fish from the streams and enhance and maintain recreational opportunity.

B. Wetlands, Riparian and Upland Habitat (Botanical Resources)

1. Impacts

i. Wetlands

Riparian and wetland vegetation downstream of the Middle Fork Dam is adversely impacted by sediment management practices. Riparian vegetation downstream of Red Blanket and North Fork dams is affected by fluctuating stream flow and sediment management. Road grading and grounds maintenance disturbs vegetation.

ii. Riparian and Upland Habitat

The presence and operation of the Project has resulted in loss and degradation of riparian vegetation along Project waterways, roads, and other facilities. Features associated with the Project (dams, waterways, and roads) interrupt the continuity of riparian areas and impede the movement and dispersal of animals. Riparian communities downstream of the dams have been altered by reduced flows. Waterway spills and failures can disturb riparian areas.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed to undertake PM&E measures to mitigate for impacts to botanical resources. These measures are summarized below, but more detail is provided in PacifiCorp's DLA at Volume 1, Exhibit E3, page 112 and Volume 1, Exhibit E6, pages 22 and 26.

PacifiCorp B1	Consult with resource agencies to develop a plan for establishing additional wildlife crossings at suitable locations on the fenced canals.
PacifiCorp B2	See PacifiCorp E6.
PacifiCorp B3	Comply with federal, state, and local laws for protection of wetlands, including Section 404 of the Clean Water Act of 1972, which gives responsibility to the US Army Corps of Engineers to regulate the discharge of fill and dredged materials into waters of the United States; Section 10 of the Rivers and Harbors Act of 1899, which prohibits any actions that obstruct or alter navigation in the nation's waters; Executive Order 11990, which directs federal agencies to make an effort to minimize or avoid adverse impacts to wetlands during the course of their business activities and to refrain from supporting construction within wetlands as much as possible; the Oregon Removal-Fill Law regulating discharge of fill and dredged materials into wetlands or other waters of the state, and the Jackson County Comprehensive Plan, which is intended to conserve open space and protect natural and scenic resources, including wetlands.

3. Conditions Proposed by HART

HART proposes that PacifiCorp shall undertake the following measures to mitigate for impacts to botanical resources:

HART B1 Develop a written plan for implementing measures, including waterway modification, to prevent or reduce the occurrence of flume failures or other waterway failures.

HART B2 Develop a written plan of erosion control procedures.

HART B3 Mitigate for impacts and damage to riparian and wetland areas resulting from Project operation.

HART B4 Plan "vegetation management" within the Project area to prevent damage to wildlife cover and erosion. Use native plant species for revegetation efforts.

HART B5 Maintain and protect wetland habitat in the Project area.

HART B6 Enhance regulated flow releases in Project bypass reaches to maintain elevated, stable water tables beneath riparian edges.

HART B7 Mitigate for adverse impacts to riparian areas resulting from Project maintenance and operation.

C. Recreation

1. Impacts

HART will provide information on Project impacts to recreational resources in subsequent state positions.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed to undertake PM&E measures to mitigate for impacts to recreational resources. These measures are summarized below, but more detail is provided in PacifiCorp's DLA at Volume 1, Exhibit E5, page 9.

PacifiCorp C1 Develop a disabled access picnic facility at North Fork Park to provide picnicking opportunities for persons in need of accessible facilities.

PacifiCorp C2 Construct a disabled access interpretive trail from North Fork Park to Rogue River National Forest Boundary to expand accessible recreation opportunities.

PacifiCorp C3 Construct accessible restroom facilities at North Fork Park.

PacifiCorp C4 Improve access and parking facilities at North Fork Park.

PacifiCorp C5 Develop a group picnic facility at North Fork Park.

PacifiCorp C6 Develop an environmental, cultural, and Project-related interpretative kiosk at North Fork Park.

PacifiCorp C7 Post signs to better mark the Rogue River Trail route through the Project.

PacifiCorp C8 Distribute results of the Prospect Local Recreation Survey.

3. Conditions Proposed by HART

HART proposes that PacifiCorp shall undertake the following measures to mitigate for impacts to recreational resources:

HART C1 Continue to allow public access to Project reservoirs, stream, and adjacent lands for wildlife viewing, angling, hunting, and other recreational purposes.

D. Water Quality

1. Impacts

As mentioned above, HART submitted detailed comments on PacifiCorp's DLA that addressed ODEQ water quality issues and information needs. To review these comments go to the Internet at "ftp://ftp.wrd.state.or.us/pub/Publications/" and then select the document entitled "HARTCommentsDLA.pdf". Below is a brief summary of those issues.

Based on PacifiCorp's DLA, ODEQ has tentatively determined that water quality and aquatic life within the South Fork Rogue, Middle Fork Rogue and Rogue River, and Red Blanket Creek are adversely affected by Project impoundments and diversion of water from these surface streams.

The CWA Section 303d list (www.deq.state.or.us/wq/303dlist/303dpage.htm) presently identifies known conditions of water quality impairment in the upper Rogue River basin above Lost Creek Reservoir. While no stream segments within Project affected surface water are contained in the 303d list, ODEQ notes that adverse water quality conditions related to Project facilities and operations have been measured and observed. As a result, PacifiCorp is conducting additional water quality studies to further identify and document Project effects. Impacts identified to date include temperature and dissolved oxygen (DO) excursions above Oregon water quality criteria, and maintenance-related rises in stream turbidity and other water quality indicators. PacifiCorp observed no measurable effect on total dissolved gas (TDG) in studies conducted thus far.

The HART anticipates receiving more precise conclusions from PacifiCorp, based on additional water quality monitoring when PacifiCorp submits the final license application and the application for CWA Section 401 Water Quality Certification around June 2003.

Project effects on water quality noted in the DLA include high stream temperatures and low DO during the summer and fall, diel changes in temperature, DO and pH, reduced fishery and riverine habitat, river stage fluctuations, and changes in extreme low temperature profiles in the North Fork bypass reach. Flume failures and road maintenance can cause significant erosion and sediment transport to surface water, and increased turbidity. Ramping during maintenance also affected turbidity.

Project operations may continue to influence water quality after instituting measures to address impacts to water quality. If so, ODEQ may require long term monitoring and adaptive management mechanisms to minimize adverse effects and optimize the effectiveness of protection, mitigation, and enhancement measures.

The application for CWA Section 401 Water Quality Certification must provide reasonable assurance that Project operations under a new FERC license will protect beneficial uses, not degrade water quality from existing conditions, meet Oregon water quality standards and assigned load allocations from Total Maximum Daily Loads, whichever are appropriate, and correct water quality standard exceedances that are attributable to present Project operations.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed to undertake PM&E measures to mitigate for impacts to water quality. These measures are summarized below, but more detail is provided in PacifiCorp's DLA at Volume 1, Exhibit E2, page 38-40.

PacifiCorp D1	Continue to model temperature and water quality in Project-affected stream reaches to further assess potential effects of the Project on water temperature and temperature-dependent variables such as DO. Use results of this modeling effort in conjunction with the results of instream flow studies to develop minimum flow recommendations for the Rogue River, Red Blanket Creek, and Middle Fork Rogue River.
PacifiCorp D2	Consult with ODEQ and ODFW on an appropriate maintenance schedule for canals to address water quality impacts.

3. Conditions Proposed by HART

There was not enough water quality information or analysis in the DLA about environmental conditions, Project effects on water quality, or specificity about water quality-related PM&E measures for the ODEQ to provide a set of proposed CWA Section 401 Water Quality Certification conditions in this PSP. Proposed conditions for certification will be forthcoming based upon the receipt and review of a complete application for CWA Section 401 Certification

pursuant to Oregon Administrative Rule Chapter 340, Division 48. ODEQ will use the HART process to coordinate proposed conditions for water quality certification with other Oregon state agencies to avoid inadvertently creating conflicting objectives and PM&E measures.

E. Water Use

1. Impacts

As mentioned before, the Project is granted the right to use water for hydroelectric production under PC 720, PC 721 and PC 739. PC 720, with a priority date of October 8, 1904, is for 400 cfs from the Rogue River. PC 721, with a priority date of January 1, 1924, allows appropriation of 75 cfs from Red Blanket Creek, 150 cfs from the South Fork Rogue River, and 150 cfs from the Middle Fork Rogue River. PC 739, which has a priority date of August 24, 1928, is for 275 cfs from the Rogue River. As these PCs do not expire, PacifiCorp is not required to renew them during this reauthorization process.

Project impoundments and forebays do not have enough storage capacity for an operation that stores water and releases it for generation at a later time, which is also known as a "ramping" operation. With virtually no storage area, flow in excess of the hydraulic capacity of the powerhouses is spilled downstream. The Project does not vary operational mode based on demand for electricity and therefore is not a peaking facility.

The Project has a history of wasting water due to leakage, waterway (i.e. flume, stave, canal, and conduit) failures due to insufficient maintenance and replacement of faulty systems, and vandalism. PacifiCorp has made some capital improvements to these waterways and has committed to continue making improvements.

There have been three recent flume failures associated with the Project. The most recent flume failure occurred on September 18, 2001. The failure released approximately 150 cfs, which flowed down the bank into Red Blanket Creek for approximately 1.5 hours, discharging about 6 million gallons of water. On July 24, 1999, about 1,200 feet north of the Middle Fork Rogue River, approximately 290 cfs of water was discharged from the ruptured flume for about 8 hours. The water intercepted an existing drainage and flowed west-southwest where it entered the Middle Fork Rogue River. On June 21, 1998, a flume failure occurred several hundred yards northwest of Red Blanket Creek. The canal was conveying approximately 275 cfs of water, which was stopped shortly after notification of flume failure. The water pooled in a flat area before entering Red Blanket Creek within several hundred yards of the flume.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed to undertake the following measures in regard to its water use. These measures are summarized below, but more detail is provided in PacifiCorp's DLA at Volume 1, Exhibit H, page 21. PacifiCorp E1 and E3-E6 are existing measures.

PacifiCorp E1 Installed an alarm system in 2000 to provide immediate notification of a flume failure.

PacifiCorp E2 Continue assessment of flume conditions and potential future effects from flume failures.

PacifiCorp E3 Replaced flowline to the Prospect No. 2 powerhouse in Fall, 2002.

PacifiCorp E4 Installed flume liners in flumes 3, 6, and 7 in 2002.

PacifiCorp E5 Installed automated water level monitors in 2000 on the Main Canal (from the Middle Fork Rogue River), with four monitoring sites, located on the lower ends of flumes 1, 5, 7, and 9, that send information to the Merwin Hydro Control Center and the Operations office. In the event of flows that fall outside upper and lower control points, the system initiates an alarm to alert operators.

PacifiCorp E6 Updated the Rogue River Environmental Management System Compliance Handbook, which contains extensive guidance on procedures and practices to be implemented in routine and emergency situations at the Prospect Project.

PacifiCorp E7 Install flume liners in flumes 1, 2, and 5 in 2003.

PacifiCorp E8 Install flume liner in flume 9 in 2004.

PacifiCorp E9 Evaluate flume replacement options.

PacifiCorp E10 Replace timbers at the head of the canal on the Red Blanket Creek diversion in 2003.

3. Conditions Proposed by HART

HART proposes that PacifiCorp shall undertake the following measures to mitigate for impacts to water resources:

HART E1 Install gauging which will ensure that the Project does not appropriate more water than allowed under the Project's water rights.

HART E2 Demonstrate empirically that water is being used for a beneficial purpose without waste. This measure includes eliminating, to the maximum extent possible, the waste of 5-9 cfs of water that PacifiCorp indicates is currently wasted.

HART E3 Install and maintain gauge stations at the head of the bypass reaches to monitor compliance with the minimum flow requirements in the bypass reaches and flow and ramping rates downstream of the powerhouses.

F. Scenic and Aesthetic Values

1. Impacts

The primary visual impacts associated with the Project include: diversion dams, waterways, powerhouses, penstocks, transmission lines, fences, offices, roads, electrical substations, and other man-made structures.

2. Conditions Proposed by PacifiCorp

PacifiCorp has not proposed PM&E measures in the DLA concerning scenic and aesthetic values affected by the Project.

3. Conditions Proposed by HART

HART proposes that PacifiCorp shall undertake the following measures to mitigate for impacts to scenic and aesthetic resources:

HART F1 Minimize and mitigate Project operation and maintenance activities that adversely impact scenic and aesthetic values to maintain natural and aesthetic values.

G. Historic and Archaeological Resources

1. Impacts

In 1995, the Oregon State Historic Preservation Office determined the Prospect Project Nos. 1 and 2 meet the National Register eligibility criteria as a Historic District with a period of significance extending from 1911 to 1933. The Project's proposed Historic District eligibility is based on the Project's significance at the local level for its role in regional economic and industrial development, and industrial architecture and engineering. The Project has no known impacts on archaeological resources.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed to undertake PM&E measures to mitigate for impacts to historical, cultural, and archaeological resources. These measures are summarized below, but more detail is provided in PacifiCorp's DLA at Volume 1, Exhibit 4, pages 8-11. Please note that these measures are ongoing in nature.

PacifiCorp G1	Maintain the integrity of the Project's National-Register-eligible properties while maintaining the flexibility needed to manage the Project as required by law and operating conditions. Preservation techniques include painting, retooling, and repairing existing equipment, and using in-kind materials when replacement is needed.
PacifiCorp G2	Follow measures set out in the Historic Property Management Plan (HPMP), which include several measures to guide PacifiCorp staff in maintaining the Project's historic resources.
PacifiCorp G3	Retain appropriate use of properties. Properties shall be used for their historic purpose or placed in a new use that requires minimal change to the defining characteristics of the property, its site, and its environment.
PacifiCorp G4	Retain and preserve the character of historic properties. Avoid removal of historic materials or alteration of features and spaces that characterize a property.
PacifiCorp G5	Maintain appropriate era for historic properties. Each property shall be recognized as a product of its time, place, and use.
PacifiCorp G6	Retain historic changes to historic properties.
PacifiCorp G7	Retain distinctive features, finishes, and construction techniques, or examples of craftsmanship that characterize a property.
PacifiCorp G8	Favor repair over replacement of historic features.
PacifiCorp G9	Use appropriate cleaning methods.
PacifiCorp G10	Protect archaeological resources affected by the Project. If disturbances occur, mitigation measures must be implemented.
PacifiCorp G11	Alterations, including new additions, exterior alterations, or related new construction, shall not destroy historic materials that characterize the property.
PacifiCorp G12	Design removable alterations so that if new additions or related new construction is removed in the future, the essential form and integrity of the historic property and its environment will remain unimpaired.
PacifiCorp G13	Ensure that routine actions, including maintenance and repairs, alterations to buildings, structures, and sites, etc., are historically sensitive.
PacifiCorp G14	Train PacifiCorp staff regarding historic properties and the HPMP.

3. Conditions Proposed by HART

At this time, HART has no proposals regarding these resources, but may include such PM&E measures in future state positions.

H. Geologic Issues

1. Impacts

Moderate and small landslides along steep areas have occurred during the operational life of the Project. Small-scale slides are commonplace during heavy rainfall along roadways where ash deposits occur. A slide across the river from flume 9 occurred during a heavy rainfall in an area recently clear-cut. The combination of steep slopes, thick ash/soil/colluvial units with high permeability, and intense rainfall produces sensitive areas with a high risk of slope movements and slope failure over time.

The flumes and canals cross a broad floodplain near Red Blanket Creek. Several flume failures have occurred in this area as a result of geologic conditions. Soft, low strength soils have been encountered. It is likely the soils are lacustrine, possibly associated with a proglacial lake formed during late Wisconsin glaciation. These soft soils may compact and subside over time, particularly under the load of the flume and support structures. As a result, there is some risk of subsidence and flume/trestle damage or failure. Flume failures and road maintenance can cause significant erosion and sediment transport.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed the following PM&E measures to address geologic resources impacted by the Project. Please note that PacifiCorp H1 includes an existing measure.

PacifiCorp H1 Replaced wooden penstocks in September, 2002, and woodstave flumes will be evaluated and replaced.

PacifiCorp H2 Please see PacifiCorp E1-E10, A2, and note that PacifiCorp E1 and E3-E6, are existing measures.

3. Conditions Proposed by HART

HART proposes that PacifiCorp shall undertake the following measures regarding geological resources:

HART H1 Perform high-level analyses of potential seismic and geologic hazards facing the Project, according to methodologies and procedures approved by the Department of Geology and Mineral Industries. These analyses should be done in conjunction with regular FERC Part 12 inspections. PacifiCorp should continue to consult

with OWRD Dam Safety Section in conjunction with FERC engineering and safety inspection activities.

HART H2 Please see HART A5.

I. Public Health and Safety

1. Impacts

The Project is a low hazard project and therefore does not have an Emergency Action Plan. There has been one lost time accident and no deaths involving the Project.

2. Conditions Proposed by PacifiCorp

PacifiCorp has proposed to undertake PM&E measures to mitigate for impacts to public health and safety. These measures are summarized below, but more detail is provided in PacifiCorp's DLA at Volume 1, Exhibit H, pages 17-18. PacifiCorp I1-I9 are existing or ongoing measures.

PacifiCorp I1 Revised the Public Safety Plan in 1998. It was revised to indicate updates to the plan, including sirens that had been established to warn the public of sudden rises to stream flows in the bypass reach of the North Fork diversion dam.

PacifiCorp I2 Maintain signs which are posted at the entrances to the bypass reach to alert the public to warning sirens if a sudden release of water from the dam upstream were to occur. If a spill is planned, Project personnel patrol the bypass reach and sound the sirens before opening spill gates.

PacifiCorp I3 Maintain use of safety devices which are in place to warn the public of hazards at the Prospect Nos. 1, 2, and 4 powerhouses, at the Red Blanket Creek and Middle Fork Rogue River diversion dams, the Prospect No. 2 forebay, North Fork diversion dam, and at North Fork Park. The safety devices, such as fences, gates, boat barriers, lighting and warning signs, are in place to alert the public to project-related hazards and to prevent public access as needed.

PacifiCorp I4 Maintain use of informational signs which are in place at North Fork Park where the public is allowed for recreational purposes.

PacifiCorp I5 Maintain year-round use of boat barriers which are in place at North Fork diversion.

PacifiCorp I6 Continue inspections by PacifiCorp personnel of the Project powerhouses and diversions daily, and walk the canal and flumes 3 times each week.

PacifiCorp I7 Comply with FERC-required operational, environmental, and public use inspections on a regular basis.

PacifiCorp I8 Inspect North Fork Park daily during the recreation season.

PacifiCorp I9 Maintain personnel safety records for a five-year period as required by state law.

3. Conditions Proposed by HART

HART proposes that PacifiCorp shall undertake the following measures to mitigate for impacts to public health and safety:

HART I1 See HART H1, above.

J. License Term

1. Conditions Proposed by PacifiCorp

PacifiCorp J1 PacifiCorp requests a 50-year license for the Project.

2. Conditions Proposed by HART

HART J1 HART recommends that PacifiCorp be granted a license as long as all of the specified conditions herein or as modified in Oregon's PUSP, SUSP, and FUSP, which include the Section 401 Water Quality Certificate and 10(j) fish and wildlife conditions, are included in the new FERC license. The term of the new FERC license should not exceed 30 years.

K. Other Issues

HART K1 Because ownership of the Project may change over the life of the Project, mitigation commitments by PacifiCorp must be written into the FERC license so mitigation obligations are clear to a new owner of the Project.

HART K2 It is the responsibility of PacifiCorp to consult with all appropriate local, state, or federal agencies before repairing or modifying the hydroelectric Project, and to obtain and comply with all required permits.

HART K3 Upon Project abandonment, PacifiCorp or the future owner/operator shall remove or modify Project facilities and restore pre-Project conditions in any manner reasonably required by federal and state agencies to maintain fish and wildlife production in the Project-affected area. FERC should include a license article to

make financial provisions, or otherwise make reasonable provisions for retirement of the Project.

VIII. List of Acronyms

10(j) recommendations	Fish and wildlife recommendations by ODFW
401 Certificate	Clean Water Act Section 401 water quality certificate by ODEQ
CFR	Code of Federal Regulations
CFS	Cubic feet per second
CWA	Clean Water Act
DLA	Draft License Application
DO	Dissolved oxygen
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FUSP	Final Unified State Position
FSCD	First Stage Consultation Document
GWh	Gigawatt hour
HART	Hydroelectric Application Review Team
HE	An Oregon time-limited water right for hydroelectric use of water
HPMP	Historic Properties Management Plan
MM	Millimeter
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MW	Megawatt
MWh	Megawatt hour
NMFS	National Marine Fisheries Service
O&M	Operation and maintenance
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODSL	Oregon Division of State Lands
OPRD	Oregon Parks and Recreation Department
OPUC	Oregon Public Utilities Commission
ORS	Oregon Revised Statutes
OWRD	Oregon Water Resources Department
PC	Power claim (an Oregon certificated water right with potentially unlimited duration)
PM&E	Protection, mitigation, and enhancement measures
PSP	Provisional State Position
PUSP	Provisional Unified State Position
ROW	Right of way
SUSP	Second Unified State Position
TES	Threatened and Endangered Species
THP	Theoretical horsepower
USC	United States Code
USFWS	United States Fish and Wildlife Service

Attachment 1

ODFW DRAFT 10(j) Fish and Wildlife Recommendations

ATTACHMENT 1

DRAFT 10(j)

COMMENTS, RECOMMENDATIONS, TERMS, AND CONDITIONS

For

PACIFICORP's PROSPECT 1, 2, AND 4 HYDROELECTRIC PROJECT

FERC 2630

by the

OREGON DEPARTMENT OF FISH AND WILDLIFE

March, 2003

Portland, Oregon

INTRODUCTION

Project Description

The Prospect 1, 2, and 4 Hydroelectric Project (project) is located in Jackson County, Oregon, in the upper Rogue River basin approximately 45 miles northeast of Medford, Oregon, near the town of Prospect. The project consists of three concrete diversion dams, approximately 9.25 miles of water conveyance system, and three powerhouses. The Prospect 1 powerhouse contains a turbine generator with a nameplate rating of 3.76 megawatts (MW), Prospect 2 powerhouse has two generating units each with a nameplate rating of 16 MW, and Prospect 4 powerhouse has a single 1 MW generating unit.

A separate hydroelectric project, Prospect 3 (FERC 2337) is located on the South Fork of the Rogue River. This Project consists of a diversion dam, water conveyance system and a 7.3 MW generating unit in the powerhouse. The Prospect 3 Project operates under a Federal Energy Regulatory Commission (FERC) license that is specific to that Project and was last granted in 1983. The FERC license will expire January 1, 2019. Water from Prospect 3 is transferred to the Prospect 1, 2, and 4 project.

The applicant holds Certificates of Water Rights to divert up to 150 cfs from the South Fork Rogue River (South Fork) via the Prospect 3 project, 150 cfs from the Middle Fork Rogue River (Middle Fork), 75 cfs from Red Blanket Creek, and 675 cfs from the North Fork Rogue River (North Fork). Stream flow diverted from South Fork, Middle Fork, and Red Blanket Creek is conveyed through artificial waterways to the North Fork Reservoir, additional water is diverted from the North Fork, and the cumulative water right is diverted from the reservoir and run through project turbines. All the water is discharged into the North Fork. The impoundments associated with both the Middle Fork and Red Blanket Creek are relatively small. The North Fork diversion impoundment is the largest with an approximate 260 acre-foot storage volume at normal pool elevation of 2,597 feet above msl.

Downstream of each of the three diversion dams are affected bypass reaches with a cumulative length of 14 miles. The Middle Fork bypass reach is approximately four miles long from the dam to the confluence of Red Blanket Creek, and an additional 0.7 miles from Red Blanket Creek to where it enters the South Fork. The Red Blanket Creek affected stream reach from the dam to its confluence with the Middle Fork is approximately 3 miles long. Red Blanket is tributary to the Middle Fork, which in turn is tributary to the South Fork. The South Fork affected reach from the confluence with the Middle Fork downstream to Lost Creek Reservoir is approximately four miles long. The Rogue River affected stream reach is approximately 2.5 miles long and extends from the North Fork Dam to the tailrace of powerhouse 1.

The Middle Fork bypass reach has an existing minimum flow requirement of 25 cfs from July 1 to September 15 and 10 cfs at all other times of the year. The Red Blanket Creek bypass reach has no minimum instream flow requirement. However, a notch in the dam can provide a reported 5-cfs during summer low flow periods. There is no established minimum flow requirement for the South Fork bypass reach downstream of its confluence with the Middle Fork. This reach of the South Fork receives flows from the Middle fork, small tributaries, and 10-cfs minimum flow stipulated by a license condition for Prospect 3. There is no established minimum instream flow requirement downstream of the North Fork diversion dam. Actual flow in this reach varies and is provided via either spill or leakage from the spill gates. In typical operating situations during non-spill periods of the year, flow from leakage is approximately 20 cfs.

Relicensing Summary

The current project license was issued by FERC on July 28, 1980, however, the license was effective from May 1, 1965 to July 1, 2005. The applicant initiated formal FERC relicensing in January 2000 when it filed a Notice of Intent to relicense the project. The applicant has been following FERC's Traditional Relicensing Approach. The First Stage Consultation Document (FSCD) was issued in January 2000, when the applicant initiated consultation with state and federal agencies and other stakeholders. The Oregon Department of Fish and Wildlife (ODFW) provided comments on the FSCD and subsequent study proposals. The applicant conducted studies between 2000 and late 2002, and filed its Draft License Application (DLA) with the State of Oregon and FERC on October 1, 2002.

The State of Oregon provided comments on the DLA to the applicant on December 31, 2002. In its review of the DLA, ODFW found that the applicant failed to provide requested information. In some cases field studies and data analysis were not completed. In other cases, the applicant either chose not to conduct certain studies recommended by ODFW, or chose not to use standard study methodologies recommended by ODFW. ODFW concluded that the DLA was incomplete (State of Oregon 2002).

ODFW is providing the following comments and recommended terms and conditions for the State of Oregon's Provision State Position. These recommended terms and conditions, which may be modified based on public comment or to resolve conflicts with other state agencies, will be filed with FERC pursuant to the Fish and Wildlife Coordination Act, 16 USC 661et seq., and Federal Power Act, 16 USC 803(j) no more than 60-days after FERC issues Notice of Application Ready for Environmental Analysis.

COMMENTS, RECOMMENDATIONS, TERMS AND CONDITIONS

1. Upstream and Downstream Fish Passage Facilities

Resident salmonid game fish in the vicinity of the project include rainbow trout (*Oncorhynchus mykiss)*, cutthroat trout (*O. clarki*) brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis)*. Rainbow and cutthroat trout are indigenous to the upper Rogue River and tributaries, while brown and brook trout are introduced species. All four species are self-sustaining and reproduce naturally in areas of the upper Rogue River and tributaries, therefore, eggs, fry, juveniles, and adults inhabit the project area. ODFW's management of project area fisheries is directed and guided by the following statutes, plans, and rules:

- Food Fish Management Policy (ORS 506.109).
- Wildlife Policy (ORS 496.012).
- Fish Screening Laws (ORS 509.615).
- Fishway Requirements (ORS 509.585).
- The Statewide Trout Management Plan (OAR 635-500-0100 through 0120).
- General Fish Management Goals (OAR 635-007-0510).
- Natural Production Policy (OAR 635-007-0521 through 0524).
- Wild Fish Management Policy (OAR 635-007-0525 through 0529).
- Wild Fish Gene Resource Conservation Policy (OAR 635-007-0536-0538).
- Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0000 through 0030).

ODFW applies a conservative management approach for indigenous trout populations in the Middle Fork, South Fork, and Red Blanket Creek and does not stock hatchery fish in these streams. ODFW manages these streams using Option A of the Trout Plan using the following guidelines;

- No hatchery fish will be stocked.
- Habitat protection, rehabilitation, and enhancement are the primary management activities.
- Harvest and angling effort will be regulated in accordance with the management alternative selected.

ODFW manages trout populations in the North Fork using Option B of the trout plan (for both hatchery and wild trout) using the following guidelines;

- Habitat protection, rehabilitation, and enhancement are essential to maintaining wild trout production.
- Hatchery stocks shall be used for target fisheries.
- Harvest and angling effort will be regulated in accordance with the management alternative selected.

ODFW actively pursues and promotes habitat protection and enhancement to maximize the productivity of the stock, conserve stock fitness and life history characteristics, and to maintain healthy trout populations with multiple age classes. Unique native populations may require additional recognition for

protection, such as populations isolated above natural barriers. Coastal rainbow trout isolated above anadromous fish barriers in Southwest Oregon appear to be unique and are managed conservatively.

The applicant does not operate the project in compliance with ODFW's statutes, rules, and fish management plans. The North Fork and Red Blanket dams do not have upstream fish passage facilities. The Middle Fork dam is equipped with a pool and weir fish ladder, however, ODFW considers the ladder an obstacle to fish passage due to inadequate design. None of the diversions are screened to prevent entrainment of fish. The project entrains indigenous trout into diversion canals, depleting fish populations in the project area, and blocks or inhibits upstream passage of trout at all project diversion dams. Entrainment of fish into the power canals removes them from natural streams, removes them from the spawning population, causes injury and mortality by increased predation and passage through turbines, and reduces recreational opportunities. The artificial waterways do not provide adequate fish habitat, and transport fish to stream basins that were never naturally accessible due to natural barriers (e.g. Fish from Red Blanket Creek and Middle Fork are unable to access the North Fork above the natural barrier were the waterways now transport them).

ODFW is recommending that PacifiCorp construct fish passage facilities (upstream and downstream) that are consistent with current criteria for providing passage and protecting all lifestages in the project area. The most reasonable, feasible, and reliable fish passage facilities are those that comply with ODFW's criteria for fish protection. These criteria are science based; are known to protect fish; are consistent with ODFW's policies, plans, and goals; and will ensure that safe and effective fish passage facilities are constructed.

ODFW anticipates that PacifiCorp will submit a proposed Memorandum of Agreement (MOA) to the Oregon Fish and Wildlife Commission (FWC) to waive fish passage requirements at North Fork Dam, by providing a net benefit to fish populations through other mitigation measures. The FWC is expected to make a decision of the MOA at its May 9, 2003 meeting. ODFW will provide recommended licensing terms and conditions that reflect FWC action.

***Recommendations**. Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

1.A. *The Licensee shall provide volitional upstream fish passage at Red Blanket and Middle Fork dams that meets performance standards and criteria of ODFW and USFWS. The ladder design must meet the following general criteria:*

- *The ladder must provide uninterrupted fish passage across the expected range of operating conditions (i.e. forebay and tailwater fluctuations) expected at both dams.*
- *The ladder must have a minimum of 12-inch wide slots that results in water velocity less than the swimming speed of juvenile rainbow trout*

(Oncorhynchus mykiss) and cutthroat trout (O. clarki) and a maximum drop between pools of 0.75 ft.

- *The pools must be a minimum of 6 foot deep and of sufficient volume to have a maximum energy dissipation of 4 foot pounds per second per cubic foot*
- *Passage facilities shall be designed to include adequate facilities for evaluating screen performance (e.g. fish trapping capability).*

Construction of fish passage facilities must be completed within 18 months following issuance of the new FERC license. Hydraulic evaluation shall be initiated within one month following completion of the facility, biological evaluation shall be initiated within a timeframe established through consultation with the agencies that will consider the timing and magnitude of downstream fish migration in each stream.

1.B. *The licensee is planning to submit a proposed Memorandum of Agreement (MOA) with the Oregon Fish and Wildlife Commission (FWC) to waive fish passage requirements at the North Fork Dam, by providing a net benefit to fish populations through alternative mitigation measures.*

The FWC will make a decision on the MOA at its May 9, 2003 meeting. ODFW will submit a recommendation regarding fish passage requirements at North Fork Dam at a future date based on action by the FWC.

1.C. *The Licensee shall provide downstream fish passage facilities at North Fork, Red Blanket, and Middle Fork dams. The fish screen design must meet the following general ODFW criteria:*

- *The screen shall be located as close as practicable to the diversion site, yet downstream from the headgate and far enough below to allow uniform flow conditions.*
- *Approach velocity shall not exceed 0.4 feet per second for rotary drum screens and vertical flat plate screens.*
- *Sweeping velocity shall exceed approach velocity, and screens longer than six feet must be angled at 45^{o} or less to the flow.*
- *Screens shall be cleaned as frequently as necessary to prevent obstruction of flow and to avoid exceeding the approach velocity criterion.*
- *Screen material must provide at least 27 percent open area.*
- *Screen openings shall not exceed 2.38 mm for perforated plate or mesh/woven wire, and 1.75 mm for profile bar or wedge wire.*

Construction of the downstream fish passage facilities must be completed within 18 months following issuance of the new FERC license. Hydraulic evaluation shall be initiated within one month following completion of the facility, biological evaluation shall be initiated within a timeframe established through consultation with the agencies that will consider the timing and magnitude of downstream fish migration in each stream

1.D. *The Licensee shall submit draft design plans to ODFW and USFWS within six months following issuance of the new FERC license for agency approval of design specifications for upstream and downstream fish passage facilities. The licensee, after consultation with ODFW and USFWS, and within six months from the start of construction shall file for Commission approval functional design drawings of the upstream and downstream fish passage facilities.*

1.E. *The Licensee shall develop written operation and maintenance procedures (including operator training and supervision) to insure that the upstream and downstream fish passage facilities operate effectively during the life of the project. The operation and maintenance plan shall include procedures for prior notification and coordination with ODFW on maintenance scheduling or emergencies that affect functioning of the facilities*.

1.F. *Prior to completion of the upstream and downstream fish facilities, the Licensee, in consultation with ODFW and USFWS, will prepare a written post-construction monitoring plan and implementation schedule to evaluate the efficiency of the facilities. The plan shall incorporate recommendations by ODFW and USFWS before implementation. The plan must include hydraulic and biological evaluation to ensure proper performance of the facilities as established in agency criteria. The written plan will guide studies immediately following construction to evaluate the fish passage facilities. The plan shall determine whether death, injury, or delay is occurring; and whether fish have difficulty in locating the ladder entrances, moving through the ladders, or falling back over the spillway on the dam. The results of the monitoring shall be submitted to the agencies according to the approved schedule. If the results of the monitoring show that modifications to the facilities are necessary to eliminate or minimize adverse impacts to the fish resources, the licensee shall file with the Commission recommendations for modifying the facilities and a schedule for implementing the measures that shall incorporate agency recommendations developed through consultation. Measures to bring the screens into compliance with the standards may include, but are not limited to, improved hydraulic balancing of screens or structural modifications, seasonal project shutdown, or reduction in flow diversion. These changes may be required for the remaining term of the license or may be required temporarily until alternative measures are implemented to achieve the standards.*

1.G. *The licensee shall maintain all upstream and downstream fish passage facilities by keeping them in repair, and open and free from obstructions at all times, consistent with state and federal law.*

1.H. *The licensee shall notify ODFW and USFWS at least two weeks in advance of any contemplated maintenance shutdowns that result in dewatering the waterways or reduced flow conditions that may result in stress or mortality to fish. The licensee shall salvage live fish from the waterways during such maintenance shutdowns and consult with ODFW to determine where the salvaged fish will be relocated.*

2. Streamflow in Bypass Reaches and Ramping

Streamflow in Bypass Reaches

Establishing minimum flows in project bypass reaches are a critical component to the physical and ecological processes that influence aquatic and riparian habitat conditions in the upper Rogue basin. Restoration of flows will sustain well-connected and functional riparian and aquatic habitats to which the native aquatic and riparian communities are adapted.

PacifiCorp has several water rights that allow diversion of stream flow from the South Fork (150 cfs), Middle Fork (150 cfs), Red Blanket Creek (75 cfs), and North Fork Diversion (cumulative 675 cfs). A cumulative total of 1,075 cfs can be diverted from these streams. Stream flow diverted from the South Fork, Middle Fork, and Red Blanket Creek is not returned to each respective channel, but is conveyed to the powerhouses and discharged into the North Fork. Project diversion significantly reduces flow throughout the year in approximately 14 miles of bypass reaches on four streams. The South Fork below the confluence with the Middle Fork, North Fork, and Red Blanket Creek have no established minimum flow requirement, although an estimated 20 cfs leaks though the North Fork Dam into the bypass reach and an estimated 5 cfs passes through a notch on Red Blanket Dam. Established minimum flow requirements on the Middle Fork are 25 cfs from July 1 to September 15 and 10 cfs for other months of the year.

PacifiCorp can divert a high proportion of the average monthly flow ranging from; 48-97 percent on the North Fork, 42-93 percent of Red Blanket Creek, and 47-93 percent on the Middle Fork (Figures 1-3). Reduction of stream flows substantially reduces the quantity and quality of stream habitat for aquatic and riparian organism and adversely affects fish resources. The project has altered the natural flow regime in the bypass reaches and current minimum flows do not provide adequate flow for fish and other aquatic organisms.

PacifiCorp has collected field data in all the bypass reaches and consulted with ODFW and USFWS on habitat suitability criteria for the Physical Habitat Simulation System (PHABSIM). However, the analysis of the data has not been conducted at this time, therefore the relationship between flow and fish habitat has not been established for any bypass reaches. ODFW will recommend specific minimum flows for all bypass reaches when the PHABSIM is completed and submitted for review.

Figure 1. Average monthly flow in the North Fork above Prospect (1944-1997, USGS gauge 14328000), average flow after 675 cfs diverted for hydroelectric use, and percentage of average river flow remaining after diversion.

	Average monthly flow (cfs)	Average flow after diversion (cfs)	Percentage of flow remaining after diversion
Jan	992	317	32
Feb	1048	373	36
Mar	1035	360	35
Apr	1228	553	45
May	1410	735	52
Jun	1004	329	33
Jul	584	20[a]	3
Aug	468	20[a]	4
Sep	442	20[a]	5
Oct	480	20[a]	4
Nov	721	46	6
Dec	1004	329	33

[a]. *Allowable diversion exceeds average monthly flow. Flow in the bypass reach is an estimated 20-cfs of leakage through the dam.*

Figure 2. Average monthly flow in Red Blanket Creek (1944-1982, USGS gauge 14333500), average flow after 75 cfs diverted for hydroelectric use, and percentage of average creek flow remaining after diversion.

	Average monthly flow (cfs)	Average flow after diversion (cfs)	Percentage of flow remaining after diversion
Jan	136	61	45
Feb	135	60	44
Mar	130	55	42
Apr	145	70	48
May	180	105	58
Jun	168	93	55
Jul	102	27	26
Aug	77	5	9
Sep	69	5[a]	7
Oct	73	5[a]	7
Nov	102	27	26
Dec	136	61	45

[a]. *Allowable diversion exceeds average monthly flow. An estimated 5-cfs passing through a notch in the dam is the bypass flow during low flow periods.*

Figure 3. Average monthly flow in Middle Fork Rogue River (1944-1955, USGS gauge 14333000), average flow after 150 cfs diverted for hydroelectric use, and percentage of average river flow remaining after diversion.

	Average monthly flow (cfs)	Average flow after diversion (cfs)	Percentage of flow remaining after diversion
Jan	208	58	28
Feb	240	90	38
Mar	194	44	23
Apr	260	110	42
May	319	169	53
Jun	285	135	47
Jul	180	30	17
Aug	144	25[a]	17
Sep	135	25/10[a]	19/7
Oct	144	10[a]	7
Nov	168	18	11
Dec	197	47	24

[a]. *Allowable diversion exceeds average monthly flow. A minimum flow of 25 cfs is required from Jul. 1 to Sept. 15 and 10 cfs at all other times of the year.*

When routine maintenance of project turbines occurs, all or a portion of the project diversion capacity is typically discharged into the North Fork bypass reach. Turbine maintenance results in a temporary, substantial, increase in bypass reach flow that is not currently under a ramp rate restriction. The timing of these artificial high flow events can influence aquatic species. Conducting annual maintenance during periods when high flows would have occurred under pre-project conditions is the most effective means of limiting negative ecological effects related to releasing full flows in bypass reaches, because native species that are present in the affected reaches are adapted to high flows during such periods. During maintenance activities when turbines are not operating, or when less than full diversion capacity can be used, headgates should be closed at each point of diversion to maintain full streamflow in the respective bypass reach (e.g. Red Blanket, Middle Fork).

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

2.A. *The licensee shall discharge from the Prospect 1, 2, and 4 Hydroelectric Project North Fork, Middle Fork, and Red Blanket dams a continuous minimum flow that will be based on the results of the flow studies conducted in each bypass reach during relicening and mandatory conditions established by the Oregon Department of Environmental Quality for its Section 401 (Federal Clean Water Act) Water Quality Certification, for the protection of fish and wildlife resources and riparian areas, and to meet water quality standards and criteria*.

If natural inflow to the project is less than the minimum needed for fish and wildlife and water quality, then all the flow will be discharged into the bypass reaches. The minimum flows will be established for each of the four bypass reaches; 1) North Fork, 2) Middle Fork, 3) Red Blanket, and 4) South Fork below the confluence with the Middle Fork. The minimum flow shall be measured at the upstream end of the bypasses immediately below the three diversion dams and at a location in the South Fork to be determined through agency consultation.

2.B. *The licensee shall install and maintain gauge stations within six months after issuance of the new license at the head of the bypass reaches or elsewhere as required by OWRD to monitor compliance with the minimum flow requirements in the bypass reaches and flow and ramping rates downstream of the powerhouses. Gauge installation shall include radio, telephone, or other telemetry systems to provide recording and transmission of hourly streamflow data to the Prospect control room. The installation of the gauge stations and the data acquisition shall conform to applicable United States Geological Survey ("USGS") standards. PacifiCorp shall develop, in consultation with ODFW, ODEQ, OWRD and USFWS a coordinated gauge installation and data reporting plan. The agencies shall review and approve the plan prior to installation of gauge stations.*

2.C. *The licensee shall consult with ODFW, USFWS, and DEQ to identify the preferred timing of facilities maintenance for project bypass reaches. The licensee shall minimize impacts in bypass reaches by planning project maintenance so that resulting high flows will coincide with the high-flow period of the natural hydrograph identified by the agencies and to prevent water-quality standard violations.*

Ramping

Project ramping occurs at the Middle Fork and Red Blanket diversions when manual adjustments are made at the canal headgates. This occurs when operations require an increase or decrease in flow in the canal for power production. Ramping also occurs in these reaches when maintenance activities require dewatering or rewatering of the diversion canals.

Ramping during unplanned outages occurs in the North Fork bypass reach between the North Fork diversion and the Prospect 2 powerhouse. During a unit trip in the Prospect 2 powerhouse a maximum release of 1,050 cfs can occur at the emergency spillway or at the diversion. This coincides with a flow reduction in the Rogue River below the Prospect 1 and 2 powerhouses. Maintenance activities that require dewatering of the Prospect 2 forebay or the associated penstock and canal would result in ramping of the North Fork bypass reach and the Rogue River below the Prospect 2 powerhouse.

Sudden flow changes in project reaches due to project operations can adversely impact fish and aquatic resources. Significant rapid flow reduction in bypass reaches could affect fish populations by dewatering redds and stranding fry or juvenile fish. Rapid flow increases in bypass reaches could wash out existing redds, displace fry, displace macroinvertebrates, or adversely impact amphibian populations in these reaches. Downramping of only 1 inch per hour can impact fish populations. One very significant ramping event at a very unusual time can cause a significant limiting condition for one or more age classes of fish, or a section of habitat to be impacted for a long period. The current FERC license does not include conditions that require PacifiCorp to apply specific ramping rates to project operations.

Ramping rates recommended by ODFW are consistent with FERC conditions at other hydroelectric projects and are based in part on the results of PacifiCorp's Ramp Rate Study (PacifiCorp 2003) and recommendations from Hunter (1992). The recommended ramping rates are feasible to apply at the project, effective for protecting aquatic and riparian resources, and have been accepted for implementation at other hydroelectric projects by FERC.

The North Fork bypass reach and full flow reach (below the powerhouses) can be rapidly down-ramped and up-ramped during unit trips, causing both environmental and public safety concerns. FERC proposed resolving ramping issues in the Draft Environmental Impact Statement for the North Umpqua Hydroelectric Project (FERC 1927) as follows:

> "Because many disruptions in flow result from brief turbine shutdowns (e.g., because of load rejections), hydroelectric projects should be capable of providing several hours of continuous flow under powerhouse shutdown conditions. A flow continuation measure would allow the flow regime in both the bypassed reach and downstream from the powerhouse to remain essentially unchanged during intermittent shutdown."

Flow continuation would be an appropriate measure to eliminate rapid water level fluctuations caused by load rejection at the project to protect fish and wildlife and their spawning grounds and habitat caused by ramping from load rejection.

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

2.D. *During times of the year when resident trout fry (<60 mm) are present, from approximately May 1 – October 31, ramping shall not exceed 0.1 feet per hour any time of the day in the bypass reaches or full-flow reach below the powerhouse. During times of the year when resident trout fry are not present,*

from approximately November 1 to February 28, downramping shall not exceed 0.2 feet per hour and upramping shall not exceed 0.2 feet per hour.

2.E. *The licensee shall implement a flow continuation measure to provide several hours of continuous flow under powerhouse shutdown conditions within one year of issuance of the new license.*

3. Waterway Failures, Sedimentation, and Turbidity Ongoing and Unanticipated Project Impacts

The project water conveyance system is approximately 9.25 miles long and consists of (1) gunite lined canals, (2) unlined earthen canals, (3) open-top wood stave flume, (4) wood stave flow line, and (5) steel penstocks (PacifiCorp 2002). The flumes are prone to failure, causing adverse impacts to water quality, floodplains, riparian, and aquatic habitat. Recent failures occurred on Flume 5 in the summers of 1995, 1998, and 2001; and Flume 7 failed in 1999.

Approximately 6 million gallons of flume water was reportedly discharged into Red Blanket Creek as a result of the Flume 5 failure in 2001. The failure caused substantial erosion and carried sediment into Red Blanket Creek. Sand and silt bars 18 to 30 inches high were created along the stream bank and deposited sediments, which blocked and partially filled a meander in the creek.

Flume failures cause adverse impacts to fish and wildlife populations and their habitat. The rapid erosion of sediment causes an immediate increase in total suspended sediment in the water column with a subsequent deposition of sediment as flow velocity decreases. While the impacts of increased suspended sediment could be of relatively short duration, the deposited sediment can cause long-term impacts to riparian and stream ecosystems.

Effects of Suspended Sediment on Aquatic Species. Suspended sediment may interfere with the essential functions of fish and other organisms. Fish may suffer clogging and abrasive damage to gills.

Abrasion of gill tissues triggers excess mucous secretion, decreased resistance of disease, and a reduction or complete cessation of feeding. Suspended sediment may also affect predator-prey relationships by inhibiting predators' visual abilities. The number of filter feeding invertebrates will decline if their filter mechanisms are choked by suspended particles. Some zooplankton may decline due to clogged feeding mechanisms.

Effects of Deposited Sediment on Aquatic Species. The Flume 5 failure in 2001 resulted in sand and silt bars 18 to 30 inches high being deposited along Red Blanket Creek that extended for approximately 400 feet. Downstream from where flume water entered the creek, deposited sediments blocked and partially filled a meander. Approximately one lineal mile downstream, sediment had been deposited along pool edges and the water was very turbid. Sediment

deposition results in direct and indirect impacts to stream habitat because it can alter spawning and rearing habitat by covering spawning gravel and filling stream pools. Depending on the timing of the sediment event and the duration of its effects, spawning success may be jeopardized by the shifting sediment environment and lack of circulating water around eggs. If eggs do hatch into fry, survival may be substantially reduced by the less-than-optimum stream conditions. The biota of an aquatic system has evolved to cope with the natural embeddedness of a stream. Fry may attempt to leave an area or die when embeddedness levels reach 50-60%. In Red Blanket Creek the availability of alternative physical habitat for fish is limited because of a waterfall downstream and the Red Blanket diversion dam upstream. Therefore, fish in this reach are especially vulnerable to the adverse habitat impacts caused by the project.

Suspended sediment from turbid waters can threaten aquatic communities. Deposited particles may obscure sources of food, habitat, and hiding places. Silt-loving invertebrate communities may replace benthic invertebrates that prefer a low-silt substrate, such as mayflies, stoneflies, and caddisflies. The short or long-term disruption of invertebrate communities can deplete an important food source for fish and other species.

Sediment deposition may also affect the physical characteristics of the streambed. Sediment accumulation causes an increase in streambed elevation and a decrease in channel capacity, potentially increasing the likelihood of flooding.

The licensee will need to implement measures to reduce of eliminate flume failures. In addition, the licensee will need to establish protocols for assessing the immediate and long-term impacts of flume failures on fish and wildlife populations and their habitat and providing mitigation for habitat damage and losses of animals.

Ground disturbing activities during maintenance or construction of new facilities could increase turbidity and sedimentation levels in project stream reaches and cause direct and indirect impacts to riparian and wetland habitats. Increases in turbidity and sedimentation and the accompanying negative effects on aquatic resources are among the most significant effects of construction and maintenance activities.

Project maintenance and operation will have unanticipated impacts on fish and wildlife populations and their habitats that will need to be identified as they occur and appropriate mitigation measures implemented.

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

3.A. *The licensee shall develop in consultation with the ODEQ, ODFW, and USFWS, and file for Commission approval, a written monitoring and maintenance plan incorporating agency recommendations that will eliminate or reduce failure of the water conveyance system. The monitoring component of the plan shall include technology for early detection of waterway failure and protocols for stopping flow in less than one hour.*

3.B. *Should an accidental spill or discharge from the waterway system or other event occur, the licensee shall notify the Oregon Emergency Response System within 24 hours of an event with a verbal report on location, duration, and effect on water quality and aquatic life. If the licensee observes or suspects that fish or wildlife or their habitat may be harmed, it shall immediately notify and consult with the hydropower coordinator at ODFW's Roseburg office and watershed biologist at ODFW's Central Point office. In no case shall such contact occur later than the next business day.*

3.C. *The licensee shall coordinate emergency response to waterway failure or other events, and the subsequent remediation planning and implementation process will be initiated within 24 hours of the event. The licensee shall develop site-specific plans for remediation in consultation with, and approved by ODFW, USFWS, and ODEQ. Plans will include (1) immediate steps to remedy the failure and bring the waterway back into operation and (2) timing and performance criteria to be met for completion of needed remediation after an event. Additionally, the licensee shall provide an annual report to ODEQ and ODFW by March 1 for the preceding calendar year, describing each event and action taken to remediate impacts and the operational changes taken or proposed to reduce the reoccurrence of the spill, discharge, or other event.*

3.D. *Within one year from the issuance of the new license, the licensee shall develop in consultation with ODFW, ODEQ, and USFWS, and file for Commission approval, a written action plan that details protocols for assessing the environmental damage caused by flume failure and other events. The plan shall include protocols for assessing and documenting the immediate and long-term effects on water quality, fish and wildlife populations, riparian and aquatic organisms, and aquatic and riparian habitat. The licensee shall consult with the ODFW and USFWS to develop a fish and wildlife habitat mitigation plan that provides compensation for the short-term and long-term loss of individuals and habitat. The plan shall identify requirements for mitigation measures to meet ODFW fish and wildlife objectives and standards. The plan shall also include a schedule for accomplishing these objectives and standards and shall identify any needs for additional studies.*

3.E. *The licensee, shall consult with ODFW, USFWS, and ODEQ 90-days before commencing any project-related land-clearing, land disturbing, or spoil-producing activities, and incorporate the agency recommendations into a comprehensive plan to control erosion, dust, and slope stability and to minimize the quantity of sediment or other potential water pollutants resulting from project construction, spoil disposal, and project operation and maintenance. The plan*

shall be based on actual-site geological, soil, slope, and groundwater conditions and on the final project design, and shall include detailed descriptions and functional design drawings of control measures, topographic map locations of all control measures, a specific implementation schedule, specific details of monitoring and maintenance programs for the project construction period and for project operation, and a schedule for periodic review of the plan and for making any necessary revisions to the plan.

4. Stream Geomorphology

Reductions of bedload supply and/or changes in bed stability are downstream geomorphic effects often associated with dams. Dams can reduce spawning gravel availability in downstream reaches and cause development of a course, relatively immobile surface layer. Dams can cause a number of changes to channel morphology or fluvial processes that can have deleterious effects on stream and riparian habitats, including channel incision and/or widening, increased bank erosion, and reduced channel migration.

The North Fork Dam, the largest on the project, has an overall height of 50 ft. and the impoundment has approximately 260-acre feet on storage volume. In comments on the FSCD, ODFW recommended that PacifiCorp conduct a study to characterize the historic and current sediment regime for sediment composition, bedload movement, stream gradient, and gravel deposition areas. The information on hydrology and sediment would be synthesized to estimate project impacts and potentially identify habitat bottlenecks, such as quality and quantity of spawning gravel.

The habitat in the North Fork below the dam is described in the Draft License Application as follows;

> "The channel in this segment is dominated by bedrock, followed by cobble and boulder substrate. Riparian growth along the channel is sparse, and does not provide much input of allochthanous vegetative matter, terrestrial insects or cover for fish. Spawning gravels are present in a few patches, but are otherwise limited because of channel morphology. When flows increase by even a relatively small amount, there is likely a substantial increase in depth and velocity in the low-flow channel (trench). High water velocity and stream energy may mobilize many of the smaller substrate elements, such as spawning gravel and transport them downstream. The transport of gravels through and out of the reach reduces the amount of spawning gravel available."

The description of this reach is consistent with impacts associated with stream habitat below a bedload-capturing dam; presence of bedrock, cobble and boulder, and few patches of spawning gravels. The potential effects of reduced bedload supply would be expected, at a minimum, to occur downstream to the confluence with the next major tributary. The reach of the North Fork

downstream of the Mill Creek Road is characterized in the DLA as having substrate dominated by boulder/cobble, a relatively coarse substrate.

The Oregon Plan for Salmon and Watersheds, provides direction to state agencies to restore channel morphology to more natural conditions so as to ensure interaction with the floodplain, presence of meanders, channel complexity, and recruitment of gravel and woody debris to support habitat for rearing, holding and spawning by salmonids and other species of concern. The Oregon Water Resources Department in cooperation with other agencies will identify which hydroelectric facilities need a geomorphic analysis as part of the environmental evaluation for state reauthorization of these facilities.

Sediment yield- The Western Cascades terrain is roughly west and north of the North Fork and the High Cascades terrain generally occupies the area south and east of Highway 62 (USDA-FS 1995). In addition, surficial deposits are also found above the project area (PacifiCorp 2002). In the nearby Umpqua River drainage, for the Surficial deposits and the High Cascades terrain, the pre-management sediment yield is estimated at about 90 $t/km^2/yr$, and for the Western Cascades terrain, pre-management sediment yield is estimated at about 120 $t/km^2/yr$ (Stillwater Sciences 1998). According to regional averages, approximately 3-3.5 percent of sediment under reference conditions would have consisted of bedload in high-order channels (Benda 1994, Curtis 1975). The drainage area of the North Fork above the dam is approximately 312 mi^2, or 811 km^2 (PacifiCorp 2002). A range of approximately 1,400-2,200 yds^3 of bedload material are transported downstream annually.

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

4.A. *The licensee shall initiate annual augmentation of bedload gravel supplies in the bypass reach downstream of North Fork Dam within one year of issuance of the new license. The licensee shall consult with ODEQ, USFWS, and ODFW to determine the quantity, quality, and timing of the gravel augmentation. Within six months after issuance of the new license the licensee shall develop a written implementation plan that incorporates all recommendations provided by the agencies during consultation.*

4.B. *Within six-months after issuance of the new license the licensee shall develop, in consultation with the ODEQ, USFWS, and ODFW, an operations plan for passing large woody debris past project dams. The operations plan shall incorporate all agency recommendations and address the timing, size, and amount of woody debris passed.*

5. Wildlife

During relicensing studies, 98 species of wildlife were observed, including 6 amphibians, 9 reptiles, 64 birds, and 19 mammals. More species than those that were actually observed probably use the project area, for example 72 species of mammals potentially occur in the area.

ODFW's goals and objectives for the Prospect area wildlife populations of the Rogue River are found in the following statutes and rules:

- Wildlife Policy (ORS 496.102)
- Oregon's Elk Management Plan
- Oregon's Black Bear Management Plan
- Oregon's Cougar Management Plan
- Wildlife Damage Policy
- Wildlife Diversity Plan (OARs 635-100-0001 through 0030)
- Wildlife Diversity Program. Species at Risk: Sensitive, Threatened, and Endangered Vertebrates of Oregon. Portland, Oregon.
- Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0000-0030)

The project is located in ODFW's Rogue wildlife unit. ODFW has been working to improve deer winter range in this unit. Currently deer populations are at 66% of the management objective. Elk are managed consistent with our Elk Management Plan that includes the objective to maximize recruitment into elk populations and maintain bull ratios at management objective levels. Currently elk populations are at 65% of management objectives for this unit. ODFW's Wildlife Diversity Plan includes the objective to protect and enhance populations of all native species at self-sustaining levels throughout their natural geographic ranges by supporting the maintenance, improvement, and restoration of habitats and by conducting other conservation actions.

The project includes approximately 9.25 miles of canals, flumes, and penstocks, which are obstacles to wildlife moving through the area. The fencing that surrounds the canals protects large mammals from becoming entrapped in project waterways, however, small animals are able to pass through the fence mesh and become vulnerable to entrapment, particularly those with small home ranges and patchy distributions. The actual impacts to small animal populations remain unquantified, however ODFW believes that impacts are substantial. Seasonal movements of reptiles and amphibians are a well-documented aspect of their life history. The canals could represent an important cause of mortality or block dispersion and genetic flow for some species. ODFW recommends providing and evaluating small openings in the fencing, along with structures to direct small wildlife to narrow, but more frequent crossing structures.

The wildlife crossings now in place are too narrow to provide adequate passage for big game and may not be strategically located. ODFW recommends that crossings be brought up to date with current standards recently applied at other

hydroprojects and use of the crossings by wildlife be quantified and documented.

Failure of the waterways results in impacts to riparian and aquatic habitats by erosion and sediment deposition.

Overhead lines on the landscape pose potential hazards for many avian species. Collision can be a major source of mortality for some avian species, especially where power lines and towers or poles are present in the path of migrating concentrations of birds such as passerines or raptors. Collision can be a mortality factor both during the daytime and at night, and can also be related to weather conditions. The probability of collision is related to characteristics of particular bird species and to the environmental characteristics of the particular area.

Raptors are the avian species of greatest concern for electrocution because of their larger sizes and their attraction to powerlines and associated poles and towers for roosting, perching, hunting and nesting. Species that prefer open locations, rather than forest interior habitats, are also the most susceptible, and include golden and bald eagles, osprey and red-tailed hawks. Generally, power poles can be modified for safe use by raptors and should be planned to accommodate or even encourage safe use for nesting, perching and feeding.

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

5.A. *The licensee shall increase the width of all existing big-game bridges across project waterways to 36 feet and provide suitable habitat components, as determined by ODFW and USFWS, on crossing surfaces to facilitate use by all classes of terrestrial species. These crossings shall be expanded within the first year after issuance of the new license.*

5.B. *The licensee shall install new wildlife crossings at a width of 36 feet within two years after the new license is issued. The bridges shall be constructed at locations that will maximize opportunities for wildlife movement as determined through consultation with ODFW and USFWS.*

5.C. *The licensee shall install structures at intervals of approximately 200 feet to provide opportunity for small animals to cross waterways. The design and location of these structures will be determined in consultation with ODFW and USFWS. The licensee shall develop a written plan incorporating agency recommendations on design and location of the structures.*

5.D. *The licensee shall develop and implement in consultation with ODFW and USFWS a written monitoring plan to evaluate the efficacy of wildlife crossings. The plan shall be completed within one year after issuance of the new license*

and implemented at once when upgrading existing wildlife crossings and when installing new crossings. ODFW and USFWS may require, based on monitoring results, the licensee to install additional wildlife crossings by the fifth anniversary of the new license.

5.E. *The licensee shall continue to maintain the existing fencing around the waterways to prevent entrapment of wildlife. The licensee shall consult within six months of issuance of the new license with ODFW and USFWS and include their recommendations into a written annual inspection and maintenance program for the wildlife crossings and waterway fencing. The licensee shall provide and annual written report of inspection and maintenance activities to the agencies by March 1 of each year.*

5.F. *The licensee shall implement measures to minimize adverse interactions between Project power lines and birds. Any pole involved in a bird fatality will be retrofitted or rebuilt to increase safety for large perching birds. In addition, all new or rebuilt power poles will be constructed following guidelines in the publication entitled "Suggested Practices for Raptor Safety on Power Lines: The State of the Art in 1996" (APLIC 1996).*

5.G. *The licensee shall conduct operation and maintenance activities in the Project area following the most current spatial and temporal guidelines for avian protection. Activities within 400 meters of active raptor nests will be conducted outside the nesting season.*

5.H. *The licensee shall follow the existing Agreement for Management of Birds on Powerlines, among PacifiCorp, ODFW, and the USFWS dated February 18, 1988. The agreement promotes cooperation between PacifiCorp and the signatory agencies and includes procedures for dealing with bird mortality and problem nests. Records of dead birds found near project facilities will be kept in a database and annual reports that summarize program activities within the project area will be submitted to ODFW and USFWS.*

6. Recreation

The only developed recreation area within the project is the North Fork Park. The downstream waters affected by the project include stream reaches below the North Fork Dam, the Middle Fork Dam, Red Blanket Dam, and the lower South Fork (downstream of its confluence with the Middle Fork). The recreation use in most project reaches is limited and is primarily angling, although hunters also use the area. The reach below North Fork Dam is accessible to the public and is used primarily for passive streamside recreation, swimming, and wading. The impoundment created by the diversion dam provides opportunities for flat-water activities such as angling, boating, and canoeing.

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

6.A. *The licensee shall allow the public free access to project waters and adjacent project lands owned by the licensee for the purpose of full public utilization of such lands and waters for outdoor recreational purposes, including wildlife viewing, angling, and hunting.*

7. Emergency or Special Conditions

ODFW believes that the new license should include conditions for managing emergencies at project facilities that may cause harm or mortality to fish and wildlife species or their habitats. The license should also include conditions that enable ODFW to recommend new mitigation measures in the event that existing measures prove ineffective or if a fish or wildlife species is newly listed under the state or federal Endangered Species Acts (ESA).

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

7.A. *If at any time, unanticipated circumstances or emergency situations arise where fish or wildlife are being killed, harmed or endangered by any of the project facilities or as a result of project operation, the operator shall immediately take appropriate action to prevent further loss. The operator shall immediately notify the nearest office of the ODFW, USFWS, ODEQ and OWRD, and comply with any reasonable restorative measures required by the resource agencies.*

7.B. *These conditions may be amended at any time during the term of the license if unanticipated impacts to fish and wildlife (or fish and wildlife habitat) has occurred or will occur, or if there is a change in the Endangered Species Act status of a species affected by the project.*

7.C. *It is the responsibility of the project operator to consult with all appropriate local, state, or federal agencies before repairing or modifying the hydroelectric project, and to obtain and comply with all required permits.*

8. Project Abandonment and Decommissioning

Hydropower generation may decline as an energy source in the future. In 30 years, resource economics and environmental impacts as well as alternative

sources of energy development may make some hydroelectric facilities obsolete. ODFW believes it is in the public interest and makes prudent business sense for FERC to require the operator to establish a dam decommissioning and removal provision for the project. However, it is recognized that project abandonment and decommissioning costs may be very expensive.

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

8.A. *Upon project abandonment, the owner/operator shall remove or modify project facilities and restore pre-project conditions in any manner reasonably required by federal and state agencies to maintain fish and wildlife production in the project affected area. FERC shall include a license article to make financial provisions, or otherwise make reasonable provisions for retirement of the project.*

9. License Period

A new license for this project should be reopened in 30-years so continuing impacts to fish and wildlife can be reassessed. The current DLA does not include proposals to significantly modify project structures or operations to address long standing impacts to fish and wildlife resources. A longer license term will only delay bringing the project up to date with rapidly changing environmental protection measures in the future.

Recommendations *Pursuant to section 10(j) of the Federal Power Act, ODFW recommends that FERC include the following conditions in the new license:*

9.A. *ODFW recommends that the period of the new license for the Prospect 1, 2, and 4 Project be for no more than 30 years.*

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