

5.0 STAFF'S CONCLUSIONS

5.1 COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a) of the FPA, 16 U.S.C. 797(e) and 803(a)(1) require the Commission to give equal consideration to developmental and non-developmental uses of the waterway on which a project is located. When we review a hydropower project, we consider the water quality, fish and wildlife, recreational, and other non-developmental values of the waterway equally with the project's electric energy and other developmental values.

This section presents our rationale in balancing the developmental and non-developmental values and our recommendations for the plan best adapted to comprehensive development of the waterway. Our balancing analysis considers the comparative environmental effects of the alternatives (section 3.0, *Environmental Consequences*), their economic viability (section 4.0, *Developmental Analysis*), and their consistency with relevant agency recommendations, comprehensive plans, and laws and policies (sections 5.2, 5.3, and 5.4, respectively).

Based on our independent review and analysis of the project, the measures proposed by Chelan PUD, and the additional measures recommended by agencies and other stakeholders, we recommend relicensing the project as proposed with our additional staff-recommended environmental measures (staff alternative) as discussed below.

We are recommending the staff alternative because: (1) issuance of a new license would allow Chelan PUD to continue to operate the project as a dependable source of electric energy for its customers; (2) the 865.76-MW project would avoid the need for an equivalent amount of fossil-fuel fired electric generation and capacity elsewhere, continuing to help conserve these non-renewable energy resources while reducing atmospheric pollution; and (3) the recommended environmental protection and enhancement measures would improve water quality, protect or enhance fish and terrestrial resources, improve public use of recreational facilities and resources, and maintain and protect historic and archaeological resources within the area affected by project operation. The overall benefits of this alternative would be worth the cost of proposed environmental measures.

We recommend including the following environmental measures proposed by Chelan PUD in any license issued for this project, but excluding certain specific elements of the measures, as noted:

1. Finalize and implement a Shoreline Erosion Management Plan;
2. Finalize and implement a Water Quality Plan;

3. Continue to implement the HCP for Rocky Reach to protect salmon and steelhead;
4. Continue to operate and maintain Rocky Reach anadromous fish passage facilities, including the new juvenile fish bypass system and the adult fish ladder;
5. Continue and enhance predator control programs at the project to minimize losses of anadromous fish to predation;
6. Finalize and implement a Rocky Reach White Sturgeon Management Plan (the timing of any hatchery construction would be established as part of the Plan);
7. Finalize and implement a Pacific Lamprey Management Plan;
8. Finalize and implement a Resident Fish Management Plan³⁴;
9. Continue to implement the Bull Trout Management Plan approved by the Commission on April 19, 2005;
10. Finalize and implement a wildlife habitat management plan for the project lands³⁵ (not including habitat restoration and management at Chelan WMA or funding for BLM or Forest Service management);
11. Finalize and implement the Historic Properties and Cultural Resources Management Plan; and
12. Finalize and implement a Recreation Resources Management Plan³⁶ (not including ballfield development or recreation fund).

After evaluating Chelan PUD's proposal and recommendations from resource agencies and other interested parties, we considered what, if any, additional environmental measures would be necessary or appropriate with continued operation of

³⁴ Includes establishment and ongoing work of the RR Fishery Forum, a recommending body in which Chelan PUD, fisheries agencies, and the Tribes discuss, develop, and modify measures to guide implementation of the various fish management plans that would be part of any final license orders.

³⁵ Includes establishment and ongoing work of the RR Wildlife Forum, a recommending body in which Chelan PUD, wildlife agencies, and the Tribes discuss, develop, and modify measures to guide implementation of the various habitat management actions that would be part of any final license orders.

³⁶ Includes establishment and ongoing work of the RR Recreation Forum, a recommending body in which Chelan PUD and other parties discuss, develop, and modify measures to guide implementation of the Recreation Plan that would be part of any final license orders.

the project. In addition to Chelan PUD's proposed measures, we recommend the following refinements and additional environmental measures:

1. Conduct temperature monitoring from August through October for up to 3 years to facilitate modeling late summer and early fall temperature conditions;
2. Develop an operations plan and revise it annually until the state water quality standard for TDG is met to facilitate adaptively operating the project to benefit fisheries resources and reduce TDG;
3. Implement upstream Pacific lamprey passage activities, including annual passage counts and radiotelemetry counts every 10 years, and annually submit to the Commission a report summarizing results and offering proposals for fishway modifications if warranted to meet Pacific lamprey plan goals;
4. Develop and implement a plan to monitor and control aquatic invasive species;
5. Expand current eagle and goose nesting surveys to include other species and potential habitat enhancement projects;
6. Maintain the native habitat on Chelan PUD's Sun Cove properties in its current condition and bring the properties into the project boundary;
7. As an element of agency coordination under the Recreation Resources Management Plan, include provisions for WDFW recommendations for fencing at Lincoln Rock State Park and maintaining public overland access to the Eastbank hatchery outfall stream, using native plants for revegetation at Entiat State Park to the extent possible, and minimizing the removal of woody vegetation and impacts to riparian vegetation when siting the Entiatqua Trail;
8. Every 6 years, in concert with the FERC Form 80 filing, prepare a report summarizing the RR Recreation Forum and Forum subgroup discussions; submit the report to the stakeholders for comment; provide a response to any comments; and file the report with the Commission;
9. Include recreational use monitoring and ongoing assessment of other recreation-related effects on BLM lands within the project boundary as a component of the Recreation Resources Management Plan and every 6 years, in concert with the FERC Form 80 filing, include in the Recreation Forum report (see item 8 above) the results of recreation monitoring and proposals to mitigate any damage that can be substantively linked to project-related recreational use; and

10. Develop an information and education program as a component of the Recreation Resources Management Plan for project-related improvements to provide consistency for educational and interpretive opportunities developed as part of the Recreation Resources Management Plan.

Most of the measures proposed by Chelan PUD and the staff would reduce the net benefits of the project. We discuss the most substantive of these measures in the following text. We also discuss measures not included in our recommended alternative.

5.1.1 Soil Erosion Management Plan

Chelan PUD's proposal includes four elements to address erosion, including: (1) performing erosion repair work at four sites selected by Chelan PUD to demonstrate appropriate erosion control techniques and educate the public about such techniques; (2) making information on erosion control methods available to local governments and individuals with land along the reservoir shoreline; (3) monitoring shoreline erosion during the new license term; and (4) planning and carrying out appropriate erosion repairs at a BLM site within the project boundary. The first three elements of Chelan PUD's proposed Shoreline Erosion Management Plan could be implemented at an annualized cost of \$20,720 and would stabilize four sites that are currently eroding, provide the public with information and tangible examples of appropriate stabilization techniques that can be used on property not owned by Chelan PUD, provide the public with information regarding stewardship measures that can be used to prevent shoreline erosion, and provide a basis to identify new erosion sites and existing sites that continue to be in need of remedial work. We conclude that these benefits would be worth the associated costs. The fourth element of Chelan PUD's proposal, which is also included in Chelan PUD's proposed Cultural Plan, would have Chelan PUD planning and implementing erosion repairs at a BLM site within the project boundary. This measure would provide protection for a cultural site that the Cultural Plan recommends for stabilization at an estimated cost of \$200,000 (equaling an annualized cost of \$16,620), and we conclude that this site protection would be worth the associated cost.

5.1.2 Water Quality Plan

With the exception of the numeric criteria for temperature and TDG, the Columbia River within the project area meets the applicable water quality standards (refer to tables 1 and 6). Three water quality issues would likely require management through implementation of compliance plans: (1) water temperature, (2) TDG, and (3) oil and hazardous material spill prevention and countermeasures. Chelan PUD has addressed these issues and the results of six water quality studies in a Water Quality Plan that provides WDOE with the basis for issuing the water quality certification. Chelan PUD plans to continue to implement water quality measures, including monitoring. Implementing the Water Quality Plan that Chelan PUD proposes and we recommend would incur an annualized cost of \$100,000 and would allow Chelan PUD to meet

required state water quality standards, a goal supported in the recommendations of WDOE, the Umatilla Tribes, the Yakama Nation, and American Rivers, and which would benefit all uses, including fish (including salmonid species) and wildlife habitat, water supply (domestic, irrigation, industrial), recreation, and navigation. Although Chelan PUD's temperature monitoring proposal would provide data to aid in more robust modeling to better evaluate potential project effects, we recommend that Chelan PUD also monitor temperatures hourly from August through October at each of the proposed monitoring sites at a cost of \$5,000 per year for a period of up to 3 years. This additional temperature data would facilitate modeling late summer and early fall conditions and enable monitoring of compliance with state water quality standards, which could also benefit fish through improved water quality should measures be deemed necessary.

Consistent with the recommendation made by the Umatilla Tribes and Yakama Nation, we recommend that Chelan PUD prepare and annually review and update a detailed operations plan relative to TDG and GBT to meet performance goals with respect to native fish. We recommend that Chelan PUD implement measures for meeting water quality standards, including TDG, within a 10-year period. This would include an 8-year period for adaptively developing and implementing TDG abatement measures, followed by a 2-year period to pursue other means of satisfying Washington State water quality standards. To provide oversight to the adaptive management of water quality, we include in the staff alternative the Umatilla Tribes and Yakama Nation recommendation that Chelan PUD annually develop/revise a detailed operations plan for the upcoming year. However, we recommend that the plan be reviewed and updated annually only until such time as state water quality standards are met, at an annualized cost of \$2,830. We do not recommend adopting the recommendation of the Umatilla Tribes and the Yakama Nation that Chelan PUD establish a special water quality committee. We estimate that the cost of this measure would be \$5,000 annually, and we conclude that such a measure would be unnecessary since the proposed function of the committee would be adequately addressed by the RR Fishery Forum.

5.1.3 HCP Implementation for Anadromous Fish

Implementation of the Rocky Reach HCP is a key element of Chelan PUD's proposal. The HCP is a 50-year agreement to protect five species of Columbia River steelhead and salmon: spring and summer/fall Chinook salmon, sockeye salmon, coho salmon, and steelhead, which are collectively referred to as the Plan Species. The HCP aims to result in no net impact on the Plan Species by implementing a combination of mitigation tools to achieve fish passage survival rates and a virtual 100 percent survival of fish passing the project. Components of no net impact include 91 percent combined juvenile and adult project survival achieved by project improvement measures implemented within the geographic area of the project, 7 percent achieved through hatchery programs, and 2 percent achieved through the tributary program, which includes a fund for habitat improvements. Under the terms of the HCP, if the HCP terminates

before the end of the license term, Chelan PUD would continue to implement the last agreed-to measures until the Commission orders otherwise.

The HCP relies on the juvenile fish bypass system as the primary method for increasing juvenile salmonid survival. As prescribed in the HCP, Chelan PUD would continuously operate the juvenile bypass system from April 1 to August 31 each year to protect the juvenile fish migration. The HCP also specifies spill as a means of increasing survival of juvenile salmonids as they pass through the project. The HCP specifies that Chelan PUD would provide spill to pass fish during a time period that encompasses 95 percent of each species' downstream migration. The HCP calls for continued use of the existing fishway to facilitate upstream passage for adult salmon and steelhead (as well as other fish species that use this pathway, including bull trout). The HCP establishes a survival standard for adult Plan Species that must be achieved when technology becomes available to measure adult survival, with a three-phase program that would provide for adjustments to ensure biological success.

Full implementation of the HCP as a means of protecting anadromous fish, which would be achieved at an annualized cost of \$14,662,233, has wide-spread support among the stakeholders and is included in Interior's and NOAA Fisheries' Section 18 fishway prescriptions, WDFW's 10(j) recommendations, and the recommendations of WDOE and the Yakama Nation. The Umatilla Tribes recommend alternative goals, including reduced juvenile salmonid mortality goals for 2013 and 2020, adult salmon upstream survival goals of 97 to 98 percent by 2013, and additional funding for regional evaluations of salmon stocks.

In both its Master Order (107 FERC ¶ 61,280) and its Order Amending the Rocky Reach Project license (107 FERC ¶ 61,281), the Commission accepted the proposed HCP and its associated measures, indicating that "the orders will serve the public interest by putting into place a long-term program to aid in the recovery of the endangered species and help to prevent other salmonids from becoming listed." The Commission based its approval of the HCP on the environmental analysis presented in the NOAA Fisheries FEIS (NMFS, 2002) for the HCP, with the Commission participating as a cooperating agency, and after consideration of all comments from other parties that pertained to the HCP. The Umatilla Tribes recommend passage standards for juvenile and adult salmon through the entire project, with mortality defined as direct and delayed mortality. However, as we discuss in section 3.4.2.1, *Actions Covered by the Rocky Reach Anadromous Fish Agreement and Habitat Conservation Plan*, there is currently no proven method for accurately differentiating project-caused mortality and natural mortality. Additionally, the Umatilla Tribes' recommendation does not propose any measures to address losses resulting from failure to pass through the project as does the Commission-approved HCP. Because the Umatilla Tribes' more stringent standards have unknown costs and benefits, it is not apparent what public benefit would be realized by

implementing the Tribes' standards compared to the HCP. Therefore, we do not recommend adopting the Umatilla Tribes' proposed standards.

5.1.4 White Sturgeon Management Plan

Chelan PUD proposes to implement a White Sturgeon Management Plan designed to promote white sturgeon population growth in the project reservoir to a level that is supportable by the available habitat. The White Sturgeon Management Plan, which is still being developed, currently includes a supplementation program, a monitoring program, long-term indexing, investigation of emigration rates of the supplemented population, supplementation program review, determination of carrying capacity of available habitat, and evaluation of spawning potential. The White Sturgeon Management Plan would include consideration of a new hatchery as one of several potential elements of a supplementation program, but does not specify a schedule for hatchery construction. Development and implementation of a White Sturgeon Management Plan was endorsed by recommendations of the Umatilla Tribes and Yakama Nation as well as by the 10(j) recommendations of Interior and WDFW. The Umatilla Tribes and the Yakama Nation made additional recommendations, calling on Chelan PUD to implement a 4-tier sturgeon study and construct a hatchery facility within 5 to 15 years of new license issuance to supplement the sturgeon population. WDFW concurred in the recommendation for constructing a hatchery facility, although they recommended construction in year 3 of a new license, and also recommended that Chelan PUD coordinate with other relevant entities involved in sturgeon research or management and fund a 0.5 full time equivalent WDFW biologist specializing in sturgeon biology. Interior recommends that the hatchery be constructed in year 2 of a new license.

As we note in our analysis in section 3.4.2.2, *White Sturgeon Populations*, development and implementation of a White Sturgeon Management Plan, as described in Chelan PUD's proposal and in the terms and conditions letters by WDFW, Interior, the Umatilla Tribes, and the Yakama Nation, would address existing data uncertainties with respect to white sturgeon in a comprehensive manner and would benefit white sturgeon populations by potentially providing information that would aid in the development of actions that could be used to enhance white sturgeon abundance in response to project-related impacts. As proposed by Chelan PUD, the total annualized cost of finalizing and implementing the plan would be \$205,830, a cost that we conclude is reasonable given the potential benefit to white sturgeon populations that it would provide. We recommend that Chelan PUD develop a White Sturgeon Management Plan in consultation with WDFW, Interior, Umatilla Tribes, and Yakama Nation, with a goal of identifying and mitigating project effects on white sturgeon. Development of the plan should consider implementation of the measures listed by WDFW, Interior, Umatilla Tribes, and Yakama Nation to the extent that they would identify or mitigate for project effects on white sturgeon. The Umatilla Tribes, Yakama Nation, Interior, and WDFW recommend construction of a hatchery facility; however, the results of the initial investigations into

the success of the supplementation program and other study results are currently unknown. We therefore do not recommend constructing the hatchery at the time specified by the Umatilla Tribes, Yakama Nation, Interior, and WDFW.

WDFW recommended that Chelan PUD coordinate white sturgeon mitigation efforts with regional experts and managers, including cost sharing, matching funds, and integrating project efforts with regional white sturgeon programs. While some coordination of white sturgeon mitigation efforts would be inherent in the implementation of these activities, coordination with regional experts and managers, integrating project efforts with regional white sturgeon programs, and seeking cost-sharing and matching funds would not be necessary to address or mitigate for project effects on white sturgeon. Thus staff does not recommend inclusion of such provisions as a requirement in any license issued for the Rocky Reach Project. However, we have no objection to Chelan PUD pursuing such activities on their own.

We do not recommend adopting WDFW's recommendation that Chelan PUD make available annual funds of \$30,000 to fund a half-time white sturgeon biologist. While funding such a position could support informed participation related to white sturgeon management on the part of WDFW, it is Chelan PUD's responsibility to ensure that environmental measures that may be specified in a new license or that are specified in a White Sturgeon Management Plan that would require Commission approval, are implemented in accordance with the requirements of a new license; therefore requiring Chelan PUD to fund agency oversight of such matters is not warranted.

5.1.5 Pacific Lamprey Management Plan

Specific reasons for the fluctuations in Pacific lamprey populations throughout their range in the United States are not fully understood. Of several reasons advanced for the population decline, only those related to upstream and downstream passage and habitat conditions in the reservoir may be affected by operation of the project. Chelan PUD completed a review of measures that have been used at other hydroelectric facilities to improve adult passage, and it is probable that some of these measures would be effective at the project. As part of Chelan PUD's proposed Pacific Lamprey Management Plan, to be implemented at a total annualized cost of \$13,220, Chelan PUD proposes to implement adult passage counts, conduct juvenile impingement monitoring, participate in regional research, and complete other measures to be developed in the Pacific Lamprey Management Plan. Under their proposal, Chelan PUD would investigate the feasibility of making fishway modifications that could enhance upstream passage of adult lamprey. This would address current passage inefficiencies that have been identified, and the proposed continued monitoring would document the upstream passage effectiveness after any modifications that are implemented. We conclude that the potential benefits to lamprey of implementing Chelan PUD's Pacific Lamprey Management Plan would be worth the cost of the program as described.

We are not recommending that Chelan PUD conduct adult telemetry studies of Pacific lamprey passage through the fishways since Chelan PUD has already completed these studies. We are recommending that Chelan PUD conduct the upstream passage activities (annual counts, fishway modifications, and the radiotelemetry program at 10 year intervals) recommended by WDFW as part of the Pacific Lamprey Management Plan. This would address the similar recommendation made by Interior and the Tribes that did not specify the frequency of the telemetry studies. We are not recommending the habitat assessments recommended by WDFW, Interior, and the Tribes because they would not specifically benefit lamprey populations within the project area or identify or mitigate for ongoing project effects.

WDFW recommended that Chelan PUD coordinate Pacific lamprey mitigation efforts with regional experts and managers, including cost sharing, matching funds, and integrating project efforts with regional lamprey programs. While some coordination of lamprey mitigation efforts would be inherent in the implementation of these activities, coordination with regional experts and managers, integrating project efforts with regional lamprey programs, and seeking cost-sharing and matching funds would not be necessary to address or mitigate for project effects on Pacific lamprey. Thus staff does not recommend inclusion of such provisions as a requirement in any license issued for the Rocky Reach Project. However, we have no objection to Chelan PUD pursuing such activities on their own.

Implementing the HCP, which we recommend, may provide additional benefits to Pacific lamprey passing the project and inhabiting tributaries to the Columbia River in the vicinity of the project. Such actions would include operation of the juvenile bypass system, which would provide a safe passage route for downstream migrating macrophthalmia, and implementation of the Northern pikeminnow predator control program, which would reduce the predation mortality of downstream migrating macrophthalmia.

While monitoring upstream and downstream lamprey passage, as described in Chelan PUD's proposal, would be a valuable tool for evaluating whether structural or operational modifications need to be implemented or existing measures need to be refined, we do not adopt the Umatilla Tribes' and Yakama Nation's recommendations for Chelan PUD to meet specific performance standards for downstream lamprey migrations (80 percent passage short term and 97 to 98 percent long term), because the technology to measure that performance does not yet exist. Juvenile lamprey have been observed in the juvenile fish bypass system and Chelan PUD's proposed monitoring of juvenile lamprey would provide an additional measure of downstream passage effectiveness. However, quantifying the number of juvenile lamprey that pass through the powerhouse turbines or over the spillway in a meaningful manner, which would be needed to address the tribes' performance standards, is not currently feasible.

We do not recommend adopting elements of the Tribes' and Interior's recommendations to fund research into radio-tag ballon tag technology, or the Tribes' recommendation to fund artificial propagation of juvenile lamprey for passage research. These are not specific measures that would benefit the resource, nor would they mitigate any project effects.

We do not recommend adopting WDFW's recommendation for Chelan PUD to make available \$30,000 annually to fund a WDFW fish and wildlife biologist specializing in Pacific lamprey. While funding such a position could support informed participation related to Pacific lamprey management on the part of WDFW, it is Chelan PUD's responsibility to ensure that environmental measures that may be specified in a new license or that are specified in a Pacific Lamprey Management Plan that would require Commission approval are implemented in accordance with the requirements of a new license. Therefore, requiring Chelan PUD to fund agency oversight of such matters is not warranted.

5.1.6 Resident Fish Management Plan

The habitat enhancement measures proposed by Chelan PUD's Resident Fish Management Plan are intended to continue actions required under the existing license to mitigate unavoidable project-related effects on anadromous fish and for lost fishing opportunities for resident fish of recreational value. The elements of the plan include a continuation of the existing fish stocking program to enhance off-site recreational fishing opportunities. WDFW and Interior supported Chelan PUD's proposal. Control of pikeminnow, a predator to juvenile salmonids, through continued support of a pikeminnow derby would enhance recreational opportunities for that fish and would benefit juvenile salmonids (e.g., cutthroat trout) by reducing the number of predators in the reservoir.

WDFW's proposed Resident Fish Management Plan also includes a list of "resident fish enhancement measures." Funds for this measure were originally intended to support habitat modifications at Twentyfive Mile Creek, a tributary to Lake Chelan, as off-site mitigation for lost recreational opportunities in the project reservoir. Due to a storm event that inundated the Twentyfive Mile Creek spawning channel with silt, members of the NSWG developed a list of potential projects, most in the Lake Chelan Basin, that might be funded with money originally earmarked for the Twentyfive Mile Creek enhancements. These range from habitat and fish production enhancement activities to funding increased access for recreational fishing. Habitat improvements and culvert modifications at Twentyfive Mile Creek, as well as Lake Chelan tributary enhancements, could provide more suitable spawning habitat for kokanee or other resident fish in Lake Chelan. Installation of remote site incubators could improve the recruitment of salmonid fry over natural conditions. Increasing fishing pier availability for the public could improve the opportunity for recreational fishing for non-boaters. Funding food-web model studies would not directly benefit resident fish populations.

However, results of such a study has the potential to provide information that fish managers could use in the future to increase populations of resident fish.

The potential measures to replace the Twentyfive Mile Creek spawning habitat identified in WDFW's recommendations would serve to mitigate ongoing effects of the Rocky Reach Project on resident fish. Since the measures would all be implemented in or around the Lake Chelan Project area, the funds and actions would be administered by the Lake Chelan Fisheries Committee. The cost of these resident fish measures would be \$10,150 annually. We are recommending implementation of these measures because they would provide beneficial enhancements to resident fish in the project vicinity at a reasonable cost. However, to the extent that any of the resident fish/fishing enhancement measures implemented in the project vicinity would require ongoing maintenance, we recommend that these enhancement areas be incorporated into the project boundary to ensure Commission oversight of the necessary maintenance.

5.1.7 Bull Trout Management Plan

On February 28, 2005, Chelan PUD filed its Bull Trout Management Plan under Article 411 of the existing license for the project, and the Commission approved the plan on April 19, 2005 (111 FERC ¶ 62,071). The plan as approved by the Commission, and as supported by the Forest Service and by WDFW and Interior 10(j) recommendations, includes the following elements: (1) a monitoring program to identify potential project-related impacts to upstream and downstream passage of adult and subadult bull trout, (2) evaluation of potential stranding or entrapment that may occur, (3) participation in regional bull trout monitoring and research efforts, (4) implementation of impact minimization measures, and (5) implementation of conservation measures, as spelled out in the Bull Trout Management Plan. In its April 19, 2005, order approving the plan, the Commission indicted that implementation of the Bull Trout Management Plan was in the public interest and our analysis in this document further supports the conclusion that implementing the Bull Trout Management Plan as part of relicensing the Rocky Reach Project would be in the public interest. Therefore, we are recommending that implementation of the Bull Trout Management Plan be included in any license issued for the project.

We do not recommend adopting WDFW's 10(j) recommendation that Chelan PUD should make available funds to WDFW to support a full-time equivalent biologist who specializes in bull trout biology, at a cost of approximately \$60,000 per year. Since it is Chelan PUD's responsibility to ensure that environmental measures specified in a new license or specified in the Commission-approved Bull Trout Management Plan are implemented in accordance with the requirements of a new license, requiring Chelan PUD to fund other agency oversight of such matters is not warranted.

5.1.8 Other Fish and Wildlife Measures

As part of the relicensing process, technical groups were formed for each comprehensive plan (e.g., resident fish, white sturgeon, bull trout, Pacific lamprey, and wildlife) due to the complexity of issues surrounding each species and so that agency experts could focus on meetings pertaining to their specific area of expertise and not be required to attend all NRWG meetings. Chelan PUD proposes that the various technical groups continue to function as part of a RR Fishery Forum. WDFW and Interior make the same recommendation. We view the Tribes' recommendations to form a comprehensive fisheries and aquatics committee to be equivalent. The RR Fishery Forum would be a recommending body in which Chelan PUD, fisheries agencies, and the Tribes can convene to discuss, develop, and modify measures to guide implementation of the various fish management plans that would be part of any license order. We recommend that Chelan PUD continue the RR Fishery Forum as proposed and provide administrative support to the group. We do not support WDFW's recommendation that Chelan PUD not be part of the RR Fishery Forum. The RR Fishery Forum is proposed to address project impacts to affected species, and recommended actions would need to be approved by the Commission and implemented by Chelan PUD. It would not be reasonable to exclude Chelan PUD from discussions regarding proposed activities for which Chelan PUD would be responsible.

The Umatilla Tribes and Yakama Nation recommend that Chelan PUD develop a detailed fishery operations plan to meet performance goals and objectives for all native species and water quality interests. In their response to comments (April 17, 2005), the Chelan PUD stated that they annually produce a Fish Passage Plan that is developed and reviewed in conjunction with state and federal fishery agencies and Tribes, and must be approved by NOAA Fisheries. We do not include the Umatilla Tribes and Yakama Nation recommendations that Chelan PUD develop a detailed fishery operations plan because it would duplicate current programs and would therefore not provide any net benefit to fish resources.

WDFW recommends that Chelan PUD prepare and implement an aquatic invasive species program, which we estimate would cost \$7,500 to prepare. WDFW did not include in its recommendation specific information about either the extent of the recommended program or the potential cost of such a program, and we are unable to estimate a cost, given the dearth of information on the record. WDFW specifically mentions in their recommendation two aquatic invasive species: Eurasian watermilfoil and zebra mussels. Chelan PUD already manages the Eurasian watermilfoil through routine harvest at public access points at its recreational facilities. In addition, though zebra mussels have not been identified in the project area, Chelan PUD is already monitoring their current dispersion and investigating potential methods for mitigating its impacts, should the species be detected in the project area. An aquatic invasive species prevention program would benefit native aquatic species by formalizing Chelan PUD's existing aquatic invasive species programs. Therefore, we recommend that Chelan PUD

develop an aquatic invasive species plan that describes Chelan PUD's efforts and plans to monitor and control aquatic invasive species.

We do not adopt WDFW's recommendation that would have Chelan PUD make available \$6,000 annually to support an aquatic invasive species inspector/biologist position at WDFW. Funding such a position could support informed participation related to aquatic invasive species management on the part of WDFW; however, we find that requiring Chelan PUD to fund WDFW oversight of such matters is not warranted.

5.1.9 Rocky Reach Wildlife Habitat Plan

Chelan PUD proposes to fund implementation of a comprehensive wildlife habitat management plan for the Chelan WMA—lands consisting of state and federal lands located outside the project boundary and managed by the WDFW, FS, BLM and WDNR. Chelan PUD would make available to WDFW \$35,060 annually (\$1,051,800 over a 30-year license) for habitat enhancement and restoration of shrub-steppe habitats to improve mule deer winter range and to benefit other wildlife of the shrub-steppe community, plus \$50,000 annually for general operation and maintenance of the Chelan WMA. The measures included in the comprehensive wildlife plan are designed to provide habitat enhancements to further improve upon existing habitats in the Chelan WMA.

WDFW seeks \$1,038,000 for equipment and supplies to restore 1,400 acres of shrub-steppe habitat and \$110,000 annually for general operation and maintenance of the Chelan WMA. The Forest Service and BLM seek annual funding of \$10,000 and \$40,000, respectively, to coordinate restoration actions on adjoining federal lands.

The low-elevation shrub-steppe habitats on the Chelan WMA, purchased with funding provided by Chelan PUD to mitigate the effects of project construction and operation, would benefit from habitat improvements to recover mule deer populations and provide life requisites for other wildlife dependant on these habitats. Wildfires have reduced the habitat value of shrub-steppe habitats on the Chelan WMA and adjoining federal lands. WDFW has not had sufficient funding to maintain state lands at desired habitat levels. Agriculture and residential development have placed greater pressures and value on remaining shrub-steppe habitats. The actions proposed in the comprehensive Rocky Reach Wildlife Habitat Management Plan would help recover and restore shrub-steppe habitats and mule deer populations.

However, continued project operation is not affecting the operation and maintenance of the Chelan WMA or the shrub-steppe habitats on state and federal lands. Riparian habitats adjacent to the project used by wintering mule deer are stable, well developed, and similar to those found prior to project construction. Funding levels identified by WDFW, BLM, and the Forest Service would make Chelan PUD entirely responsible financially for the annual operation, maintenance, and restoration of state and federal lands—a responsibility typically borne by the land owner. If the Commission

were to require Chelan PUD to implement the Rocky Reach Wildlife Habitat Management Plan as proposed by Chelan PUD or as recommended by WDFW, BLM, and the Forest Service, Chelan PUD would be responsible for ensuring that all habitat improvements are implemented.³⁷ The Commission would require all lands subject to Chelan PUD's annual operation, maintenance, and restoration funding to be brought into the project boundary, and Chelan PUD would need to acquire sufficient interests to accomplish the required actions. Because we cannot require acquisition of the lands³⁸, the project is not affecting these lands, and other wildlife measures proposed by Chelan PUD and recommended by staff are adequate, we are not recommending Chelan PUD provide additional support for the management of the state and federal lands outside the current project boundary. Chelan PUD may elect to assist the WDFW, Forest Service, and BLM outside of any new license issued.

As part of the Rocky Reach Wildlife Habitat Management Plan, Chelan PUD also proposes to continue to conduct wildlife surveys for bald eagles and Canada goose nesting at a cost not to exceed \$7,500 annually³⁹. In its 10(j) recommendations, WDFW recommends continuation of these surveys by Chelan PUD as well, although at a cost not to exceed \$10,500 annually⁴⁰, and indicates that the additional funds could be used for surveys of other threatened, endangered, and sensitive species and habitat improvement projects. We recommend that Chelan PUD continue the bald eagle and goose nesting surveys because they would provide valuable information for the continued management of these species. Providing additional support for species surveys and habitat improvement projects on project lands would gather information that may be beneficial to

³⁷ The Commission has often stated that it is the licensee's responsibility to complete measures required by the license articles, in the absence of authorization from the Commission to the contrary, and that cost caps are not absolute limitations (*See* Virginia Electric Power Co., 110 FERC ¶ 61,241 [2005] and Portland General Electric Co., 111 FERC ¶ 61,450 [2005]),

³⁸ Section 21 of the FPA states that no licensee may use the right of eminent domain to acquire any lands or other property that, prior to October 24, 1992, were owned by a State or political subdivision thereof and were part of or included within any public park, recreation area, or wildlife refuge established under State or local law.

³⁹ Because Chelan PUD's proposed expenditure of \$7,500 annually for these surveys is the same as their expenditure under the current license, the entry for this measure on table 19 is zero, because there would be no incremental cost associated with this measure under a new license.

⁴⁰ Table 19 includes a cost of \$3,000 annually for this measure, which reflects the difference between WDFW's \$10,500 recommendation and Chelan PUD's current expenditure of \$7,500 annually.

other threatened, endangered, or sensitive species in the project boundary⁴¹, and we therefore recommend adoption of WDFW's recommendation.

WDFW also recommends that Chelan PUD maintain the native habitat on Chelan PUD's Sun Cove properties in its current condition. The Sun Cove properties provide valuable shrub-steppe and riparian habitat adjacent to the east bank of the reservoir, where there are few lands managed strictly for the benefit of wildlife. Chelan PUD owns most of the approximately 111 acres of upland shrub-steppe habitats; the riparian habitat is privately owned. Recreation and residential development pressures, some of which might be attributed indirectly to the attraction offered by the project reservoir and lands, are threatening the habitat quality of the lands. Much of the available shrub-steppe habitat is fragmented by orchards, agriculture, and development. The Chelan PUD-owned Sun Cove property is a relatively large contiguous piece of shrub-steppe habitat. Protecting this habitat from development and disturbance from recreation and other human use would preserve a large piece of this valuable habitat in its native state. Based upon information concerning the operational budget for state wildlife areas, we estimate that this land could be protected without a large out-of-pocket cost to Chelan PUD. According to information we accessed at WDFW's web site (<http://wdfw.wa.gov/viewing/wildarea/wildarea.htm>), the operational budget for 15 state-funded wildlife areas is \$2.58 per acre and the budget for 7 mitigation-funded areas is \$10 to \$15 per acre. WDFW indicates that the higher funding level for the mitigation-funded areas allows for significant habitat improvements such as replanting riparian areas or native grasslands. Although significant habitat improvement is not required on the Sun Cove properties, occasional habitat management activities could be needed to maintain the habitat in its native state. Therefore, we estimate that an annual budget of \$5 per acre, or approximately \$555 annually, would be sufficient to implement this recommendation. We recommend that Chelan PUD bring its Sun Cove properties into the project boundary, and develop a plan to manage these lands in a way that will maintain the habitat in its current condition.

As part of the Rocky Reach Comprehensive WMP, Chelan PUD would implement an integrated noxious weed management program designed to manage and prevent the spread of noxious weeds within the project boundary and on public lands (Chelan WMA and adjoining federal lands) adjacent to the project reservoir; it would include a noxious weed control element specifically designed to protect the federally listed threatened Ute ladies'-tresses and other rare plants in the project area. Project reservoir fluctuations may be contributing to the spread of noxious weeds and affecting the reproduction and population viability of a number of rare plants. The noxious weed and rare species protection measures proposed by Chelan PUD would provide a mechanism to reduce,

⁴¹ The incremental cost associated with WDFW's recommendation would be \$3,000 annually. As noted elsewhere in this section, the Commission does not view cost caps as absolute limitations on the licensee's responsibilities.

control, and monitor noxious weeds on Chelan PUD and other private and public lands within the project boundary and immediately adjacent to the project reservoir. The proposed integrated noxious weed control program would be developed through interagency coordination, which would support a wider reaching plan than the current program that targets only purple loosestrife. At the estimated cost of \$15,000 annually, we recommend that Chelan PUD finalize and file for Commission approval an integrated noxious weed control program, including weed control measures specifically to protect Ute ladies'-tresses, that would be implemented on project lands and lands influenced by project reservoir fluctuations. The plan should delineate the lands subject to noxious weed management.

In addition to controlling noxious weeds that threaten populations of the federally listed Ute ladies'-tresses, Chelan PUD proposes to monitor populations of Ute ladies'-tresses. The populations are located on lands hydraulically connected to the project and also harbor other populations of rare plant species. Implementing the Ute ladies' tresses protection and monitoring measures would have an annualized cost of \$3,000, and would be worth the cost. Some of the Ute ladies'-tresses populations are located on private land outside the project boundary, therefore Chelan PUD proposes to acquire the interests to protect and monitor these populations. Conservation easements would provide adequate management protection on lands otherwise outside Chelan PUD's control. Although the cost of implementing this measure is unknown, we recommend that Chelan PUD pursue the acquisition of such conservation easements to protect this federally listed threatened species. Conservation easement lands requiring on-going maintenance would need to be brought into the project boundary.

We have included in the staff alternative Chelan PUD's proposal to consider public access to nature and wildlife viewing, as well as potential adverse recreational effects on wildlife habitat, during recreation management planning and site development. The cost of this measure would be included in the recreation plan and would provide for public interaction with nature while protecting valuable wildlife habitat from uncontrolled recreational use. We have included in our recommended alternative three measures advanced by WDFW in its 10(j) recommendations: (1) chain link fencing at Lincoln Rock State Park for wildlife habitat protection; (2) fencing and revegetation at Entiat Park with native species where possible; and (3) siting the Entiaqua Trail in consultation with WDFW. These measures would provide added habitat protection for a nominal cost, and should be incorporated in the measures considered by the RR Recreation Forum when plans for recreational improvements are finalized. We have not included in the staff alternative WDFW's 10(j) recommendation that Chelan PUD fund native habitat improvement for mitigation of 50 acres of disturbance associated with implementing the Recreation Resource Management Plan. Chelan PUD's proposed recreational improvements would have minimal effects on wildlife habitat because the improvements would occur at existing recreational sites, in areas that have received heavy dispersed recreational use, and in primarily urban lands in the city of Entiat. Potential impacts on

wildlife from recreation are adequately addressed through other measures recommended by staff.

WDFW makes a 10(j) recommendation for Chelan PUD to provide funds to WDFW to support 0.25 of a full-time equivalent fish and wildlife biologist at a cost of \$10,000 annually. WDFW indicates that this funding is needed to compensate for the additional work burden placed on WDFW to review various project proposals resulting from fulfillment of new license obligations. Additional staff could ensure a prompt response by WDFW to the need to review and permit various project activities. However, we find that providing funds for agency personnel to perform an agency's duties is not the responsibility of Chelan PUD in the context of a Commission license and is not required to fulfill the project's purposes; therefore, we are not including such funding requirements in the staff alternative. Chelan PUD may elect to assist the WDFW, Forest Service, and BLM outside of any new license issued.

5.1.10 Cultural Resource Management Plan

Key elements of Chelan PUD's proposed Historic Properties and Cultural Resources Management Plan include (1) formation of a RR Cultural Forum, composed of representatives from Chelan PUD and several agencies and tribes; (2) appointment of a Cultural Resources Coordinator; (3) implementation of an archaeological monitoring program to maintain current information about site conditions, plus stabilization and subsequent monitoring of cultural site 45CH254; (4) development of a stand-alone document for management of TCPs; (5) preparation of a curation plan to preserve the project's archaeological materials and provide documentation according to the guidelines of 36 CFR 79; (6) development of an integrated cultural resource information management system incorporating data from Chelan PUD's Lake Chelan Project, the Rocky Reach Project, and the Rock Island Project; and (7) development and implementation of an interpretive plan and educational program focusing on cultural resources. Implementing these measures at an annualized cost of approximately \$21,000⁴² would ensure that tribal treaty and trust rights for the protection of valued cultural resources are respected through the term of the new license, and we have included these measures in the staff's recommended alternative.

Interior's March 14, 2005 4(e) conditions call for a Protection, Mitigation, and Monitoring Plan "for all cultural sites on BLM-administered land adjacent to the Rocky Reach pool" and specific corrective measures for the erosion currently occurring on cultural sites 45CH254 and 45DO504. Chelan PUD's Shoreline Erosion Plan and their Cultural Plan provide for stabilization of site 45CH254. The Cultural Plan also provides for annual monitoring of the other nine known Register-eligible sites within the APE,

⁴² This cost does not include stabilization of site 45CH254, the cost of which is included in the Shoreline Erosion Plan.

including site 45DO504 and two other sites on BLM-administered land, and for taking corrective measures that may be found necessary to protect these sites from project-related effects. We interpret Interior's recommendation as being essentially the same as Chelan PUD's proposal, which we recommend.

5.1.11 Recreation Resources Management Plan

The annualized cost of implementing Chelan PUD's proposed Recreation Resources Management Plan would be approximately \$1,938,230, which would make the recreation resources program the costliest of Chelan PUD's proposed measures except for HCP implementation. Early in the relicensing process, Chelan PUD convened the Social Sciences Working Group, consisting of representatives from Forest Service, NPS, BLM, IAC, Washington State Parks, city of Entiat, Entiat Focus Group, Chelan PUD, and other interested parties to develop, conduct, and review project-related recreational studies. The primary recreational issues identified by the Social Sciences Working Group included continued O&M of existing recreational facilities, expansion/revitalization of some existing park facilities, creation/extension of multi-use trails, addressing the need for future evaluation of recreational use and needs, and creating a funding mechanism for implementing proposed environmental measures. Chelan PUD's proposal, which we have incorporated largely, but not entirely, into our recommended alternative, is designed to address those concerns by upgrading and expanding several existing parks; providing funding for the Entiat wastewater treatment plant to serve the needs of Entiat Park; trading land with the city of Entiat to consolidate ownership of lands within Entiat Park; and conducting recreation use studies periodically. WDFW's recommendations filed under 10(j) and Forest Service and Interior recommendations support the implementation of a Recreation Resources Management Plan.

We have not included in our recommendation two Chelan PUD proposed measures, including (1) funding to the Entiat School District for ball fields outside the project boundary; and (2) endowing a recreation fund to provide public access, recreational enhancements, and interpretation opportunities on lands outside the project boundary. In our analysis in sections 3.8.2.2 *Recreation Facility Measures* and 3.8.2.3 *Recreation Enhancement Fund*, we find that these measures are not related to the project; therefore, we do not consider these measures in our comprehensive development determination for the project.

We have included in our recommended alternative two additional measures, one proposed by BLM in its 4(e) conditions and one proposed by the Forest Service and modified by staff. These entail inclusion of recreation monitoring on BLM lands in the project area in the monitoring called for in the Recreation Resources Management Plan and development and implementation of an information and education program, also under the auspices of the Recreation Resources Management Plan. We conclude that the benefit of providing coordinated planning for recreational lands, including coordination

of information and education programs, would be worth the annualized cost of about \$5,000.

We have not adopted WDFW's recommendations filed under 10(j) that would have Chelan PUD provide a GIS layer for Wenatchee River fishing easements, fund a position for a habitat technician, provide O&M funding for Wenatchee fishing easements, fund an enforcement officer position, and provide funding for an enforcement vessel and trailer. As described in our analysis in Section 3.8.2.5, *Other Measures*, these measures are not related to any project effects and would not fill any demonstrated project need.

5.2 FISH AND WILDLIFE AGENCY RECOMMENDATIONS

Under the provisions of the FPA, each hydroelectric license issued by the Commission shall include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the project.

In response to our REA notice, the following fish and wildlife agencies submitted recommendations for the project: NOAA Fisheries (letter filed March 9, 2005), Interior (letters filed March 14, 2005 and June 1, 2005), and WDFW (letter filed March 9, 2005). Section 10(j) of the FPA states that whenever the Commission believes that any fish and wildlife agency recommendation is inconsistent with the purposes and the requirements of the FPA or other applicable law, the Commission and the agency shall attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency. Table 20 lists the federal and state recommendations filed subject to Section 10(j), and whether the recommendations are adopted under the Staff Alternative. Environmental recommendations that we consider outside the scope of Section 10(j) have been considered under Section 10(a) of the FPA and are addressed in the specific resource sections of this document. Of the 20 recommendations that we consider to be within the scope of Section 10(j), we wholly adopt 17, adopt 3 in part.

Table 20. Fish and wildlife agency recommendations for the Rocky Reach Project.
(Source: Staff)

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
1. Limit the term of the new license to not extend beyond 2054, the term of the HCP.	NOAA Fisheries, Interior (1)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	0	The Commission will make its determination regarding the term of any new license in the license order, based on the record.
2. Carry out the Tributary Conservation Plan and the Hatchery Compensation Plan, in their entirety, as set forth in the Rocky Reach anadromous fish HCP.	NOAA Fisheries, Interior (2,3)	Yes	\$14,662,233, included in Chelan PUD's proposal. ^b	Adopted.
3. Establish RR Fishery Forum, RR Wildlife Forum, and RR Recreation Forum.	WDFW (A.1)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	Included in other measures.	Adopted under Section 10(a).
4. Establish and convene a Rocky Reach Policy Committee to resolve conflicts within or among the Forums.	WDFW (A.2)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$5,000	Not adopted.
5. Perform obligations as specified in the Rocky Reach anadromous fish HCP.	WDFW (B.1)	Yes	\$14,662,233, included in Chelan PUD's proposal. ^b	Adopted.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
6. Implement the management strategies outlined in the Rocky Reach Bull Trout Monitoring and Management Plan, 2004–2008 dated December 29, 2004.	WDFW (C.1)	Yes	\$13,480, included in Chelan PUD’s proposal.	Adopted.
7. Fund 1 full-time equivalent Fish And Wildlife Biologist specializing in bull trout biology and management.	WDFW (C.2)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$60,000	Not adopted.
8. Prepare, fund, and implement a White Sturgeon Management Plan.	WDFW (D.1)	Yes	\$205,830, included in Chelan PUD’s proposal.	Adopted except for hatchery construction schedule.
9. Coordinate with other relevant entities involved in sturgeon research or management.	WDFW (D.2)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	Included in item 8	Not adopted.
10. Fund 0.5 full-time equivalent Fish And Wildlife Biologist specializing in sturgeon biology and management.	WDFW (D.3)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$30,000	Not adopted.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
11. Develop, fund, and implement a Pacific Lamprey Management Plan.	WDFW (E.1)	Yes	\$48,150; \$34,930 more than Chelan PUD's proposal.	Adopted.
12. Coordinate with other relevant entities involved in Pacific lamprey research or management.	WDFW (E.2)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	Included in item 11.	Not adopted.
13. Fund 0.5 full-time equivalent Fish And Wildlife Biologist specializing in Pacific lamprey biology and management.	WDFW (E.3)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$30,000	Not adopted.
14. Prepare and implement a Resident Fish Management Plan.	WDFW (F.1)	Yes	\$10,150, included in Chelan PUD's proposal.	Adopted.
15. Conduct periodic resident fish monitoring and evaluation studies.	WDFW (F.2)	Yes	Included in item 14	Adopted as part of Resident Fish Management Plan.
16. Make available funding for the production of approximately 30,000 pounds of rainbow trout, or other species for stocking in Chelan and Douglas counties.	WDFW (F.3)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$100,000; included in No-action.	Adopted as part of Resident Fish Management Plan.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
17. Make available funding for implementing resident fish/fishing enhancement measures in Rocky Reach Project vicinity (includes proposed measures on Twentyfive Mile Creek or other Lake Chelan tributaries).	WDFW (F.4)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$50,000 (years 1 through 10 only); included in Chelan PUD's proposal.	Adopted as part of Resident Fish Management Plan.
18. Make available funds for the operation and maintenance of the Chelan WMA.	WDFW (G.1)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$110,000	Not adopted.
19. Make available funding to purchase and eventually replace vehicles, equipment, office supplies, and tools to support restoration of approximately 1,400 acres in the Chelan WMA.	WDFW (G.3)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$86,240	Not adopted.
20. Continue to conduct annual wildlife monitoring surveys and/or habitat improvement projects.	WDFW (G.4)	Yes	\$10,500; (\$3,000 more than Chelan PUD's proposal).	Adopted.
21. Maintain the native wildlife habitat on Chelan PUD Sun Cove properties at its existing level of habitat function.	WDFW (G.5)	Yes	\$555.	Adopted.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
22. Prepare, fund, and implement a Recreation Resources Management Plan.	WDFW (H.1)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$1,938,230, included in Chelan PUD's proposal. ^c	Adopted under Section 10(a) except for ball field development and Recreation Fund (reducing annualized cost to \$1,585,240)
23. Erect chain link fencing along the margin of Lincoln Rock Park to extend an existing wildlife corridor and provide habitat for birds and rabbits.	WDFW (H.2)	Yes	\$290	Adopted as part of the Recreation Plan.
24. Maintain the existing public overland access route at Lincoln Rock Park to the Eastbank hatchery outfall stream.	WDFW (H.3)	No; not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	Included in item 22	Adopted as part of the Recreation Plan.
25. Use native plant species in revegetation efforts for wildlife habitat enhancements within Entiat Park to the greatest extent possible.	WDFW (H.4)	Yes	Included in item 22.	Adopted as part of the Recreation Plan.
26. Minimize the removal of woody vegetation when siting the Entiaqua Trail, and site the trail above the riparian zone to the extent possible to protect wildlife habitat.	WDFW (H.5)	Yes	Included item 22.	Adopted as part of the Recreation Plan.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
27. Fund a native wildlife habitat vegetative improvement project to mitigate for the loss of approximately 50 acres of native habitat to be lost due to proposed recreation facilities.	WDFW (H.6)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	Unknown.	Not adopted.
28. Provide WDFW with a GIS data layer of Wenatchee River fishing easements; fund 1.0 full-time equivalent habitat technician; and make available funds to support the continued operation and maintenance of the Wenatchee fishing easements	WDFW (H.7)	No; no clear nexus with project effects	Unknown.	Not adopted.
29. Fund 1.0 full-time equivalent WDFW enforcement officer.	WDFW (I.1)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$90,000	Not adopted.
30. Fund one enforcement vessel and trailer, and replace on a 10-year cycle.	WDFW	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$18,870	Not adopted.
31. Prepare, fund, and implement a prevention plan for aquatic invasive plants and mussels.	WDFW (J.1)	Yes	\$7,500	Adopted.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
32. Fund 0.10 full-time equivalent Aquatic Invasive Species Program Inspector/Biologist, with office space and storage area.	WDFW (J.2)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$6,000	Not adopted.
33. Fund 0.25 full-time equivalent Fish And Wildlife Biologist to review various project proposals resulting from the fulfillment of new license obligations.	WDFW (K.1)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	\$15,000	Not adopted.
34. Adopt all environmental measures proposed by Chelan PUD in the PDEA for the conservation and development of fish and wildlife resources.	Interior	No, not a specific measure to protect, mitigate, or enhance fish and wildlife resources.	Included in Chelan PUD's proposal.	Not adopted.
35. Construct, operate, maintain, and conduct the effectiveness monitoring as set forth in the Rocky Reach anadromous fish HCP.	Interior	Yes	Included in Chelan PUD's proposal (not separately listed).	Adopted.
36. Implement all practicable measures to meet water quality standards.	Interior (4a)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife habitat	Unknown	Not adopted.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
37. Implement a water quality management plan.	Interior (4b)	Yes	Unknown	Adopted.
38. Develop and implement a bull trout management plan.	Interior (5)	Yes	\$13,480, included in Chelan PUD's proposal.	Adopted.
39. Complete and implement a Pacific lamprey management plan.	Interior (6)	Yes	\$13,220, included in Chelan PUD's proposal.	Adopted.
40. Complete and implement a Ute ladies'-tresses management plan.	Interior (7)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife habitat.	\$18,000, included in Chelan PUD's proposal.	Adopted under Section 10(a).
41. Complete and implement a white sturgeon management plan.	Interior (8a)	Yes	\$205,830, included in Chelan PUD's proposal.	Adopted.
42. Develop and implement a white sturgeon augmentation and supplementation hatchery program.	Interior (8b)	Yes	Unknown	Adopted except for hatchery construction schedule.
43. Complete, fund, and implement the Comprehensive WMP.	Interior (9)	Yes	\$183,060	Not adopted; however, noxious weed management plan, wildlife surveys, and increased opportunities for public to interact with nature adopted separately.

Recommendation	Agency	Within the Scope of 10(j)?	Annualized Cost	Staff Recommendation^a
44. Create a forum of state and federal resource agencies and tribes to coordinate implementation of HCP and license measures.	Interior (10)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife habitat	\$5,000	Not adopted.
45. Retain ESA Section 7 consultation reopener.	Interior (11)	No, not a specific measure to protect, mitigate, or enhance fish and wildlife habitat	Unknown	Not adopted.

^a Many of the measures recommended under Section 10(j) of the FPA include specific dollar limitations. While we are recommending adopting several of these measures, the Commission has stated previously that it considers it the licensee's obligation to complete the measures required by a license and that dollar figures are not absolute limitations (that is, the Commission reserves the authority to require licensees to fulfill the requirements of the license notwithstanding any limitations on expenditures either proposed by the applicant or recommended by others).

^b See table 19, items 13 through 37.

^c See table 19, items 99 through 111.

Many of the measures recommended under Section 10(j) of the FPA include specific dollar limitations (e.g., Conduct resident fish monitoring at a cost not to exceed \$300,000 for the term of the license and not to exceed \$60,000 within a ten-year period). While we are recommending adopting several of these measures, the Commission has stated previously that it considers it the licensee's obligation to complete the measures required by a license and that dollar figures are not absolute limitations (that is, the Commission reserves the authority to require licensees to fulfill the requirements of the license notwithstanding any limitations on expenditures either proposed by the applicant or recommended by others).

WDFW and Interior recommend that Chelan PUD develop and implement a White Sturgeon Management Plan, recommendations that we adopt in all but one respect. Both WDFW and Interior recommend that Chelan PUD construct and operate a new white

sturgeon hatchery. In its 10(j) recommendation D.1, WDFW recommends that the hatchery be built in year 3 of a new license; in its 10(j) recommendation 8b, Interior recommends construction beginning in year 2. However, we recognize that specific effects from the project on white sturgeon spawning and/or rearing in the project area are currently unknown. Chelan PUD's proposal includes measures to remedy that lack of knowledge through measures such as a supplementation program, a monitoring program, long-term indexing, investigation of emigration rates of the supplemented population, supplementation program review, determination of carrying capacity of available habitat, and evaluation of spawning potential. Chelan PUD's proposal includes consideration of a new hatchery as one of several potential elements of a supplementation program, but does not specify a schedule for hatchery construction. Since the results of the initial investigations into the success of the supplementation program and other study results would not be known for several years, we do not recommend constructing the hatchery at the times specified by the Interior and WDFW. Rather, we recommend that as part of the development of the White Sturgeon Management Plan, Chelan PUD, in consultation with the agencies and tribes, should establish biological criteria that would trigger construction of a hatchery facility. Achievement of these criteria would be assessed through the proposed monitoring and evaluation of the initial supplementation efforts.

Interior 10(j) recommendation 10 specifies that Chelan PUD complete, fund, and implement the comprehensive wildlife plan. The management plan would identify goals, objectives, and procedures for the management of riparian and wetland habitats, native vegetation, noxious weeds, bald eagle habitat (perching and nesting structures), recreation, and wildlife monitoring on project lands, other lands adjacent to the reservoir, and on lands that may be purchased to meet mitigation objectives. We are recommending the development and implementation of wildlife management plan that includes the above elements to the extent that such a plan applies to lands within the project boundary or affected by the project reservoir fluctuations (e.g. acquisition of Ute ladies'-tresses conservation easements on Sun Cove property protection). However, we are not recommending that the management plan include lands within the Chelan WMA—lands consisting of state and federal lands located outside the project boundary and managed by WDFW, the Forest Service, BLM, and WDNR. The measures included in the comprehensive wildlife plan are designed to provide habitat enhancements to further improve upon existing habitats in the Chelan WMA, and the actions included in the plan would help recover and restore shrub-steppe habitats and mule deer populations. Our discussion in section 5.1.9, *Rocky Reach Wildlife Habitat Plan*, points out, however, that we cannot require acquisition of the lands, the project is not affecting these lands, and other wildlife measures proposed by Chelan PUD and recommended by staff would provide adequate benefits to wildlife. Therefore we are not recommending that Chelan PUD provide additional support for managing the state and federal lands outside the current project boundary, as stipulated by Interior. We are, however, recommending measures that are comparable to most of Interior's recommendations, including a noxious weed management plan, wildlife surveys, and providing more opportunities for the public to interact with nature.

5.3 CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving waterways affected by the project. Under Section 10(a)(2), federal, state and local agencies filed comprehensive plans that address various resources in Washington. Thirty-nine of those plans address resources applicable to the project (table 21).

Table 21. FERC comprehensive plans considered for the Rocky Reach Hydroelectric Project.

Comprehensive Plan	Contact Agency
Spokane Resource Area Management Plan and Final Environmental Impact Statement. 1985.	U.S. Department of Interior Bureau of Land Management Spokane, WA
Okanogan National Forest land and resource management plan. 1989.	U.S. Department of Agriculture Forest Service Okanogan, WA
The Nationwide Rivers Inventory. January 1982.	U.S. Department of the Interior National Park Service Washington, DC
Wenatchee National Forest Land and Resource Management Plan. 1990.	U.S. Department of Agriculture Forest Service Wenatchee, WA
An assessment of outdoor recreation in Washington State: A State Comprehensive Outdoor Recreation Planning Document 2002–2007. October 2002.	Interagency Committee for Outdoor Recreation Olympia, WA
Voices of Washington: Public Opinion on Outdoor Recreation and Habitat Issues, 1995.	Interagency Committee for Outdoor Recreation Olympia, WA
Washington Outdoors: Assessment and Policy Plan, 1990-1995. April 1990.	Interagency Committee for Outdoor Recreation Tumwater, WA
State of Washington, Outdoor Recreation and Habitat: Assessment and Policy Plan, 1995–2001. November 1995.	Interagency Committee for Outdoor Recreation Olympia, WA

Comprehensive Plan	Contact Agency
Washington State Trails Plan: Policy and Action Document. June 1991.	Interagency Committee for Outdoor Recreation Tumwater, WA
Final Environmental Impact Statement and Fishery Management Plan for Commercial and Recreation Salmon Fisheries off the Coasts of Washington, Oregon and California Commencing in 1978. March 1978.	U.S. Department of Commerce National Oceanic & Atmospheric Administration National Marine Fisheries Service Seattle, WA
Columbia River Basin Fish & Wildlife Program. October 1984.	Northwest Power Planning Council Portland, OR
Northwest Conservation & Electric Power Plan. 1986.	Northwest Power Planning Council Portland, OR
Columbia River Basin Fish & Wildlife Program. 1987.	Northwest Power Planning Council Portland, OR
Columbia River Basin Fish & Wildlife Program. December 1994.	Northwest Power Planning Council Portland, OR
Protected Areas Amendments and Response to Comments. 1988.	Northwest Power Planning Council Portland, OR
Statute Establishing the State Scenic River System, Chapter 79.72 Revised Code of Washington. 1977.	Washington State Department of Fish & Wildlife Olympia, WA
Eighth amendment to the fishery management plan for commercial and recreational salmon fisheries off the coasts of Washington, Oregon, and California commencing in 1978. January 1978.	Pacific Fishery Management Council Portland, OR
Settlement Agreement Pursuant to the September 1, 1983, Order of the U.S. District Court for the District of Oregon in Case No. 68-513. Columbia River fish management plan. November 1987.	State of Washington. State of Oregon. State of Idaho. Confederated Tribes of the Warm Springs Reservation of Oregon. Confederated Tribes of the Umatilla Indian Reservation. Nez Perce Tribe. Confederated Tribes and Bands of the Yakama Indian Nation. Portland, OR

Comprehensive Plan	Contact Agency
A Resource Protection Planning Process Identification of Prehistoric Archaeological Resources in the Lower Columbia Study Unit. 1987.	Washington State Dept. of Community Development, Office of Archaeology & Historic Preservation Olympia, WA
Resource Protection Planning Process—Paleoindian Study Unit. 1987.	Washington State Dept. of Community Development, Office of Archaeology & Historic Preservation Olympia, WA
Resource Protection Planning Process Mid-Columbia Study Unit. 1987.	Washington State Dept. of Community Development, Office of Archaeology & Historic Preservation Olympia, WA
A Resource Protection Planning Process Identification Component for the Eastern Washington Protohistoric Study Unit. 1987.	Washington State Dept. of Community Development, Office of Archaeology & Historic Preservation Olympia, WA
Water Resources Management Program--Methow River Basin. November 1977.	Washington State Department of Ecology Yakima, WA
Water Resources Management Program--Okanogan River Basin	Washington State Department of Ecology Yakima, WA
Wenatchee River Basin Instream Resources Protection Program. December 1982.	Washington State Department of Ecology Yakima, WA
State Wetlands Integration Strategy. December 1994.	Washington State Department of Ecology Yakima, WA
Application of Shoreline Management to Hydroelectric Developments. September 1986.	Washington State Department of Ecology Yakima, WA
Instream Resource Protection Program for the Main Stem Columbia River in Washington State. 1982.	Washington State Department of Ecology Yakima, WA
Hydroelectric Project Assessment Guidelines. 1987.	Washington State Department of Fisheries Olympia, WA
1987 Strategies for Washington's Wildlife. December 1986.	Washington State Department of Game Olympia, WA

Comprehensive Plan	Contact Agency
State of Washington Natural Heritage Plan. 1987.	Washington State Department of Natural Resources Olympia, WA
Final Habitat Conservation Plan. September 1997	Washington State Department of Natural Resources Olympia, WA
Washington State Hydropower Development/Resource Protection Plan. December 1992.	Washington State Energy Office Olympia, WA
Washington State Scenic River Assessment. September 1988.	Washington State Parks and Recreation Commission Olympia, WA
Scenic Rivers Program--Report. January 1988.	Washington State Parks and Recreation Commission Olympia, WA
Higgins Eye mussel recovery plan. Prepared by the Higgins Eye Mussel Recovery Team, May 1988.	U.S. Fish & Wildlife Service Twin Cities, MN
North American Waterfowl Management Plan. May 1986.	U.S. Fish & Wildlife Service. Canadian Wildlife Service. U.S. Department of the Interior. Environment Canada.
Fisheries USA: The Recreational Fisheries Policy of the US Fish and Wildlife Service. Undated.	U.S. Fish & Wildlife Service Washington, DC
Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest-Related Species Within the Range of the Northern Spotted Owl. April 1994.	Bureau of Land Management Forest Service Washington, DC

5.4 RELATIONSHIP OF LICENSE PROCESS TO LAWS AND POLICIES

5.4.1 Water Quality Certification

Section 401 of the CWA (33 U.S.C. § 1341) requires a license applicant to obtain from the state a certification that project discharges will comply with applicable effluent limitations, or waiver of certification. Without a 401 certificate, the project cannot be

licensed. On June 29, 2005, concurrently with the filing of its license application with the Commission, Chelan PUD requested a Section 401 water quality certificate from the WDOE. On June 13, 2005, Chelan PUD withdrew its June 29, 2004 request and reapplied for a Section 401 water quality certification with the understanding that WDOE and Chelan PUD would attempt to certify the project within 60 to 90 days. WDOE's decision on water quality certification is pending.

5.4.2 Coastal Zone Consistency Certification

According to an electronic communication on July 2, 2003, between WDOE and Chelan PUD, WDOE does not intend to require a Coastal Zone Management Consistency Statement for the project because the project is not located in Washington's coastal zone (Chelan PUD, 2003c, as cited in Chelan PUD, 2004a).

5.4.3 Section 18 Fishway Prescriptions

Section 18 of the FPA, 16 U.S.C. §811, states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of the Department of Commerce and Interior may prescribe. By letter dated March 8, 2005, NOAA Fisheries provided a preliminary fishway prescription, indicating that Chelan PUD must carry out its obligations under the Rocky Reach HCP. Additionally, NOAA Fisheries reserved its right to modify its preliminary fishway prescription. In its letter dated March 14, 2005, Interior reserved its authority (as delegated to the FWS) to prescribe the construction, operation, maintenance, and effectiveness monitoring of the Rocky Reach HCP. In its letter dated June 1, 2005, Interior provided the FWS' preliminary fishway prescriptions, which include prescriptions for upstream and downstream fishways for salmon and steelhead (Plan Species), upstream and downstream passage for bull trout, and upstream passage for Pacific lamprey. Interior also reserved its right to modify its preliminary fishway prescriptions, retained its right to review and approve all final fishway plans and specifications prior to implementation, and indicated that Chelan PUD must provide effective upstream and downstream fish passage over the full range of river flows for which the project maintains control and must manage the project's upstream and downstream fish passage facilities in accordance with Chelan PUD's Fish Passage Plan.

5.4.4 Endangered Species Act

Section 7 of the ESA requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered and threatened species or cause the destruction or adverse modification of the critical habitats of such species. Three federally listed fish species (Upper Columbia River spring Chinook salmon, Upper Columbia River steelhead, and bull trout), six federally listed wildlife species (gray wolf, Canada lynx, northern spotted owl, grizzly bear, pygmy rabbit, and bald eagle), and three federally listed plants (Ute ladies'-tresses, showy stickseed, and Wenatchee Mountains

checker-mallow) could occur in the project area. Our assessment of effects on listed species is discussed in section 3.6, *Threatened and Endangered Species and Essential Fish Habitat*, and our final recommendations are presented in section 5.1, *Comprehensive Development and Recommended Alternative*.

We conclude that relicensing the project with our recommended measures would not affect the gray wolf, Canada lynx, northern spotted owl, grizzly bear, pygmy rabbit, showy stickseed, or Wenatchee Mountains checker-mallow and would not be likely to adversely affect bald eagles or Ute ladies'-tresses. This DEIS serves as our biological assessment, and we will be seeking concurrence with our determinations from the FWS.

NOAA Fisheries concluded in its HCP FEIS (NMFS, 2002) that implementation of the HCP measures would result in incidental take of all Permit Species (including Upper Columbia River spring Chinook salmon and Upper Columbia River steelhead) through direct, indirect, and delayed mortality caused by the project dam. NOAA Fisheries issued a Section 10(a)(1)(B) permit for the HCP, finding that the HCP measures would, to the maximum extent practicable, monitor, minimize, and mitigate the effects on Plan Species resulting from the otherwise lawful operation of the project. Chelan PUD's proposal to the Commission incorporates all the measures of the HCP, and our conclusions are the same.

FWS issued a biological opinion on May 12, 2004, stating that "implementing the proposed action (incorporating the Rocky Reach HCP into the existing FERC license for Rocky Reach) is not likely to jeopardize the continued existence of the Columbia River distinct population segment of bull trout, and is not likely to destroy or adversely modify proposed critical habitat for bull trout" (letter from J. Gonzales, FWS, Wenatchee, WA, to M. Salas, Secretary, Commission, Washington, DC, dated May 12, 2004). Chelan PUD's proposal before the Commission incorporates all the measures listed in the FWS biological opinion, including implementation of the Bull Trout Management Plan, and our conclusions are the same.

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