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# **ROCKY REACH LICENSE ARTICLES**

<p><b>Attachment A to the Rocky Reach Settlement Agreement</b></p>
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**ROCKY REACH HYDROELECTRIC PROJECT  
FERC Project No. 2145**

**February 3, 2006**



**Public Utility District No. 1 of Chelan County  
Wenatchee, Washington**

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## **Attachment A**

# **Rocky Reach Hydroelectric Project License Articles**

### **Article 1. Shoreline Erosion Management Plan**

Chelan PUD shall implement the Shoreline Erosion Management Plan, as described in Chapter 1 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

(a) **Erosion control demonstration projects.** Chelan PUD shall perform erosion control work at four demonstration sites selected by Chelan PUD to educate the public about appropriate erosion control techniques, as described in Section 4.1 of Chapter 1 of the Comprehensive Plan.

Within five years after the effective date of the New License, Chelan PUD shall select an initial demonstration site and perform erosion control work, as described in Section 4.1 of Chapter 1 of the Comprehensive Plan. Chelan PUD shall select a second, third, and fourth site, and shall perform erosion control work on such demonstration sites within 10, 15, and 20 years, respectively, after the effective date of the New License.

(b) **Information distribution.** During the first 20 years of the New License, Chelan PUD shall make available to the public current information on erosion control techniques, updating such information no less frequently than every five years, as described in Section 4.2 of Chapter 1 of the Comprehensive Plan.

(c) **Monitoring.** (1) Chelan PUD shall conduct an inventory of shoreline erosion in years 20 and 40 of the New License to determine changes in erosion, and to monitor the effectiveness of repairs, as described in Section 4.3.1 of Chapter 1 of the Comprehensive Plan.

(2) Chelan PUD shall select four to six representative erosion sites to monitor every five years, as described in Section 4.3.2 of Chapter 1 of the Comprehensive Plan.

(3) Chelan PUD shall conduct an inventory of shoreline erosion after unusually high flows or other events which could lead to unusual shoreline erosion, as described in Section 4.3.3 of Chapter 1 of the Comprehensive Plan.

### **Article 2. Water Quality Management Plan**

Chelan PUD shall implement a Water Quality Management Plan to address Project effects on water quality, as described in Chapter 2 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

(a) **Total dissolved gas (TDG) management.** Chelan PUD shall implement the following measures to address ongoing Project-related impacts to aquatic life, if any, and water quality impacts resulting from TDG produced during spill at the Project. Chelan PUD shall submit to the Washington State Department of Ecology (Ecology) for review and approval, by April 1 of the year of implementation, a gas abatement plan (GAP) describing the anticipated use of these gas abatement measures, including new or improved information and technologies. The GAP shall be accompanied by an up-to-date operations plan, a fisheries management plan, physical monitoring plan, and biological monitoring plan.

(1) **TDG monitoring.** Chelan PUD shall maintain two fixed monitoring stations at Rocky Reach Dam to monitor TDG levels annually from April through August, one in the forebay and one in the tailrace, for the term of the New License and any subsequent annual licenses or until such monitoring is no longer required by Ecology, whichever occurs sooner. The monitoring point for TDG in the tailrace shall be moved to a location at or near the Juvenile Bypass System outfall as soon as practicable, but no later than year five of the New License. If it is not feasible to conduct TDG monitoring at this site, an alternate location may be developed provided that if such alternate location is not representative of levels of TDG from spillway flows in the tailrace, measurements at the alternate location shall be indexed to the actual TDG levels in the tailrace below the spillway.

(2) **Measures to meet TDG numeric criteria.** Chelan PUD shall implement the following measures, as needed, in an effort to continue meeting the numeric criteria for TDG:

(A) **Fish passage spill management.** Manage voluntary spill levels provided for fish passage in real time in an effort to continue meeting TDG numeric criteria, using the Operational Plan for TDG, while meeting the Rocky Reach Anadromous Fish Agreement and Habitat Conservation Plan (HCP) survival objectives;

(B) **Minimize voluntary fish passage spill.** Minimize voluntary spill while meeting the HCP survival objectives;

(C) **Minimize spill due to maintenance.** Minimize spill, to the extent practicable, by scheduling maintenance throughout the year to maintain adequate hydraulic capacity to pass expected inflows through the powerhouse;

(D) **Avoid spill past unloaded units.** Continue to participate in the 1997 Agreement for the Hourly Coordination of Projects on the mid-Columbia River (Hourly Coordination Agreement), or any successor agreement to which Chelan PUD is a party, and manage its operations in an effort to minimize spill past unloaded turbines;

(E) **Additional operational TDG abatement options.** Implement reasonable and feasible alternative powerhouse and spillway operational measures, as needed to meet TDG numeric criteria. These measures include maximizing powerhouse discharge up to 212 kcfs, and implementing alternative spillway operations with additional gates, using any of gates 2 through 12, to determine, in consultation with the Rocky Reach Fish

Forum (RRFF) and HCP Coordinating Committee, whether TDG levels can be reduced without adverse effects on fish passage.

(3) **Monitoring of aquatic life for gas bubble trauma (GBT).** Chelan PUD shall prepare and implement a study of GBT. Such study may be included as part of the biological study for the GAP. The proposed study plan (including scope) and study results should be coordinated with the RRFF and the HCP Coordinating Committee, and subject to Ecology approval. The final study plan and final study report will be peer-reviewed by recognized experts.

(4) **Determination of TDG compliance.** In year five of the New License, Chelan PUD shall prepare a report summarizing the results of all TDG studies performed to date, and determine whether compliance with the numeric criteria has been attained. If TDG compliance has been achieved, Chelan PUD and Ecology will determine which measures will be continued for the term of the New License to maintain compliance. If compliance with the TDG numeric criteria has not been attained, the report shall include an evaluation of what methods (operational and structural) may be reasonable and feasible to implement to further reduce TDG production at the Project. Probable and possible impacts to fish species from such TDG abatement methods shall be included in the report. Chelan PUD shall also prepare a report summarizing GBT monitoring and other relevant information regarding the effects of TDG produced by the Project on aquatic life. Chelan PUD shall submit these reports to Ecology, the RRFF, and the HCP Coordinating Committee.

(5) **Actions if TDG numeric criteria not achieved.** If compliance with numeric TDG criteria has not been achieved within five years of the effective date of the New License, and if determined necessary by Ecology based on an analysis of the water quality standard for TDG from the perspective of attainability and biological necessity, Chelan PUD shall continue efforts to comply with the numeric criteria for an additional period of time specified by Ecology, as described in subsections (A) and (B), below:

(A) **Aquatic life adversely affected.** If Chelan PUD, in consultation with the RRFF and the HCP Coordinating Committee, concludes that aquatic life has been adversely affected by TDG resulting from ongoing Project operations, Chelan PUD will consult with the RRFF in evaluating potential operational and structural methods to reduce TDG production. If the RRFF and Ecology determine that additional reasonable and feasible methods exist to further reduce TDG without significant adverse impact to fish species, Chelan PUD shall begin, upon receiving any necessary approvals from the Federal Energy Regulatory Commission (FERC), implementation of such additional measures, which may include structural modifications. If no reasonable and feasible TDG abatement measures exist, Chelan PUD will petition Ecology to modify the standards. Ecology will provide a schedule for the evaluation and completion of action on such rulemaking petition. Along with such other interim dates as Ecology deems appropriate, such schedule shall provide for the completion of action on the rulemaking, and submission of it to EPA for approval. While such petition is pending before Ecology, no non-compliance orders or penalties for TDG violations shall be issued against Chelan PUD, as long as Chelan PUD continues to operate in accordance with the GAP and the Section 401 certification for the Project.

**(B) Aquatic Life Not Adversely Affected.** If Chelan PUD, in consultation with the RRFF and/or the HCP Coordinating Committee, determines that no significant adverse affects on aquatic life have resulted from TDG produced by the Project, and Chelan PUD, after conducting an evaluation, and consulting with the RRFF, does not identify any additional reasonable and feasible measures to reduce TDG, Chelan PUD may petition Ecology to initiate a process to modify the applicable water quality standards to eliminate any non-compliance with such standards. Ecology will provide a schedule for the evaluation and completion of action on such rulemaking petition. Along with such other interim dates as Ecology deems appropriate, such schedule shall provide for the completion of action on the rulemaking, and submission of it to EPA for approval. While such petition is pending before Ecology, no non-compliance orders or penalties for TDG violations shall be issued against Chelan PUD, as long as Chelan PUD continues to operate in accordance with the GAP and the Section 401 certification for the Project.

**(b) Water temperature measures.** Chelan PUD shall implement the following measures to address the Project's responsibilities, if any, regarding increased water temperature.

**(1) Water Temperature Monitoring.** Chelan PUD shall monitor hourly water temperatures in the forebay and tailrace annually from April through October for the term of the New License, and any subsequent annual licenses or until such monitoring is no longer required by Ecology, whichever occurs sooner. Chelan PUD shall monitor water temperatures in the Juvenile Bypass System and upstream fishway for one year, unless Ecology determines additional monitoring is required.

**(2) Temperature Modeling to Confirm Compliance.** Chelan PUD shall collect or compile meteorological and water temperature data for at least the first five years of the New License; such data shall be of sufficient quality to meet technical peer review group standards for running the CE-QUAL-W2 model. Chelan PUD shall run the CE-QUAL-W2 model to evaluate the Project compliance with numeric temperature criteria with the data collected in the first five years of the New License. Chelan PUD shall evaluate, as feasible, the causes of any modeled exceedances. Chelan PUD shall provide a report to Ecology in year six of the New License summarizing the results of the 10 years of monitoring and modeling (first five years of the new License plus five previous years). The input data, modeling, and results shall be subject to a peer review and review by Ecology. If Ecology concludes that the Project is in compliance with numeric temperature criteria, Chelan PUD may reduce or eliminate the aforementioned monitoring and or analysis requirements with the approval of Ecology.

If the Project is out of compliance with numeric temperature criteria, Chelan PUD shall submit to Ecology and FERC documentation to identify how it intends to come into compliance. However, in lieu of submitting such documentation, Chelan PUD, upon a showing to Ecology that no reasonable and feasible improvements exist, may petition Ecology to initiate a process to modify the applicable water quality standards to eliminate any non-compliance with such standards. In evaluating whether all reasonable and feasible measures have been executed, Ecology will consider, among other relevant factors, information regarding biological impacts of temperature non-compliance caused by the Project and the extent to which the Project has achieved the Biological Objectives. Ecology will provide a schedule for the evaluation and completion of

action on such rulemaking petition. Along with such other interim dates as Ecology deems appropriate, such schedule shall provide for the completion of action on the rulemaking, and submission of it to EPA for approval. While such petition is pending before Ecology, no non-compliance orders or penalties for water temperature violations shall be issued against Chelan PUD, as long as Chelan PUD continues to operate in accordance with the Section 401 certification for the Project.

**(3) Participation in Development and Implementation of EPA Water Temperature TMDL.** Chelan PUD shall participate in EPA Region 10's development of a TMDL for the Columbia River below the Canadian border by supplying water temperature monitoring and modeling information.

**(4) Participation in Tributary Water Temperature Improvement Planning.** Chelan PUD shall participate in tributary restoration, water quality planning and tributary TMDL implementation planning for the Wenatchee and Entiat rivers. Chelan PUD shall, through its representative on the HCP Tributary Committee, assure that opportunities are considered to improve water temperature in these tributaries as an adjunct to HCP tributary habitat projects.

**(c) Project Operations Consistent with Existing Agreements.** Chelan PUD shall continue to operate the Project under the Hourly Coordination Agreement and the Hanford Reach Fall Chinook Protection Agreement, or successor agreements to which Chelan PUD is a party.

**(d) Water Quality in Macrophyte Beds.** Chelan PUD shall develop a one-year sampling program, in consultation with Ecology, to determine if the water quality criteria for dissolved oxygen, temperature, and pH are met in shallow water habitats in the Reservoir. If measurements reveal exceedances or levels below the criteria, further sampling will be conducted, in coordination with the RRF and Ecology, to determine the impact on aquatic habitat. If such impacts are found to be significant and caused by the Project, Chelan PUD shall consult with the RRF and Ecology to determine what actions may be reasonable and feasible to protect aquatic life.

**(e) Aquatic Invasive Species.** Within one year of the effective date of the new license, in consultation with the RRF, Chelan PUD shall develop and begin implementation of an AIS Monitoring and Control Plan (Monitoring Plan) for the Project to monitor for the presence of new invasive species at or near Project facilities, as described in Section 4.5 of Chapter 2 of the Comprehensive Plan.

**(f) Spill Prevention Control and Countermeasure (SPCC) Plan and Columbia-Snake River Spill Response Initiative (CSR-SRI).** Chelan PUD shall operate the Project in accordance with the SPCC Plan, which shall be updated and revised periodically, as required in 40 CFR 112.5(b). Chelan PUD shall continue to implement the applicable portions of the CSR-SRI for which it is responsible.

### Article 3. White Sturgeon Management Plan

Chelan PUD shall implement the White Sturgeon Management Plan to achieve the goal and objectives contained in Chapter 3 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

(a) **Brood stock planning and collection.** Within one year of the effective date of the New License, Chelan PUD shall, in consultation with the RRFF, prepare a brood stock collection plan that considers such factors as genetics and questions of imprinting. Chelan PUD shall begin collection of white sturgeon brood stock after the RRFF has selected a source of such fish, as described in Section 4.1.1 of Chapter 3 of the Comprehensive Plan.

(b) **Juvenile white sturgeon stocking.** Chelan PUD shall initiate a white sturgeon stocking program as described in Section 4.1.2 of Chapter 3 of the Comprehensive Plan.

(1) **Initial stocking of yearling white sturgeon.** Within three years of the effective date of the New License, Chelan PUD shall release up to 6,500 yearling white sturgeon into the Reservoir annually for three years.

(2) **Adjustments to stocking levels.** Following the third year of supplementation, Chelan PUD shall, in consultation with the RRFF, stock juvenile white sturgeon annually during the term of the New License, at an age class and stocking level determined by the results of the monitoring program, as described in Section 4.2.1 of Chapter 3 of the Comprehensive Plan. On a schedule developed in consultation with the RRFF, Chelan PUD shall implant active tags in a percentage of such fish, in anticipation of future monitoring efforts described in Section 4.2.2 of Chapter 3 of the Comprehensive Plan.

(3) **Long-term production.** By year seven of the New License, Chelan PUD shall, in consultation with the RRFF, determine a long-term source of fish to be used for continuing the supplementation program for the term of the New License, as described in Section 4.1.3 of the Comprehensive Plan.

(c) **Determine the effectiveness of the supplementation program.** Chelan PUD shall conduct a monitoring program for the purpose of assessing the effectiveness of the supplementation program, as described in Section 4.2 of Chapter 3 of the Comprehensive Plan.

(1) **Index monitoring program.** In years four, five and six of the New License, Chelan PUD shall conduct an initial index monitoring program for juvenile and adult sturgeon in the Reservoir to determine age-class structure, survival rates, abundance, density, condition factor, growth rates, and to identify distribution and habitat selection of juvenile sturgeon, as described in Section 4.2.1 of Chapter 3 of the Comprehensive Plan. Beginning in year eight of the New License, Chelan PUD shall conduct index monitoring for a duration of one year, every third year, over the term of the New License, or on a schedule determined by the RRFF.

**(2) Investigation of emigration rate and habitat use of supplemented population.**

In years five, six and seven of the New License, Chelan PUD shall conduct tracking surveys of juvenile white sturgeon that were released with active tags, as described in Section 4.2.2 of Chapter 3 of the Comprehensive Plan, to determine emigration rates and habitat use. Chelan PUD shall conduct additional such surveys in years 14 and 20 of the New License, or on a schedule determined by the RRFF.

**(3) Supplementation program review.** As described in Section 4.2.3 of Chapter 3 of the Comprehensive Plan, Chelan PUD shall compile information on other white sturgeon supplementation programs in the Columbia River Basin in order to assess whether the supplementation program described in sections (a) and (b) of this Article is consistent with similar regional programs; whether improvements can be made; and if economies can be achieved in meeting the objectives of the monitoring program through utilization of research developed at other hydroelectric projects. Such information shall be included, and updated as new information becomes available, in the annual reports to the RRFF described in section (e) of this Article.

**(d) Determine natural reproduction potential and adjust supplementation program accordingly.** Chelan PUD shall track reproductively viable adult sturgeon that were captured and implanted with active tags during the index monitoring program for the purpose of identifying potential spawning locations. As described in Section 4.4 of Chapter 3 of the Comprehensive Plan, five additional annual surveys of natural reproduction shall occur between years 8 through 18 of the New License, as recommended by the RRFF, based on flow conditions or other data.

**(e) Reporting.** Chelan PUD shall provide a report to the RRFF and FERC each year that summarizes its activities undertaken pursuant to this Article, as described in Section 4.5 of Chapter 3 of the Comprehensive Plan.

## **Article 4. Bull Trout Management Plan**

Chelan PUD shall implement the Bull Trout Management Plan to identify, monitor, and address on-going Project effects on bull trout, as described in Chapter 4 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

**(a) Operate upstream fishway and downstream bypass.** (1) Chelan PUD shall continue to provide upstream passage for adult bull trout through the existing upstream fishway and downstream passage for adult and sub-adult bull trout through the existing downstream bypass. Chelan PUD shall continue to operate such upstream fishway and downstream bypass in accordance with the criteria for anadromous salmonids set forth in the HCP and the annual Rocky Reach Fish Passage Plan (FPP), as approved and/or amended by the Rocky Reach HCP Coordinating Committee.

(2) **Upstream fishway counts.** Chelan PUD shall continue to conduct video monitoring in the upstream fishway, except during the annual fishway maintenance period, to count bull trout passing through the fishway and provide information on the size, age, and condition of bull trout.

(b) **Adult bull trout upstream and downstream passage evaluation.**

(1) Beginning in year 10 of the New License and continuing every 10 years thereafter during the term of the New License, Chelan PUD shall conduct a one-year adult bull trout monitoring program for the purpose of determining whether Chelan PUD remains in compliance with the Project's allowable level of incidental take of bull trout due to upstream and downstream passage. If the Project's allowable level of incidental take for the Project is exceeded during one such monitoring year, Chelan PUD shall conduct monitoring in the succeeding year. If the Project's allowable level of incidental take for the Project is exceeded during the succeeding monitoring year, Chelan PUD shall develop and implement a plan, in consultation with the RRF and agreed to by the United States Fish and Wildlife Service (USFWS), to identify and address the factors contributing to exceedance of the allowable level of incidental take.

(2) **Report and correlation analysis.** Chelan PUD shall prepare a report on results gathered during each of the one-year periods described in section (b)(1) of this Article. Such annual report shall also examine whether a correlation exists between upstream and downstream passage times and Project operations.

(c) **Sub-adult bull trout monitoring methods.** Upon the recommendation of the RRF, Chelan PUD shall implement appropriate and reasonable methods for monitoring sub-adult bull trout at the Rocky Reach Dam.

(d) **Implement appropriate and reasonable measures.** Chelan PUD shall identify and implement appropriate and reasonable measures, in consultation with the RRF and agreed to by the USFWS, to modify the upstream fishway and downstream bypass or operations to reduce the identified impacts to bull trout passage, if any.

(e) **Participate in development and implementation of the USFWS Recovery Plan.**

(1) Chelan PUD shall continue to attend meetings of the Upper Columbia River Bull Trout Recovery Team, as scheduled by the USFWS, until completion of the Bull Trout Recovery Plan. Chelan PUD will participate, as appropriate, in implementation of such Bull Trout Recovery Plan once it is completed by the USFWS.

(2) **Tributary enhancement.** Chelan PUD shall consider the feasibility of collecting and hauling large woody material that is captured at Rocky Reach Dam for placement in tributaries for use as fish habitat in projects funded by the Tributary Conservation Plan contained in the HCP.

(3) **Funding collection of tissue samples for genetic analysis.** Beginning in year 10 of the New License, and continuing every 10 years thereafter for the term of the New License, Chelan PUD shall, if recommended by the RRF, collect up to 30 adult bull trout tissue samples and up to 40 sub-adult bull trout tissue samples over a period of one year, and fund their genetic analysis.

(4) **Information exchange and regional monitoring efforts.** During the term of the New License, Chelan PUD may continue to participate in information exchanges with other entities conducting bull trout research and regional efforts to explore methods to monitor upstream and downstream movement of sub-adult bull trout in the mainstem Columbia River. If monitoring methodologies become available, Chelan PUD shall work with the RRFF to identify and implement appropriate and reasonable measures for monitoring sub-adult bull trout at the Rocky Reach Dam.

## Article 5. Pacific Lamprey Management Plan

Chelan PUD shall implement the Pacific Lamprey Management Plan to measure and address any ongoing Project impacts on Pacific lamprey and to achieve No Net Impact (NNI), as described in Chapter 5 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

(a) **Adult upstream passage.** Chelan PUD shall measure and address ongoing Project impacts on upstream passage of adult Pacific lamprey, if any.

(1) **Fishway operations.** Chelan PUD shall continue to operate the upstream Project fishway in accordance with anadromous fish criteria described in the annual FPP, except as provided in section (a)(4) of this Article.

(2) **Adult upstream passage counts.** Chelan PUD shall maintain, using the most current technology, annual adult Pacific lamprey upstream passage counts in the Project fishway for the term of the New License and any subsequent annual licenses.

(3) **Upstream passage improvement literature review.** Within one year of the effective date of the New License, Chelan PUD shall, in consultation with the RRFF, complete a literature review of the effectiveness of upstream lamprey passage measures implemented at other hydroelectric projects in the Columbia and Snake rivers, and evaluate whether it would be appropriate and reasonable to implement similar measures at Rocky Reach Dam.

(4) **Modifications to improve upstream passage.** As soon as practicable, but no later than five years after the effective date of the New License, Chelan PUD shall, in consultation with the RRFF, design and implement appropriate and reasonable upstream passage improvement measures identified in section (a)(3) of this Article, if any.

(5) **Evaluation of upstream passage modifications.** Within one year following the implementation of any upstream passage improvement measure at Rocky Reach Dam required under section (a)(4) of this Article, Chelan PUD shall, in consultation with the RRFF, monitor the effectiveness of such measures for an appropriate period of time, using radio telemetry or other appropriate and reasonable methods. If, as determined by the RRFF, the results of the monitoring indicate that passage has not significantly improved as a result of such measure, Chelan PUD shall, in consultation with the RRFF, develop and implement a plan to identify additional appropriate and reasonable passage improvement measures, if any. Measures described in (a)(3), (a)(4) and (a)(5) will be repeated, as necessary, until adult Pacific lamprey

passage at the Project is similar to the best passage rates found at other hydroelectric projects on the mainstem Columbia and Snake rivers.

(6) **Adult downstream passage.** If Chelan PUD, in consultation with the RRFF, determines that additional significant ongoing Project effects on adult downstream passage have been identified through the investigations described in sections (a)(3), (a)(4) and (a)(5) of this Article, Chelan PUD shall, in consultation with the RRFF, develop a plan and implement appropriate and reasonable measures to address such effects.

(7) **Periodic monitoring.** Once adult passage at the Project is determined under section (a)(5) of this Article to be similar to the best passage rates found at other hydroelectric projects on the mainstem Columbia and Snake rivers, then every 10 years during the term of the New License, or on a schedule agreed to by the RRFF, Chelan PUD shall, in consultation with the RRFF, monitor adult lamprey passage through the Project fishway, for an appropriate period of time, using radio telemetry or other appropriate and reasonable methods. Chelan PUD, in consultation with the RRFF, will evaluate the results of such monitoring to identify and implement any appropriate and reasonable measures to contribute toward achieving NNI.

(b) **Juvenile downstream passage improvement measures.** Chelan PUD shall measure and address potential ongoing Project-related impacts on downstream passage of juvenile Pacific lamprey, if any.

(1) **Operate downstream passage facilities.** Chelan PUD shall operate the Project's downstream fish passage facilities in accordance with the operation criteria for anadromous salmonids and compatible bull trout migration guidelines set forth in the HCP and the annual FPP, as approved and/or amended by the Rocky Reach HCP Coordinating Committee.

(2) **Juvenile lamprey impingement monitoring and reporting.** Chelan PUD shall monitor and report annually to the RRFF any lamprey impingement on turbine intake screens, until such time as the RRFF recommends that monitoring is no longer necessary. If significant ongoing Project effects are identified through the investigations described in this section, Chelan PUD shall, in consultation with the RRFF, develop a plan and implement appropriate and reasonable measures to address such effects.

(3) **Measurement of impacts on juvenile downstream passage.** Between years two and five of the New License, Chelan PUD shall continue to measure the type and magnitude of on-going Project impacts on the downstream passage of juvenile lamprey, using appropriate and reasonable methodologies.

(c) **Measure and address ongoing Project impacts on juvenile lamprey rearing habitat.** Within three years of the effective date of the New License, Chelan PUD shall measure juvenile lamprey presence and relative abundance in habitat areas that may be impacted by ongoing Project operations. Chelan PUD shall, in consultation with the RRFF, develop a plan and implement appropriate and reasonable measures, if any, to address such impacts.

(d) **Identify and implement measures to address unavoidable impacts in order to achieve No Net Impact (NNI).** Within two years of the effective date of the New License, Chelan PUD shall collect and compile information regarding Pacific lamprey distribution, population status and trends, and juvenile downstream migration timing, to identify and implement appropriate and reasonable measures in order to achieve NNI. Chelan PUD shall also develop sampling and collection protocols and collect tissue samples and other relevant biological information from adult and juvenile lamprey populations that pass through the Project. Chelan PUD shall, in consultation with the RRFF, identify, consider, and implement appropriate and reasonable measures to address unavoidable losses at the Project in order to achieve NNI. In year five of the New License, and every five years thereafter, for the term of the New License and any subsequent annual licenses, Chelan PUD shall provide a report to the RRFF and FERC on the status of the Adaptive Management process regarding unavoidable impacts to Pacific lamprey.

## **Article 6. Resident Fish Management Plan**

Chelan PUD shall implement a Resident Fish Management Plan to address potential Project effects to resident fish, as described in Chapter 6 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

(a) **Fish rearing.** Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of each subsequent year of the New License and any subsequent annual licenses, Chelan PUD shall make available funding for a fish rearing program conducted by the Washington State Department of Fish and Wildlife (WDFW) to rear approximately 30,000 pounds of rainbow trout, or other fish at a comparable production cost, for annual planting in water bodies in Chelan and Douglas counties, as described in Section 4.1.1 of Chapter 6 of the Comprehensive Plan.

(b) **Resident fish enhancement measures.** (1) During years 1 through 10 of the New License, Chelan PUD shall, in consultation with the RRFF, be responsible for implementing resident fish enhancement measures described in Section 4 of Chapter 6 of the Comprehensive Plan.

(2) During years 11 through the term of the New License, and any subsequent annual licenses, Chelan PUD shall, in consultation with the RRFF, be responsible for implementing resident fish enhancement measures described in Section 4 of Chapter 6 of the Comprehensive Plan.

(c) **Recreational Fishing Evaluation.** Within one year of the effective date of the New License, Chelan PUD shall, in consultation with the RRFF, evaluate the creation of additional recreational fishing opportunities in the Reservoir that is compatible with existing fish resources.

(d) **Resident fish monitoring** (1) Within one year following the effective date of the New License, Chelan PUD shall, in consultation with the RRFF, initiate implementation of a one-year comprehensive evaluation of resident fish in the Rocky Reach Reservoir focusing on predatory fish species.

(2) If, based on the comprehensive evaluation results, Chelan PUD determines, in consultation with the RRFF, that the predatory fish population adversely affects the achievement of HCP Plan Species survival standards in the Reservoir, Chelan PUD shall, in consultation with the HCP Coordinating Committee, develop and implement predator control measures as necessary to achieve such standards. Following implementation of any such predator control measures in the Reservoir, Chelan PUD shall conduct: 1) an additional one-year follow-up comprehensive evaluation, using the same methodology as for the initial evaluation (unless modified by the RRFF), to determine the efficacy of predator control measures undertaken in the Reservoir; and 2) an additional one-year monitoring survey to assess any changes in abundance or species composition of the resident fish populations in the reservoir. The timing and methodologies for the monitoring survey shall be developed by Chelan PUD in consultation with the RRFF.

(3) If, based on the initial comprehensive evaluation results, Chelan PUD determines, in consultation with the RRFF, that a predator fish predation problem does not exist in the Reservoir, Chelan PUD shall conduct three, one-year monitoring surveys to monitor any changes in abundance or species composition in the resident fish populations in the Reservoir. The timing and methodologies for the monitoring surveys shall be developed by Chelan PUD in consultation with the RRFF.

## Article 7. Wildlife Management Plan

Chelan PUD shall implement its responsibilities under the Rocky Reach Wildlife Habitat Plan, as described in Chapter 7 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

(a) **Restore, maintain, or improve Chelan Wildlife Area lands.** Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of each subsequent year of the New License and any subsequent annual licenses, Chelan PUD shall make available funding to WDFW to restore, maintain, or improve WDFW lands within the Chelan Wildlife Area, as described in Section 4.1.2 of Chapter 7 of the Comprehensive Plan.

(b) **Habitat restoration on WDFW lands.** (1) Within 180 days of the effective date of the New License, Chelan PUD shall make available to the WDFW funding to restore 1,300 to 1,400 WDFW acres in the Chelan Wildlife Area that were previously under cultivation or in need of restoration, as described in Section 4.2.1 of Chapter 7 of the Comprehensive Plan.

(2) Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of years two through six of the New License, Chelan PUD shall make available funding to WDFW for the habitat restoration of WDFW's agricultural lands in the Chelan Wildlife Area.

(3) During years 10 through 50 of the term of the New License, Chelan PUD shall make available funding to WDFW to restore, maintain, or improve the Chelan Wildlife Area.

(c) **Habitat restoration on Bureau of Land Management (BLM) lands.** Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of each subsequent year of the

New License and any subsequent annual licenses, Chelan PUD shall make available funding to the Bureau of Land Management (BLM) to restore, maintain, or improve BLM lands within the Chelan Wildlife Area, as described in Section 4.2.2 of Chapter 7 of the Comprehensive Plan.

(d) **Habitat restoration on United States Department of Agriculture (USDA) Forest Service lands.** Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of each subsequent year of the New License and any subsequent annual licenses, Chelan PUD shall make available funding to the United States Department of Agriculture (USDA) Forest Service to restore, maintain, or improve USDA Forest Service lands within the Chelan Wildlife Area, as described in Section 4.2.3 of Chapter 7 of the Comprehensive Plan.

(e) **Sun Cove property conservation easement.** Within 180 days of the effective date of the New License, Chelan PUD shall enter into a contract with the Chelan-Douglas Land Trust, or another organization mutually agreed upon by Chelan PUD and WDFW, for the acquisition of a conservation easement in perpetuity, at no cost to the acquiring entity, on the Sun Cove property owned by Chelan PUD in Douglas County, Washington, for the purpose of protecting riparian habitat, as described in Section 4.2.4 of Chapter 7 of the Comprehensive Plan.

(f) **Integrated noxious weed control program.** Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of each subsequent year of the New License and any subsequent annual licenses, Chelan PUD shall implement an integrated noxious weed control program, as described in Section 4.2.5 of Chapter 7 of the Comprehensive Plan.

(g) **Wildlife surveys.** Chelan PUD, in coordination with the Rocky Reach Wildlife Forum (RRWF), shall conduct wildlife surveys for species selected by the RRWF, during each year of the New License, and any subsequent annual licenses. Chelan PUD shall conduct such surveys and provide results in an annual report to the RRWF on a schedule determined by the RRWF, as described in Section 4.2.6 of Chapter 7 of the Comprehensive Plan.

(h) **Noxious weed control for *Spiranthes* or other botanical species of concern.** Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of each subsequent year of the New License and any subsequent annual licenses, Chelan PUD shall implement a noxious weed control program focusing specifically in areas where Ute ladies'-tresses (*Spiranthes diluvialis*) occur on public lands adjacent to the Rocky Reach Reservoir, as described in Section 4.3.1 of Chapter 7 of the Comprehensive Plan.

(i) ***Spiranthes* monitoring program.** Within 180 days of the effective date of the New License, and by January 31<sup>st</sup> of each subsequent year of the New License and any subsequent annual licenses, Chelan PUD shall implement an annual monitoring program to evaluate the status of *Spiranthes* populations in the Project boundary, as described in Section 4.3.2 of Chapter 7 of the Comprehensive Plan.

(j) **Conservation easement.** Within two years of the effective date of the New License, Chelan PUD shall pursue, on a willing-seller basis, a conservation easement on a parcel of private land where *Spiranthes* occurs, as described in Section 4.3.3 of Chapter 7 of the Comprehensive Plan.

## Article 8. Historic Properties and Cultural Resources Management Plan

Chelan PUD shall implement a Historic Properties and Cultural Resources Management Plan (HPCRMP), as described in Chapter 8 of the Comprehensive Plan (a confidential document), which is incorporated herein by reference, and the Programmatic Agreement (PA) between the FERC and the Washington State Historic Preservation Officer (SHPO). Specifically:

(a) **Rocky Reach Cultural Forum.** Chelan PUD shall convene the Rocky Reach Cultural Forum (RRCF) within one year of the effective date of the New License and twice annually during the term of the New License and any subsequent annual licenses, or on a schedule agreed to by the RRCF.

(b) **Consultation and permitting.** During the term of the New License and any subsequent annual licenses, Chelan PUD shall adhere to the consultation and permitting guidelines provided in the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act (ARPA), 36 CFR Part 800, and other applicable cultural resources laws and regulations.

(1) **Tribal consultation.** Chelan PUD shall contact the Tribal Historic Preservation Officer (THPO) of the Confederated Tribes of the Colville Reservation and the cultural resources manager of the Yakama Nation during the third quarter of each year of the New License, and any subsequent annual licenses, to discuss the status of the HPCRMP, as described in Section 3.3 of Chapter 8 of the Comprehensive Plan. Chelan PUD shall consult with the Confederated Tribes of the Colville Reservation and the Yakama Nation regarding its undertakings that may affect cultural resources within the Area of Potential Effect (APE) of the Project.

(2) **Agency consultation.** Chelan PUD shall consult with the relevant federal and state agencies regarding its undertakings that may affect cultural resources within the APE of the Project, as described in Section 3.4 of Chapter 8 of the Comprehensive Plan.

(3) **Private property.** Chelan PUD shall obtain landowner permission prior to undertaking any activities on private lands.

(4) **Annual report.** Each year of the New License, and any subsequent annual licenses, coordinated with the annual FERC reporting schedule, Chelan PUD shall provide an *Annual Report on the Implementation of the Historic Properties and Cultural Resources Management Plan* to FERC and the RRCF, as described in Section 3.5 of Chapter 8 of the Comprehensive Plan.

(c) **Site surveys.** Chelan PUD shall survey the APE for cultural resources every 15 years of the New License, or when the RRCF determines that new surveys are needed after high-flow or during unusually low water events, in accordance with Section 5.1 of Chapter 8 of the

Comprehensive Plan. Chelan PUD shall ensure that field methods used in such inventories are comparable with those used in the baseline study, as described in Section 4.2 of Chapter 8 of the Comprehensive Plan.

(d) **Inadvertent Discovery.** In the event that archaeological deposits or human remains are inadvertently encountered during any Project-related activity during the term of the New License, and any subsequent annual licenses, Chelan PUD shall cease such activity and shall follow the protocol described in Section 4.4 of Chapter 8 of the Comprehensive Plan.

(e) **Evaluation.** Chelan PUD shall be responsible for the evaluation of sites within the APE during site surveys or inadvertent discoveries described in section (c) and (d) of this Article for possible inclusion in the National Register of Historic Places (NRHP), as provided in Section 4.5 of Chapter 8 of the Comprehensive Plan. After review of new site data with the RRCF, Chelan PUD shall follow the National Historic Preservation Act evaluation procedures, as appropriate.

(f) **Site treatment.** (1) During the term of the New License, and any subsequent annual licenses, Chelan PUD, in consultation with the RRCF, shall conduct site treatment measures for Historic Properties currently and subsequently identified within the APE, as described in Section 3.2 of Chapter 8 of the Comprehensive Plan.

(2) **Site monitoring.** During the term of the New License and any subsequent annual licenses, Chelan PUD, in consultation with the RRCF, shall monitor the Historic Properties identified in the APE and update site information using a rotation system that prioritizes sites based on current assessments of ongoing Project effects. Chelan PUD shall revisit sites every one, three, five or fifteen years, as described in Section 5.2 of Chapter 8 of the Comprehensive Plan.

(3) **Site monitoring report.** Chelan PUD shall document results of site monitoring under section (f)(2) in an annual site monitoring report to the RRCF.

(g) **Traditional Cultural Properties Management Plan.** Within one year of the effective date of the New License, Chelan PUD shall initiate development and implementation of a Traditional Cultural Property (TCP) management plan, as described in Section 5.3 of Chapter 8 of the Comprehensive Plan, that includes a confidential map identifying known TCPs, recorded archaeological sites, documented ethnographic sites, and a treatment plan for identified TCPs within the APE. Chelan PUD's treatment plans for identified TCPs within the APE shall be developed in consultation with the responsible agency and the Confederated Tribes of the Colville Reservation and the Yakama Nation.

(h) **Curation.** Chelan PUD shall adhere to all applicable federal and state curation standards and implement Section 5.4 of Chapter 8 of the Comprehensive Plan regarding any storage or curation of artifacts collected by Chelan PUD in the course of Project-related activities during the term of the New License and any subsequent annual licenses. The following subsections apply to artifacts and archival records for which Chelan PUD is responsible as of the effective date of the New License:

(1) Within one year of the effective date of the New License, Chelan PUD shall develop a collections assessment report that contains information about the location and volume of cultural resources for which Chelan PUD is responsible, and identifies potential repositories for storage of these items.

(2) Within three years of the effective date of the New License, Chelan PUD shall complete an initial collections inventory of known artifacts, reports, documentation, photographs, and maps relating to the APE.

(3) Within three years of the effective date of the New License, Chelan PUD shall ensure that all artifacts in its possession are curated according to applicable federal and state standards.

(i) **Information management.** Chelan PUD shall develop an integrated cultural resource information management system that includes cultural resource data for the Project, as described in Section 5.5 of Chapter 8 of the Comprehensive Plan.

(j) **Cultural Resources Coordinator.** Within 180 days of the effective date of the New License, Chelan PUD shall appoint a Cultural Resources Coordinator to oversee implementation of Chapter 8 of the Comprehensive Plan. The Cultural Resources Coordinator shall be the primary point of contact for all cultural resource tasks undertaken by Chelan PUD during the term of the New License and any subsequent annual licenses, as described in Section 5.7 of Chapter 8 of the Comprehensive Plan. The Cultural Resources Coordinator shall receive training to maintain current knowledge of cultural resource laws, regulations, and management practices every three years during the term of the New License and any subsequent annual licenses.

(k) **Public Education.** Within five years of the effective date of the New License, Chelan PUD shall develop and implement an interpretive plan and educational program during the term of the New License and any subsequent annual licenses, as described in Section 5.6 of Chapter 8 of the Comprehensive Plan.

## Article 9. Recreation Resources Management Plan

Chelan PUD shall implement its responsibilities under the Recreation Resources Management Plan, as described in Chapter 9 of the Comprehensive Plan, which is incorporated herein by reference. Specifically:

(a) **Ownership and operation of existing parks.** For the term of the New License and any subsequent annual licenses, Chelan PUD shall continue to ensure the operation of Rocky Reach Park and Visitor Center, Beebe Bridge Park, Lincoln Rock State Park, Daroga State Park, Entiat Park, Chelan Falls/Powerhouse Park. Chelan PUD shall continue to ensure the operation and maintenance of the portion of Orondo Park that it owns.

(b) **Renovation and enhancement of Lincoln Rock State Park and Daroga State Park.** Within one year of the effective date of the New License, Chelan PUD, in consultation with Washington State Parks, shall begin implementation of major renovations of, and minor

improvements to, existing facilities and enhancements at Lincoln Rock State Park and Daroga State Park.

(c) **Trail link from Lincoln Rock State Park to a fish bypass viewing station.** Within 180 days of the effective date of the New License or after notification from Washington State Parks that it has obtained all necessary permits, whichever comes later, Chelan PUD shall be responsible for the construction of a paved one mile trail, including interpretative signs, benches, and other trail amenities, on land owned by Chelan PUD from Lincoln Rock State Park to a fish bypass viewing station approximately 300 feet downstream of Rocky Reach Dam, as described in Section 4 of Chapter 9 of the Comprehensive Plan.

(d) **Irrigation system in Orondo Park.** Within 180 days of the effective date of the New License, Chelan PUD shall begin design and construction of an upgraded irrigation system in Orondo Park.

(e) **Revitalization of Entiat Park.** Within one year of the effective date of the New License, Chelan PUD shall begin implementation of the Entiat Park Revitalization Plan, in accordance with Section 4.5 of Chapter 9 of the Comprehensive Plan.

(f) **Update Recreation Use Needs Analysis/Forecast.** No later than year 23 of the New License, Chelan PUD shall, in consultation with the RRRF, update the needs analysis/forecast to assess recreational use and needs within the Project boundary.

(g) **Recreation Resources Monitoring and Evaluation Program.** Every six years throughout the life of the New License and any subsequent annual licenses, Chelan PUD, in consultation with the RRRF, shall review and evaluate information with respect to existing and potential recreational use within the Project boundary. A report shall be made to FERC consistent with FERC Form 80 requirements. Upon receipt of the New License, or in 2009, whichever comes second, Chelan PUD shall make available \$500,000 to address recreational needs within the Project boundary as approved by Chelan PUD Commissioners and FERC.

(h) **Completion of construction.** New construction projects described in sections (b), (c), (d) and (e) of this Article shall be completed by Chelan PUD within 10 years of the effective date of the New License, subject to necessary permitting.

## Article 10. Habitat Conservation Plan

(a) Chelan PUD shall carry out its obligations as set forth in the 50-year HCP Agreement for the Rocky Reach Hydroelectric Project No. 2145, filed with FERC on November 24, 2003, approved by the Commission at 107 FERC ¶ 61,280 and ¶ 61,281, and prescribed by National Marine Fisheries Service (NMFS) and USFWS pursuant to Section 18 of the Federal Power Act. Further, the licensee shall file with the Commission (1) the final annual and comprehensive progress reports developed pursuant to the HCP; and (2) the final results of all studies and testing pursuant to the HCP.

(b) Prior to taking any action pursuant to the HCP that requires a change in the authorized project facilities or operations not specifically identified in the HCP, the licensee shall file a license amendment application.

(c) The licensee shall file design drawings prior to the implementation of any modification or addition to project works that is necessary to implement the HCP. The licensee shall file such design drawings for Commission approval at least 90 days prior to the start of construction or modification. The licensee will file as-built drawings with the Commission within six months after completion of construction or modification.