
LAKE CHELAN FISHERY PLAN

Second Draft

LAKE CHELAN HYDROELECTRIC PROJECT
FERC Project No. 637

~~May 16~~July 25, 2007



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

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EXECUTIVE SUMMARY

The Federal Energy Regulatory Commission (FERC) Order on Offer of Settlement and Issuing New License (License) for the Lake Chelan Hydroelectric Project No. 637 (Project) was issued November 6, 2006 to the Public Utility District No. 1 of Chelan County (Chelan PUD). Article 404 of the new Project License requires Chelan PUD to submit to FERC a Lake Chelan Fishery Plan by November 6, 2007. This plan describes the methods and schedule used to demonstrate compliance with efforts to restore and enhance, where feasible, native fisheries in Lake Chelan and its tributaries, and to support the lake's recreational sport fishery required by the new license, as specified in the License articles, and the Lake Chelan Comprehensive Settlement Agreement, October 8, 2003 (Settlement Agreement). Included in this plan are provisions for removing tributary mouth barriers, fish stocking, entrainment sampling, food web model development, collecting large woody debris, and implementing a monitoring and evaluation program.

SECTION 1: INTRODUCTION

The Federal Energy Regulatory Commission (FERC) Order on Offer of Settlement and Issuing New License (License) for the Lake Chelan Hydroelectric Project No. 637 (Project) was issued on November 6, 2006 to the Public Utility District No. 1 of Chelan County (Chelan PUD). The Project License requires a number of measures related to fishery enhancement and protection to be implemented in the Lake Chelan basin, as described in the Lake Chelan Comprehensive Settlement Agreement (Settlement Agreement), October 8, 2003, ~~and its' attachments, which~~ The Settlement Agreement is Appendix A of the Project License.

Project License Article 404 requires Chelan PUD, within one year of the license issuance date, to file with FERC a Lake Chelan Fishery Plan (LCFP). The components of the LCFP relate to tributary barrier removal, fish stocking, and entrainment sampling that are specified in ~~the Settlement Agreement~~ Appendix A of the License, as stated below.

Article 404. Lake Chelan Fishery Plan. Within one year of the issuance date of the license, the licensee shall file for Commission approval a Lake Chelan Fishery Plan to restore and enhance, where feasible, native fisheries in Lake Chelan and its tributaries and to support the lake's recreational sport fishery.

This LCFP reflects the present status of efforts for tributary barrier removal, fish stocking and entrainment investigation that will be conducted in order to meet the requirements of the ~~Project~~ License and Settlement Agreement. The organization of this LCFP is in sections that relate to specific clauses in Article 404. Each section begins with the relevant requirements of the License, followed by a description of the methods that will be used to monitor and report compliance with the License.

Also included in this LCFP are additional measures from the Settlement Agreement that are intended to comply with Article 404, specifically food web model development, large woody debris (LWD) collection and storage, and monitoring and evaluation program implementation.

SECTION 2: FISHERY RESTORATION AND ENHANCEMENT METHODS

2.1 Tributary Barrier Removal

Management recommendations are to manage lake water levels, as described in Appendix A of the Project License, Chapter 8 of the Settlement Agreement, and conduct mechanical barrier removal, as described in Chapter 6 of the Settlement Agreement to provide tributary access for Westslope cutthroat trout (WSCT) spawning.

Barriers to upstream fish passage were identified in seven of the nine study tributaries to Lake Chelan during relicensing baseline studies (DES 2000a). These barriers become exposed to varying degrees when the lake is drawn down from its high pool elevation of 1,100 feet (ft) mean sea level (MSL). All seven barriers are exposed when the lake is below a pool elevation of 1,090 ft. The barriers can be exposed during the period in the spring when adfluvial WSCT and rainbow trout may be attempting to migrate up the tributaries to spawn.

Six of the creeks had upstream fish passage barriers due to insufficient water depth, three of the creeks had barriers due to high water velocity, and five of the creeks had gradient barriers. Table 1 lists the study tributaries, type of barrier present in each stream, lake elevation at which upstream passage would become possible, and the dates in 1999 when passage became possible.

Table 1: Results of the barrier assessment in alluvial fans, April 1999.

CREEK	DISCHARGE (cfs)	GRADIENT BARRIER	DEPTH BARRIER	VELOCITY BARRIER	PASSAGE ELEVATION (ft above msl)	DATE PASSAGE ACHIEVED
First	74.16	No	No	No	1,083	4/20/99
Mitchell	27.04	Yes	Yes	No	1,095	6/17/99
Gold	19.08	No	Yes	No	1,092	6/12/99
Twenty-five Mile	107.54	No	No	No	1,083	4/20/99
Grade	23.28	Yes	Yes	No	1,094	6/16/99
Safety Harbor	30.58	Yes	Yes	Yes	1,092	6/12/99
Prince	73.83	Yes	Yes	Yes	1,092	6/12/99
Rail Road	176.73	No	No	Yes	1,097	6/23/99
Fish	27.83	Yes	Yes	No	1,090	6/3/99

Preliminary barrier analysis was conducted by two methods. Gradient barriers were determined using the Forest Practices Board Emergency Rule (2003) where a channel gradient of greater than 16 to 20 percent is considered a barrier to fish passage. Stream channels with a gradient between 16 and 20 percent may be passable if step-pools are present where fish may rest during upstream migration. Gradients greater than 20 percent are considered a barrier to fish migration.

Depth and velocity barriers were determined using methods outlined by Thompson (1972), also known as the “Oregon Method.” Adult trout require a minimum depth of 0.4 ft with water velocity less than 4.0 ft. per second (ft/sec). These criteria must be met over 25 percent of the total stream width, with a continuous section of at least 10 percent of the total stream width. These same methodologies (the Forest Practices Board Emergency Rule and “Oregon Method”) will be used to determine whether barriers reform after streams have been treated and existing barriers removed.

Specific designs for tributary barrier removal have not been developed to date due to the unique characteristics of each tributary mouth. However, standard and accepted river habitat restoration techniques will be employed in tributaries to provide adfluvial salmonids access for spawning. Design development of tributary mouth restoration, selection of tributaries for barrier removal, and monitoring regarding tributary barrier removal will be based on the recommendations of the Lake Chelan Fishery Forum (LCFF), and subject to the approval of the National Park Service (NPS) regarding tributaries on its lands, the USDA Forest Service for tributaries on its lands, and the Washington Department of Fish and Wildlife (WDFW) for tributaries on state lands.

2.2 Fish Stocking

Recommendations for fishery management are designed to: 1) provide guidance for the management of the fishery resources in Lake Chelan; 2) maintain a healthy recreational sport fishery in Lake Chelan; ~~and~~ 3) ~~and~~ develop a monitoring and evaluation program to assess the efficacy of management actions.

The primary management objectives are to:

1. Emphasize restoration/enhancement of native species, where feasible.
2. Support the recreational sport fishery.
3. Manage the lake elevation to enhance tributary production and recreation.
4. Determine compatibility of management actions with potential future bull trout re-introduction.
5. Develop a monitoring and evaluation program that provides flexibility for future changes.
6. Monitor and address entrainment of fish from Lake Chelan into the Project.

Representatives from various stakeholders in the Lake Chelan Project relicensing process recognized that some level of artificial propagation (i.e., fish stocking) will be necessary in order to achieve the management objectives stated above. Included in Appendix A of the ~~Project~~-License, Chapter 6 of the Settlement Agreement is a provision for Chelan PUD to make available to the WDFW sufficient funding to rear annually the following resident fish at the Chelan Hatchery for stocking in Lake Chelan:

1. Approximately 5,000 pounds of salmonid fingerlings (for example: 500,000 fish at 100 fish/lb., presently kokanee).
2. Approximately 33,000 pounds of catchable-sized salmonids (for example: approximately 100,000 fish at 3 fish/lb., presently WSCT).

Prior to 2007, kokanee were stocked annually in the Wapato Basin of Lake Chelan near “The Monument” in May. However, due to concerns regarding predation by lake trout on stocked kokanee, WDFW will make releases in 2007 in the Wapato Basin at Mill Bay and Lakeside.

Prior to 2007, catchable-size salmonids, primarily rainbow trout but now converted to Westslope cutthroat trout (WSCT), have been stocked annually in the Wapato Basin at First and Twentyfive Mile creeks in June and July. In 2007, WDFW changed the stocking plan, due to fish health issues with rearing all catchable-sized WSCT, to releasing 50,000 WSCT (at a size of 15 fish/pound) at Lakeside and Mill Bay in March, and 50,000 triploid rainbow trout (at a size of 3 fish/pound) at Lakeside in August and September (Art Viola, WDFW, pers. com.).

2.3 Entrainment Sampling

The target species for entrainment studies are salmonids native to the Lake Chelan system, i.e. bull trout and WSCT in the adult life stage. Based on conversations with fishery managers during the relicensing process, it was determined that adult, adfluvial WSCT would be most active in spring and travel the lake most extensively during their spawning period in search of suitable tributary spawning habitat. Westslope cutthroat trout spawning periodicity is thought to occur from April through June in the Lake Chelan tributaries.

The objective of entrainment sampling will be to determine the relative abundance of bull trout and WSCT in the vicinity of the Project (i.e., dam, intake structure and spillway) at the time of year when the target species would most likely be present (April through early July). The study methods described in the following paragraphs were used to investigate entrainment during relicensing baseline studies (DES 2000b). These same methods, or others recommended by the LCFF, will be employed for future entrainment investigations.

Hook and Line

Hook and line fishing was conducted at the Project intake, along the trash boom above the dam, and in areas from the dam upstream to the second bridge.

Oneida Trap

An Oneida trap, belonging to Chelan PUD, was placed off the right bank (looking downstream), downstream of the boat launch about 50 feet from the intake structure. The trap was set in place three to four days a week beginning on May 9 and ending July 12, 2001. Biologists checked the trap twice daily while it was fishing. Fish caught in the trap were identified, measured, and released.

Gillnet

Fishery managers participating in the relicensing process assumed that salmonids migrating to the portion of the lake near the Lake Chelan Dam would be utilizing the upper portion of the water column and could be intercepted by gillnets suspended from

the water surface. Gillnets are highly selective in regard to the size of the fish captured. Therefore, gillnets with various-sized mesh panels were used in order to bracket the optimum size of the target species and life stage and potentially capture a broader size range of fish. Two 150 ft-long variable-mesh (1/2- to 3-inch mesh) floating gillnets were used. The gillnets were placed on the downstream side of the floating catwalks in front of the dam and extended from the pier nose on the right bank to approximately 35 feet from the central spillway.

Video

Water clarity in front of the intake structures was sufficiently good that fish could be observed easily swimming directly in front of the trashracks while biologists were looking down from the pier apron. To document the fish behavior, biologists deployed a Fish-eye™ camera attached to long pole submerged into the water directly in front of the intakes. The video feed was attached to a video cassette recorder. During the video-taping, the Project was running at full capacity, drawing 2200 cfs through the intake.

2.4 Large Woody Debris

The USDA Forest Service, the NPS, WDFW, and Chelan PUD have agreed to use LWD in implementing the erosion control and fishery plans contained in Appendix A of the ~~Project~~ License, Chapter 3 of the Settlement Agreement. Potential benefits include increased habitat for fish, substrate for invertebrate production, shoreline stabilization, and tributary mouth restoration/barrier removal work. The rationale for including LWD in this plan, although this plan addresses measures described in Appendix A of the ~~Project~~ License, Chapter 6 of the Settlement Agreement, is twofold: First, LWD is planned for use in erosion control projects and stream restoration activities associated with tributary barrier removal. These efforts need direction and recommendations from the LCFF, which has the biological expertise to use LWD in the most effective manner; and second, Chapter 3 measures do not fall under the guidance of any specific forum established under the Settlement Agreement. Including LWD measure in this plan, under the guidance of the LCFF, will ensure that measures are implemented in a timely manner.

2.5 Monitoring and Evaluation Program

A monitoring and evaluation program is necessary to assess the efficacy of management actions, and to allow for changes to the plan as future conditions and data analyses dictate. Objectives of the monitoring and evaluation program are to:

- Gather data for input into fishery management decisions to protect, conserve, and restore native fish populations, and to maintain quality recreational fishing opportunities.
- Evaluate whether measures implemented are providing desired results.
- Maintain future options and prevent making any irreversible decisions regarding ecosystem function.; and
- Prepare annual report of monitoring and evaluation results and provide future recommendations.

The ultimate goal of the monitoring and evaluation program is to provide information to fishery managers with which to develop biological objectives and make effective

management decisions that will provide for sustainable fishery resources in Lake Chelan and its tributaries.

2.5.1 Food Web Model Development

One option of the monitoring and evaluation program is to develop a bioenergetically-based food web model for Lake Chelan. The model can be used as a tool for evaluating the potential impacts of species interactions, production potential, and environmental conditions (i.e., inter-annual changes in temperature regimes) within a temporal, spatial, and size-structured framework. The model, ultimately, would be used to support development and evolution of this LCFP. This approach would allow fishery managers to evaluate current and/or proposed fish stocking strategies and management regulations within the context of ecological feedback from the lake food web.

2.5.2 Other Monitoring and Evaluation Measures

Another important component of the monitoring and evaluation program is monitoring tributary mouth access after alluvial barriers are mechanically removed. Monitoring would involve surveying the tributary mouths on an as-needed basis (once every three to five years) to identify formation of new depth, velocity, or gradient barriers. The goal is to ensure channel integrity sufficient to maintain upstream and downstream fish passage between the lake and the tributary. Development of the monitoring and evaluation program is incumbent upon the interested Parties participating in the relicensing process, particularly the members of the LCFF.

Additional monitoring and evaluation measures will be necessary to determine the efficacy of actions recommended by the LCFF and implemented by Chelan PUD. Measures of the monitoring and evaluation program may include, but are not limited to, the following:

- Kokanee surveys
 - current effort (20 days/year)
 - expanded effort (60 days/year)
- Creel surveys (144 days every 3 years)
- Tributary indexing
 - 10 representative reaches
 - WSCT spawning surveys (12 days/year)
 - WSCT recruitment and abundance surveys (40 days every 3 years)
 - Genetic analysis
 - Barrier analysis (4 days/year)

SECTION 3: IMPLEMENTATION SCHEDULE

3.1 Tributary Barrier Removal

The following excerpt from Appendix A of the ~~Project~~-License, Article 6(c) of the Settlement Agreement describes the schedule for implementing tributary barrier removal in Lake Chelan:

(1) Chelan PUD shall be responsible for removing alluvium barriers in tributaries to Lake Chelan for the term of the New License, including any subsequent annual licenses, in order to facilitate adfluvial salmonid access for spawning, as described in Chapter 6 of the Comprehensive Plan. Potential sites are listed alphabetically in Table 6-1 of Chapter 6 of the Comprehensive Plan, and in the following table:

Table 2: Potential Tributary Barrier Removal Sites

Bear Creek	Lightning Creek
Big Creek	Little Big Creek
Cascade Creek	Lone Fir Creek
Castle Creek	Mitchell Creek
Coyote Creek	Poison Creek
Deep Harbor Creek	Prince Creek
First Creek	Pyramid Creek
Fish Creek	Railroad Creek
Four mile Creek	Riddle Creek
Gold Creek	Safety Harbor Creek
Grade Creek	Twentyfive Mile Creek
Graham Harbor Creek	

The following is the priority list for the USDA Forest Service for tributary barrier removal efforts:

<u>Priority</u>	<u>Creek</u>	<u>Priority</u>	<u>Creek</u>
<u>1</u>	<u>Safety Harbor</u>	<u>2</u>	<u>Mitchell</u>
<u>1</u>	<u>Prince</u>	<u>3</u>	<u>First</u>
<u>1</u>	<u>Fish</u>	<u>3</u>	<u>Twenty-five Mile</u>
<u>2</u>	<u>Grade</u>	<u>3</u>	<u>Railroad</u>
<u>2</u>	<u>Gold</u>		

(2) Within the first five years of the New License, Chelan PUD shall implement the following actions within the drawdown zone of such tributaries: (i) remove existing barriers in up to 10 high priority tributaries, and (ii) monitor up to an additional 10 tributaries to determine if the new lake level operating regime described in Article 8 and Chapter 8 of the Comprehensive Plan effectively removes existing barriers from the mouths of these tributaries.

(3) Every two years during the remaining term of the New License, or at a frequency recommended by LCFF and approved by NPS and USDA Forest Service, Chelan PUD shall fund monitoring of up to 10 tributaries, to determine if barriers are present or have reformed; and to remove any such barriers from up to two tributaries annually, unless barriers are clearly not caused by the Project (e.g., the result of fire, earthquakes, landslides, etc.).

3.2 Fish Stocking

WDFW will continue the stocking program that was implemented under the former Lake Chelan License. Described in Appendix A of the ~~Project~~-License, Article 6(d)(2) of the Settlement Agreement, is the process for WDFW to change the stocking program in Lake Chelan. WDFW must ~~coordinate~~ consult with the NPS, USDA Forest Service, US Fish and Wildlife Service (USFWS) and consult with the LCFF prior to ~~reducing or eliminating~~ modifying fish stocking in Lake Chelan.

As stated in section 2.2, one objective that the LCFF must consider when planning fish stocking in Lake Chelan is ensuring management recommendations are compatible with the potential for bull trout reintroduction in the future. Current challenges facing bull trout reintroduction include: 1) disease potential; 2) inter-breeding with brook trout; 3) competition with lake trout; and 4) bull trout donor stock availability. The extirpation of bull trout from Lake Chelan is not well understood: postulated causes are loss of spawning habitat from storm and erosion events, over-fishing, and the outbreak of an epizootic. The disease that caused the epizootic is unknown and may still be present in the lake. Attempts to eradicate brook trout and lake trout from former bull trout habitat in other systems has shown limited success. The intent for the LCFF is to not introduce any additional challenges to bull trout reintroduction through additional fish stocking in the event that the existing challenges are overcome in the future.

An Interagency Agreement between Chelan PUD (~~Agreement~~-PUD No. 06001) and WDFW (~~Agreement~~-WDFW No. 06-1456) is in place to provide funding for fish stocking. This agreement is effective until May 31, 2011. Additionally, Chelan PUD is developing a payment agreement with WDFW for relicensing in order to ensure that funds are provided to WDFW for all measures outlined in the Settlement Agreement. The payment agreement will refer to the existing agreement and include provisions to continue the funding for rearing resident fish to be stocked ~~into~~ Lake Chelan after the ~~previous-existing~~ agreement expires.

~~Additionally, Chelan PUD is developing an Integrated Hatchery Improvement Plan (IHIP) for all PUD hatchery facilities. The intent of the plan is to identify future hatchery facility needs to ensure that the PUD will be able to provide the level of production agreed to in the Anadromous Fish Agreements and Habitat Conservation Plans for the Rocky Reach and Rock Island projects (HCPs), the Rocky Reach Comprehensive Settlement Agreement, and the Lake Chelan Comprehensive Settlement Agreement during the terms of these agreements.~~

Chelan PUD shall convene the LCFF no later than March 1 each year for review and revision of the stocking plan and management objectives by the settlement parties. Chelan PUD shall file an annual report with the Commission 30 days following the review by the consulted entities. The annual report shall include any recommendation for reducing or eliminating the stocking program and any recommended fish enhancement measures to be implemented in place of stocking.

3.3 Entrainment Sampling

The following excerpt from Appendix A of the ~~Project~~-License, Article 6(e) of the Settlement Agreement describes the conditions that would trigger entrainment sampling and how Chelan PUD will determine when those conditions have been met:

(1) Chelan PUD shall conduct no more than 140 days of entrainment sampling over four sampling years, using the same methodology used during the 2000 and 2001 field seasons, or another methodology of comparable cost recommended by the LCFF, and approved by WDFW, USFWS, and WDOE. Upon request of WDFW, Chelan PUD shall develop a sampling plan in consultation with USFWS, WDOE, and the LCFF, subject to approval by WDFW. The plan shall specify the sampling years and the allocation of sampling days among such years. The first sampling year shall not be prior to the seventh anniversary of the effective date of the New License, and the last sampling year shall be no later than the 35th anniversary of the effective date of the New License. The purpose of the sampling is to determine if significant numbers of adult spawnable age/size adfluvial westslope cutthroat trout are entering the power tunnel entrance.

(2) If less than 500 adult spawning age/size adult adfluvial westslope cutthroat trout are physically captured within any calendar year prior to completion of the four years of sampling, Chelan PUD, in consultation with LCFF, shall prepare an evaluation of the results of the entrainment monitoring and the method used. Chelan PUD, WDFW, USFWS, and WDOE shall determine whether the remainder of the four years of sampling should be conducted, at what intervals and what method should be used.

(3) If more than 500 adult spawnable age/size adult adfluvial westslope cutthroat trout are physically captured within a calendar year in the immediate vicinity of the power tunnel entrance, the WDFW, USFWS, or the WDOE may request that Chelan PUD install fish protection or exclusion devices for the power tunnel entrance, or that Chelan PUD implement other actions recommended by the LCFF and approved by WDFW, USFWS, and WDOE. Chelan PUD may object to the request on the grounds that such fish protection or exclusion devices, or such other actions, as the case may be, are not necessary. To assist in the determination of whether such fish protection or exclusion devices, or other actions, are necessary, Chelan PUD may conduct entrainment sampling in the power tunnel. If Chelan PUD so objects and it cannot reach agreement with the Agency or Agencies making the request, the matter shall be referred to dispute resolution pursuant to Section 16 of this Agreement. If Chelan PUD does not object, or the dispute resolution process results in a decision to install fish protection or exclusion devices, Chelan PUD shall seek recommendations from the LCFF regarding the design of fish protection or exclusion devices or such other actions. Chelan PUD shall conduct such

tests as necessary to determine the effectiveness of such fish protection or exclusion devices or such other actions. Upon development of a successful design, Chelan PUD shall install such fish protection or exclusion devices or implement such other actions.

(4) For purposes of this Article, “adult” is defined as naturally-produced (non-stocked), spawnable age or size adfluvial westslope cutthroat trout. The size of adult westslope cutthroat is defined as 9-12 inches in total length, based on current Twin Lakes stock spawner size, but such definition may be adjusted upon a recommendation by the LCFF to WDFW, USFWS, WDOE, and Chelan PUD.

Annual results of any entrainment sampling shall be compiled in a final report and filed with FERC no later than March 1 of the subsequent year. The report shall also contain any recommendations for continued sampling, or other studies to evaluate entrainment of WSCT.

Chelan PUD shall include with this plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the consulted entities, and specific descriptions of how the entities’ and the LCFF’s comments are accommodated by the plan.

3.4 Large Woody Debris

The following excerpt from Appendix A of the ~~Project~~-License, Chapter 3 of the Settlement Agreement, describes the funding schedule for obtaining and transporting LWD for erosion control efforts and tributary barrier removal and rehabilitation.

(a) Within 180 days of the effective date of the New License, and by January 31st of each of the next nineteen years, Chelan PUD shall make available five thousand dollars (\$5,000) for the benefit of the WDFW to be used in obtaining or transporting Large Woody Debris (LWD) or other bioengineered bank protection and in-lake fish habitat restoration, enhancement, and mitigation materials (hereafter referred to as “bank and habitat materials”) for use on state or private land within or adjacent to Lake Chelan, in accordance with Chapter 3 of the Comprehensive Plan, which is incorporated herein by reference. LWD consists of trees, logs, rootwads, woody debris, and other similar materials.

Prior to any expenditure of funds for obtaining, transporting or using LWD, the LCFF will prepare a detailed action plan. The LWD Action Plan will include specific details of LWD use in erosion control projects, stream restoration activities after tributary barriers are removed, or implementation of other projects recommended by the LCFF.

The schedule for implementing this measure is highly variable and depends upon availability of LWD in Lake Chelan, which is controlled by spring and fall high flow events caused by snow melt and storms that carry LWD from upland areas into Lake Chelan. Most of the effort expended implementing this measure will be following these high flow events as they occur throughout the first 20 years of the new license, and in coordination with the WDFW Region 2 Habitat Biologist.

3.5 Monitoring and Evaluation Program

3.5.1 Food Web Model Development

The following excerpt from Appendix A of the ~~Project~~-License, Article 6(a) of the Settlement Agreement describes the following schedule for funding the development of a bioenergetically-based food web model:

(1) When notified by WDFW pursuant to subsection (a)(2) of this Article, but not sooner than 180 days of the effective date of the New License, Chelan PUD shall make available \$100,000 to a contractor selected by Chelan PUD, after consultation with the LCFF, to develop a food web model for Lake Chelan, as described in section 5 of Chapter 6 of the Comprehensive Plan.

(2) Chelan PUD shall contract to develop the food web model when notified by WDFW, after coordination with NPS, USDA Forest Service, and USFWS, and after consultation with the LCFF, that, in addition to the \$100,000 to be provided by Chelan PUD pursuant to subsection (a)(1) of this License Article, there is funding available from non-Chelan PUD sources sufficient to fund the food web model contract. Chelan PUD may require a written commitment from such non-Chelan PUD source(s) of funding before or at the time Chelan PUD executes a contract for the food web model. If required, the written commitment shall be for the difference between the \$100,000 to be provided by Chelan PUD and the amount to be paid under the contract for the food web model. The food web model contract shall provide that the model and appropriate training shall be provided to the entities that are members of the LCFF.

The LCFF will meet on several occasions during 2007 to determine next steps and funding level required for continued food web model development. Food web model activities in 2007 and 2008 may include:

- Current status of the model development
- Funding needs for samples collected but yet to be analyzed.
- Identify existing data gaps.
- Define recommended research to address data gaps.
- Additional suggestions for future funding regarding model development.

3.5.2 Other Monitoring and Evaluation Measures

The following excerpt from Appendix A of the ~~Project~~-License, Article 6(b) of the Settlement Agreement describes the following schedule for funding implementation of a monitoring and evaluation program for Lake Chelan fishery resources:

(1) Within 180 days of the effective date of the New License, and by January 31st of each subsequent year, including any subsequent annual licenses, Chelan PUD shall make available \$20,000, to be used by the NPS, the USDA Forest Service, or WDFW, pursuant to a plan developed and adopted by the NPS, USDA Forest Service, and WDFW for monitoring and evaluating fish in Lake Chelan, as described in Chapter 6 of the Comprehensive Plan. The NPS, USDA Forest Service, and WDFW plan to consult with the LCFF in the course of developing such plan. If, in any year, the NPS, USDA Forest

Service, and WDFW fail to develop and adopt such a plan, and submit it to Chelan PUD by January 10, Chelan PUD shall carryover that year's \$20,000 in funding until such plan has been developed, adopted, and submitted to Chelan PUD.

(2) Within 180 days of the effective date of the New License, and by January 31st of each subsequent year, Chelan PUD shall make available an additional \$20,000, to be used by the NPS, the USDA Forest Service, or WDFW, pursuant to the plan to be developed and adopted pursuant to subsection (b)(1) of this Article. However, Chelan PUD shall only be required to expend such additional \$20,000 on the basis of a one-for-one match (in cash or in-kind) in such year by the NPS, the USDA Forest Service, the USFWS, the WDOE, the WDFW, or any other organization approved as a source of matching funds by the LCFF. Funds made available in any such year, but not matched by December 31 of the following year, shall cease to be available. For any year in which a plan pursuant to subsection (b)(1) of this Article is not submitted to Chelan PUD, Chelan PUD shall carryover such additional \$20,000 in available funding until December 31 of the following year. If such plan is not submitted to Chelan PUD by December 31 of such following year, and one or more requests for payment has not been received by Chelan PUD for such additional \$20,000 by December 31 of such following year, such additional \$20,000 shall no longer be available.

The LCFF will meet on several occasions during 2007 to determine next steps and funding level required for monitoring and evaluation program implementation. Monitoring and evaluation program activities in 2007 and 2008 may include:

- Kokanee surveys.
- WSCT spawning surveys.
- WSCT recruitment and abundance surveys.
- Tributary barrier indexing.
- Creel surveys.

[Table X provides a summary of the Lake Chelan Fishery Plan implementation schedule.](#)

Table X. Lake Chelan Fishery Plan Implementation Schedule Summary

<u>License Order Article No.</u>	<u>Settlement Agreement Article No.</u>	<u>Measure</u>	<u>Due Date</u>	<u>Description</u>
<u>404</u>		<u>Submit Lake Chelan Fishery Plan</u>	<u>November 1, 2007</u>	
<u>404</u>	<u>6(c)</u>	<u>Tributary Barrier Removal</u>	<u>Years 1-5: remove barriers in up to 10 tributaries; monitor up to 10 tributaries for barriers removed from new lake level operating regime.</u>	<u>2008: Safety Harbor, Prince 2009: Fish, Grade 2010: Gold, Mitchell 2011 First, Twenty-five Mile 2012: Railroad</u>
<u>404</u>	<u>6(c)</u>	<u>Tributary Barrier Removal</u>	<u>Years 6-50, every 2 years: monitor up to 10 tributaries to determine whether barriers are present or reform; remove barriers from up to 2 tributaries annually.</u>	
<u>404</u>	<u>6(d)</u>	<u>Fish Stocking Plan</u>	<u>Annually: Funding to rear 5,000 lbs. of fingerlings and 33,000 lbs. catchable-sized salmonids.</u>	<u>Annual action plan to determine fish stocking</u>
<u>404</u>	<u>6(e)</u>	<u>Entrainment Sampling Plan</u>	<u>Years 7-35, 140 days total. If entrainment identified, Chelan may install fish protection or exclusion devices or implement other actions.</u>	<u>Entrainment sampling conducted using gillnets, Oneida Trap, hook and line, or other methods as recommended by the LCFE</u>
	<u>6(a)</u>	<u>Develop Food Web model</u>	<u>One-time payment; \$100,000</u>	
	<u>6(b)</u>	<u>Monitoring & Evaluation Program</u>	<u>Annually \$20,000; Annually \$20,000 matching, if matching obtained by agencies</u>	<u>Annual action plans to define measures</u>
	<u>3(a-c)</u>	<u>LWD</u>	<u>Annually: \$5,000 years 1-20</u>	

SECTION 4: FUNDING

Payment Agreement

All payments for work conducted by Agencies will be on a reimbursable basis, as described in Funding Agreements (See Appendix B). Funding will be provided within (90) ninety days of the Agency submitting a quarterly invoice/variance form and only after review and approval by Chelan PUD. As a condition of payment for any work performed under the Settlement Agreement, Agencies must submit annual planning reports with cost estimates and description of work to be conducted. Planned and completed work provided by the Agencies (i.e. worked completed in the previous year and work planned for the upcoming year) will be summarized annually and included in an Annual Report submitted to the Commission by Chelan PUD. All costs, balances, or payment amounts shall be in accordance with Section 19.1 of the Settlement Agreement.

SECTION 5: LITERATURE CITED

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APPENDIX A: CONSULTATION WITH STAKEHOLDERS

APPENDIX B: PAYMENT AGREEMENT
