

# **COVER SHEET**

FEDERAL ENERGY REGULATORY COMMISSION

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE  
UPPER NORTH FORK FEATHER RIVER PROJECT

Project No. 2105-089

APPENDIX B

FOREST SERVICE FINAL SECTION 4(E) CONDITIONS

PAGES B-1 to B-96

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**APPENDIX B**

**UNFFR PROJECT**

**FOREST SERVICE FINAL SECTION 4(E) CONDITIONS**

Pacific Region, USDA Office of the General Counsel  
33 New Montgomery, 17<sup>th</sup> Floor  
San Francisco, CA 94105

Telephone: 415-744-3177  
Fax: 415-744-3170  
[E-mail:joshua.rider@usda.gov](mailto:joshua.rider@usda.gov)

November 4, 2004

Via Electronic Filing

Ms. Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, D. C. 20426

**Subject: FOREST SERVICE FINAL SECTION 4(e) CONDITIONS, SECTION 10(a)  
RECOMMENDATIONS AND RATIONALE  
Upper North Fork Feather River Project, FERC. No. 2105**

Dear Ms. Salas:

Enclosed for filing are the Forest Service Final Terms and Conditions for inclusion in a new license for this project, pursuant to Sections 4(e) and 10(a) of the Federal Power Act. Also included as Enclosure 2 is a revised rational document. The Federal Energy Regulatory Commission (FERC) Office of Energy Projects staff issued a Draft Environmental Impact Statement (DEIS) for the Upper North Fork Feather River Project, FERC No. 2105, in September, 2004. The project is located on lands administered by the Lassen and Plumas National Forests, USDA Forest Service.

This project does not conflict with any project of which we are aware that should be or has been constructed by the United States. It neither interferes with nor is inconsistent with the purposes for which the Lassen and Plumas National Forests were created or acquired. The Forest Service has no objection to a license being issued, subject to certain conditions necessary for the protection and utilization of National Forest System lands and resources affected by the project.

**Enclosure 1** contains Section 4(e) conditions to be included in the license, necessary for the protection and utilization of the affected National Forest System lands as well as Section 10(a) recommendations addressing actions that indirectly affect National Forest System lands and resources. The conditions and recommendations are based on Forest Service review of the application, extensive coordination with Federal and State agencies and other members of the public, and consultation with the Licensee and reflect to a large measure the April 22, 2004, project Relicensing Settlement Agreement. These conditions are consistent with the goals, objectives, standards, and guidelines of the Lassen and Plumas National Forests Land and Resource Management Plans. Under authority delegated from the Secretary of Agriculture, the Forest Service considers these conditions necessary to avoid or mitigate resource and environmental impacts caused by proposed project operations.

Extensive revisions have been made to a number of the draft Enclosure 1 conditions and recommendations. The revisions reflect settlement negotiation progress made subsequent to December 1, 2003, submittal of the Forest Service draft Section 4(e) conditions, an update of standard condition format and content, incorporation of some stand alone conditions into other conditions, and deletion of some conditions. Together, these Section 4(e) conditions and the Section 10(a) recommendations encompass the suite of Protection, Mitigation, and Enhancement measures developed by the Project 2105 Collaborative Group. The Collaborative met with the Licensee over a two-year period to collaboratively determine study needs, discuss study results, and determine necessary measures that protect and enhance resource and recreational values and allow for the continued operation of the Upper North Fork Feather River Project.

**Enclosure 2** contains a revised rationale document to accompany the Forest Service final Section 4(e) conditions and Section 10(a) recommendations. A preliminary rationale document accompanied the Forest Service draft Section 4(e) and Section 10(a) recommendations and is dated December 1, 2003. The revised rationale document describes the information and process used to develop and support the Section 4(e) conditions and Section 10(a) recommendations. The title and numbering of the Section 4(e) conditions cited in the revised rational document are consistent with the numbering of the final revised Section 4(e) conditions. The text has been updated to reflect the 2004 Sierra Nevada Forest Plan Amendment Record of Decision. Other edits for consistency have also been made.

Already part of the administrative record are citations of applicable Lassen and Plumas National Forest Land and Resource Management Plan Direction and tables describing physical, biological, species of concern, lake level/social and management attributes of project reservoirs and river reaches used to also develop and support Section 4(e) and Section 10(a) recommendations. The Forest Service also filed comments on the project DEIS on November 1, 2004.

Please contact Mike Taylor, Plumas National Forest (530) 532-7427, or Kathy Turner, Lassen National Forest (530-336-5521), if you have questions.

Sincerely,

Joshua Rider  
Attorney  
Office of General Counsel

Enclosures

cc: FERC service list  
Forest Service mail list  
Mike Taylor, Feather River Ranger District, Plumas NF  
Kathy Turner, Hat Creek Ranger District, Lassen NF  
Robert Hawkins, RHAT

## Enclosure 1

# PACIFIC SOUTHWEST REGION USDA FOREST SERVICE FINAL TERMS AND CONDITIONS

## Upper North Fork Feather River Project FERC Project No. 2105

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# **Final 4(e) Terms and Conditions and 10(a) Recommendations**

## **Upper North Fork Feather River Project FERC Project No. 2105**

### **I. Introduction**

The Forest Service hereby submits its Final 4(e) Terms and Conditions (Conditions) and Section 10(a) recommendations, as applicable, for the Upper North Fork Feather River Project (FERC Project No. 2105), in accordance with 18 CFR 4.34(b)(1)(i). On April 22, 2004 the Forest Service signed a Relicensing Settlement Agreement with the Licensee and other parties. The Relicensing Settlement Agreement was filed with the Commission on April 30, 2004. The Forest Service agreed to propose as its Section 4(e) conditions the protection, mitigation, and enhancement measures (PM&E), which the Forest Service determined were within its jurisdiction to prescribe as Section 4(e) conditions, as stated in Appendix A of the Relicensing Settlement Agreement. Conditions 25 through 40 are proposed Section 4(e) conditions stated in nearly the exact wording as in the Relicensing Settlement Agreement. Wording that has been italicized in each of these conditions indicates that the Forest Service determined that this portion of the condition was not within its jurisdiction; however, the Forest Service fully supports the italicized wording and recommends it be included in the license under section 10(a) of the Federal Power Act.

Section 4(e) of the Federal Power Act states the Commission may issue a license for a project within a reservation only if it finds that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired. This is an independent threshold determination made by FERC, with the purpose of the reservation defined by the authorizing legislation or proclamation (see *Rainsong v. FERC*, 106 F.3d 269 (9<sup>th</sup> Cir. 1977)). The Forest Service, for its protection and utilization determination under Section 4(e) of the FPA may rely on broader purposes than those contained in the original authorizing statutes and proclamations in prescribing conditions (see *Southern California Edison v. FERC*, 116F.3d 507 (D.C. Cir. 1997)). These terms and conditions are based on those resource and management requirements enumerated in the Organic Administration Act of 1897 (30 Stat. 11), the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215), the National Forest Management Act of 1976 (90 Stat. 2949), and any other law specifically establishing a unit of the National Forest System or prescribing the management thereof (such as the Wilderness Act or the Wild and Scenic River Act), as such laws may be amended from time to time, and as implemented by regulations and approved Land and Resource Management Plans prepared in accordance with the National Forest Management Act. Specifically, the 4(e) conditions are based on the Land and Resource Management Plans (as amended) for the Lassen and Plumas National Forests, as approved by the Regional Forester of the Pacific Southwest Region.

Pursuant to Section 4(e) of the Federal Power Act, the Secretary of Agriculture, acting by and through the Forest Service, considers the following conditions necessary for the adequate

protection and utilization of the land and resources of the Lassen and Plumas National Forests. License articles contained in the Federal Energy Regulatory Commission's (hereinafter referred to as the Commission) Standard Form L-1 (revised October 1975) issued by Order No. 540, dated October 31, 1975, cover general requirements. Section II of this document includes standard conditions deemed necessary for the administration of National Forest System lands. Section III covers specific requirements for protection and utilization of National Forest System lands and shall also be included in any license issued.



## **II. Standard Forest Service Conditions**

### **Condition No. 1 – Requirement to Obtain a Forest Service Special-Use Authorization**

The Licensee shall secure a single comprehensive facility special-use authorization from the Forest Service for the occupancy and use of National Forest System lands. The comprehensive authorization shall apply to lands currently or previously authorized for use as well as lands identified in pending applications for use, and for National Forest System lands added to the licensed area. The permit shall not include road use authorization as described in Condition No. 42. The licensee shall obtain the executed authorization before beginning ground-disturbing activities on National Forest System lands or within 12 months of license issuance if no construction or reconstruction was proposed in the application for license.

The licensee may commence ground-disturbing activities authorized by the license and special-use authorization no sooner than 60 days following the date the licensee files the Forest Service special-use authorization with the Commission, unless the Commission prescribes a different commencement schedule.

In the event there is a conflict between any provision of the license and Forest Service special-use authorization, the special-use authorization shall prevail to the extent that the Forest Service, in consultation with the Commission, deems necessary to protect and utilize National Forest System resources.

### **Condition No. 2—Modification of 4(e) Conditions After Biological Opinion or Water Quality Certification**

The Forest Service reserves the right to modify these conditions, if necessary, to respond to any Final Biological Opinion issued for this Project by the United States Fish and Wildlife Service, National Oceanographic and Atmospheric Administration, or any Certification issued for this Project by the State Water Resources Control Board.

### **Condition No. 3—Forest Service Approval of Final Design**

Before any new construction of the Project occurs on National Forest System lands, the Licensee shall obtain prior written approval of the Forest Service for all final design plans for Project components, which the Forest Service deems as affecting or potentially affecting National Forest System resources. The Licensee shall follow the schedules and procedures for design review and approval specified in the conditions herein. As part of such written approval, the Forest Service may require adjustments to the final plans and facility locations to preclude or mitigate impacts and to insure that the Project is compatible with on-the-ground conditions. Should such necessary adjustments be deemed by the Forest Service, the Commission, or the Licensee to be a substantial change, the Licensee shall follow the procedures of Article 2 of the license. Any changes to the license made for any reason

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pursuant to Article 2 or Article 3 shall be made subject to any new terms and conditions of the Secretary of Agriculture made pursuant to Section 4(e) of the Federal Power Act.

#### **Condition No. 4—Approval of Changes**

Notwithstanding any Commission approval or license provisions to make changes to the Project, the Licensee shall obtain written approval from the Forest Service prior to making any changes in the location of any constructed Project features or facilities, or in the uses of Project lands and waters, or any departure from the requirements of any approved exhibits filed with the Commission. Following receipt of such approval from the Forest Service, and at least 60 days prior to initiating any such changes or departure, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the Forest Service for such changes. The Licensee shall file an exact copy of this report with the Forest Service at the same time it is filed with the Commission. This article does not relieve the Licensee from any amendment or other requirements of Article 2 or Article 3 of this license.

#### **Condition No. 5—Consultation**

Each year between March 15 and April 15, the Licensee shall consult with the Forest Service with regard to measures needed to ensure protection and utilization of the National Forest resources affected by the Project. Within 60 days following such consultation, the Licensee shall file with the Commission evidence of the consultation with any recommendations made by the Forest Service. The Forest Service reserves the right, after notice and opportunity for comment, to require changes in the Project and its operation through revision of the 4(e) conditions that require measures necessary to accomplish protection and utilization of National Forest resources.

When Forest Service section 4(e) conditions require the Licensee to file a plan with the Commission that is approved by the Forest Service, the Licensee shall provide the Forest Service a minimum of 60 days to review and approve the plan before filing the plan with the Commission. Upon Commission approval, the Licensee shall implement Forest Service required and approved plans.

#### **Condition No. 6—Surrender of License or Transfer of Ownership**

Prior to any surrender of this license, the Licensee shall provide assurance acceptable to the Forest Service that Licensee shall restore National Forest System resources to a condition satisfactory to the Forest Service upon or after surrender of the license, as appropriate. The restoration plan shall identify the measures to be taken to restore National Forest System resources and shall include adequate financial assurances such as a bond or letter of credit, to ensure performance of the restoration measures.

In the event of any transfer of the license or sale of the Project, the Licensee shall guarantee or assure that, in a manner satisfactory to the Forest Service, the Licensee or transferee will provide for the costs of surrender and restoration. If deemed necessary by the Forest Service to assist in evaluating the Licensee's proposal, the Licensee shall conduct an analysis, using experts approved by the Forest Service, to estimate the potential costs associated with surrender and restoration of the Project area to Forest Service specifications. In addition, the Forest Service may require the Licensee to pay for an independent audit of the transferee to assist the Forest Service in determining whether the transferee has the financial ability to fund the surrender and restoration work specified in the analysis.

### **Condition No. 7—Hazardous Substances Plan**

Within 1 year of license issuance, the Licensee shall file with the Commission a plan approved by the Forest Service for oil and hazardous substances storage and spill prevention and cleanup for Project facilities on or affecting National Forest System lands. In addition, during planning and prior to any new construction or maintenance not addressed in an existing plan, the Licensee shall notify the Forest Service, and the Forest Service shall make a determination whether a plan approved by the Forest Service for oil and hazardous substances storage and spill prevention and cleanup is needed.

At a minimum, the plan must require the Licensee to (1) maintain in the Project area, a cache of spill cleanup equipment suitable to contain any spill from the Project; (2) to periodically inform the Forest Service of the location of the spill cleanup equipment on National Forest System lands and of the location, type, and quantity of oil and hazardous substances stored in the Project area; (3) provide an outline of Licensee's procedures for reporting and responding to releases of hazardous substances, including names and phone numbers of all emergency response personnel and their assigned responsibilities, and (4) inform the Forest Service immediately of the nature, time, date, location, and action taken for any spill affecting National Forest System lands and Licensee adjoining property.

### **Condition No. 8—Use of Explosives**

1. Use of explosives shall be consistent with State and local requirements.  
The Licensee shall use only electronic detonators for blasting on National Forest System lands and Licensee adjoining property, except near high-voltage powerlines. The Forest Service may allow specific exceptions when in the public interest.
2. In the use of explosives, the Licensee shall exercise the utmost care not to endanger life or property and shall comply with the requirements of the Forest Service. The Licensee shall be responsible for any and all damages resulting from the use of explosives and shall adopt precautions to prevent damage to surrounding objects. The Licensee shall furnish and erect special signs to warn the public of the Licensee's blasting operations. The Licensee shall place and maintain such signs so they are clearly evident to the public during all critical periods of the blasting operations, and shall ensure that they include a

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warning statement to have radio transmitters turned off. The Licensee shall store all explosives on National Forest System lands in a secure manner, in compliance with State and local laws and ordinances, and shall mark all such storage places "DANGEROUS—EXPLOSIVES." Where no local laws or ordinances apply, the Licensee shall provide storage that is satisfactory to the Forest Service and in general not closer than 1,000 feet from the road or from any building or camping area.

3. When using explosives on National Forest System lands, the Licensee shall adopt precautions to prevent damage to landscape features and other surrounding objects. When directed by the Forest Service, the Licensee shall leave trees within an area designated to be cleared, as a protective screen for surrounding vegetation during blasting operations. The Licensee shall remove and dispose of trees so left when blasting is complete. When necessary, and at any point of special danger, the Licensee shall use suitable mats or some other approved method to smother blasts.

## **Condition No. 9—Fire Prevention, Response, and Investigation**

### **A. Fire Prevention and Response Plan**

Within one year of license issuance the Licensee shall file with the Commission a Fire Prevention and Response Plan that is approved by the Forest Service, and developed in consultation with appropriate State and local fire agencies. The plan shall set forth in detail the Licensee's responsibility for the prevention (excluding vegetation management as described in Condition No. 41), reporting, control, and extinguishing of fires in the vicinity of the Project.

At a minimum the plan shall address the following categories:

1. Fuels Treatment/Vegetation Management
  - Identification of fire hazard reduction measures to prevent the escape of project-induced fires.
2. Prevention
  - Availability of fire access roads, community road escape routes, helispots to allow aerial firefighting assistance in the steep canyon, water drafting sites and other fire suppression strategies.
  - Address fire danger and public safety associated with project induced recreation, including fire danger associated with dispersed camping, existing and proposed developed recreation sites, trails, and vehicle access.
3. Emergency Response Preparedness
  - Analyze fire prevention needs including equipment and personnel availability.
4. Reporting
  - Licensee shall report any project related fires to the Forest Service within 24 hours.
5. Fire Control/Extinguishing

- Provide the Forest Service with a list of the locations of available fire suppression equipment and the location and availability of fire suppression personnel.

Include appropriate measures from Condition 41 and assure fire prevention measures will conform to water quality protection practices as enumerated in USDA, Forest Service, Pacific Southwest Region, Water Quality Management for National Forest System Lands in California-Best Management Practices.

## **B. Investigation of Project Related Fires**

The Licensee agrees to fully cooperate with the Forest Service on all fire investigations. The Licensee shall produce upon request all material and witnesses, over which the Licensee has control, related to the fire and its investigation including:

- All investigation reports
- All witness statements
- All photographs
- All drawings
- All analysis of cause and origin
- All other, similar materials and documents regardless of how collected or maintained

The Licensee shall preserve all physical evidence, and give custody to the Forest Service of all physical evidence requested.

## **Condition No. 10—Road Use by Government**

The United States shall have unrestricted use of any road within the project area for all purposes deemed necessary and desirable in connection with the protection, administration, management, and utilization of National Forest System lands or resources and shall have the right to extend rights and privileges of use of such road to States and local subdivisions thereof, as well as to other users, including members of the public, except contractors, agents, and employees of the Licensee; provided that the agency having jurisdiction shall control such use so as not to unreasonably interfere with safety or security uses, or cause the Licensee to bear a share of the costs of maintenance greater than the Licensee's use bears to all use of the road.

## **Condition No. 11—Road Use**

The Licensee shall confine all project vehicles, including but not limited to administrative and transportation vehicles and construction and inspection equipment, to roads or specifically designed access routes, as identified in the Road Management Plan (refer to Condition No. 42). The Forest Service reserves the right to close any and all such routes where damage is occurring to the soil or vegetation, or, if requested by Licensee, to require reconstruction/construction by the Licensee to the extent needed to accommodate the Licensee's use. The Forest Service agrees to provide notice to the Licensee and the

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Commission prior to road closures, except in an emergency, in which case notice will be provided as soon as practicable.

### **Condition No. 12—Maintenance of Improvements**

The Licensee shall maintain all its improvements and premises on National Forest System lands to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the Forest Service. The Licensee shall comply with all applicable Federal, State, and local laws, regulations, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resources Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Control, and Liability Act, 42 U.S.C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, maintenance of any facility, improvement, or equipment.

### **Condition No. 13—Safety During Project Construction Plan**

Sixty days prior to ground-disturbing activity related to new Project construction on or affecting National Forest System lands, the Licensee shall file with the Commission a Safety During Construction Plan approved by the Forest Service that identifies potential hazard areas and measures necessary to protect public safety. Areas to consider include construction activities near public roads, trails and recreation area and facilities.

The Licensee shall perform daily (or on a schedule otherwise agreed to by the Forest Service in writing) inspections of Licensee's construction operations on National Forest System lands and Licensee adjoining fee title property while construction is in progress. The Licensee shall document these inspections (informal writing sufficient) and shall deliver such documentation to the Forest Service on a schedule agreed to by the Forest Service. The inspections must specifically include fire plan compliance, public safety, and environmental protection. The Licensee shall act immediately to correct any items found to need correction.

### **Condition No. 14—Pesticide Use Restrictions**

Pesticides may not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, and rodents, undesirable fish, or other pests on National Forest System lands without the prior written approval of the Forest Service. The Licensee shall submit a request for approval of planned uses of pesticides. The request must cover annual planned use and be updated as required by the Forest Service. The Licensee shall provide information essential for review in the form specified. Exceptions to this schedule may be allowed only when unexpected outbreaks of pests require control measures that were not anticipated at the time the request was submitted. In such an instance, an emergency request and approval may be made.

The Licensee shall use on National Forest System lands only those materials registered by the U. S. Environmental Protection Agency for the specific purpose planned. The Licensee must strictly follow label instructions in the preparation and application of pesticides and disposal of excess materials and containers.

#### **Condition No. 15—Erosion Control Measures Plan**

Sixty days prior to beginning any new construction or non-routine maintenance projects with the potential for causing erosion and/or stream sedimentation on or affecting National Forest System lands (including but not limited to planned recreation-related construction), the Licensee shall file with the Commission an Erosion Control Measures Plan that is approved by the Forest Service. The Plan shall include measures to control erosion, stream sedimentation, dust, and soil mass movement.

The plan shall be based on actual-site geologic, soil, and groundwater conditions and shall include:

1. A description of the actual site conditions;
2. Detailed descriptions, design drawings, and specific topographic locations of all control measures;
3. Measures to divert runoff away from disturbed land surfaces;
4. Measures to collect and filter runoff over disturbed land surfaces, including sediment ponds at the diversion and powerhouse sites;
5. Revegetating disturbed areas in accordance with current direction on use of native plants and locality of plant and seed sources;
6. Measures to dissipate energy and prevent erosion; and,
7. A monitoring and maintenance schedule.

#### **Condition No. 16—Valid Claims and Existing Rights**

This license is subject to all valid rights and claims of third parties. The United States is not liable to the Licensee for the exercise of any such right or claim.

#### **Condition No. 17—Compliance with Regulations**

The Licensee shall comply with the regulations of the Department of Agriculture and all federal, state, county, and municipal laws, ordinances, or regulations in regards to the area or operations covered by this license, to the extent those laws, ordinances, or regulations are not preempted by federal law.

#### **Condition No. 18—Protection of United States Property**

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Upper North Fork Feather River Project, FERC No. 2105

The Licensee shall protect from damage the land and property of the United States covered by and used in connection with this license.

**Condition No. 19—Indemnification**

The Licensee shall indemnify, defend, and hold the United States harmless for any damages or losses sustained by the United States and for judgments, claims, or demands assessed against the United States, in connection with the Licensee's use or occupancy authorized by this license. The licensee's indemnification of the United States shall include, but not be limited to, any loss by personal injury, loss of life and damage to property in connection with the occupancy or use authorized by this license. Indemnification shall include, but not be limited to, the value of resources damaged and destroyed; the costs of restoration, cleanup, and other mitigation; fire suppression and other types of abatement costs; third party claims and judgments; and all administrative costs, interest, and other legal expenses. This paragraph shall survive the termination of this license, regardless of cause.

**Condition No. 20—Surveys, Land Corners**

The Licensee shall avoid disturbance to all public land survey monuments, private property corners, and forest boundary markers. In the event that any such land markers or monuments are destroyed by an act or omission of the Licensee, in connection with the use and/or occupancy authorized by this license, depending on the type of monument destroyed, the Licensee shall reestablish or reference same in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the County Surveyor, or (3) the specifications of the Forest Service. Further, the Licensee shall ensure that any such official survey records affected are amended as provided by law.

**Condition No. 21—Damage to Land, Property, and Interests of the United States**

The Licensee has an affirmative duty to protect the land, property and interests of the United States from damage arising from occupancy and use of the license.

In addition to the general requirements of Article 22 and 24, the Licensee is strictly liable for and shall pay all damages, costs and expenses associated with damage to the land, property and interests of the United States caused by or in connection with the occupancy or use authorized by the license, including but not limited to damages, costs and expenses resulting from fire. Such damages, costs and expenses shall include, but not be limited to:

1. Fire suppression costs
2. Rehabilitation and restoration costs
3. Value of lost resources
4. Abatement costs
5. Investigative and administrative expenses

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## 6. Attorneys' fees

Damages will be determined by the value of the resources lost or impaired, as determined by the Forest Service. The basis for damages will be provided to the Licensee. The licensee shall accept transaction registers certified by the appropriate Forest Service official as evidence of costs and expenses. The Licensee shall promptly pay to the United States such damages, costs and expenses upon written demand by the United States.

### **Condition No. 22—Risks and Hazards**

As part of the occupancy and use of the license area, the Licensee has a continuing responsibility to identify and report all hazardous conditions within the project boundary that would affect the improvements, resources, or pose a risk of injury to individuals. Licensee will abate those conditions, except those caused by third parties not related to the occupancy and use authorized by the License. Any non-emergency actions to abate such hazards on National Forest System lands shall be performed after consultation with the Forest Service. In emergency situations, the Licensee shall notify the Forest Service of its actions as soon as possible, but not more than 48 hours, after such actions have been taken. Whether or not the Forest Service is notified or provides consultation; the Licensee shall remain solely responsible for all abatement measures performed. Other hazards should be reported to the appropriate agency as soon as possible.

### **Condition No. 23—Access**

The Forest Service reserves the right to use or permit others to use any part of the licensed area on National Forest System lands for any purpose, provided such use does not interfere with the rights and privileges authorized by this license or the Federal Power Act.

### **Condition No. 24—Signs**

The Licensee shall consult with the Forest Service prior to erecting signs on National Forest System lands covered by the license. Prior to the Licensee erecting signs or advertising devices on National Forest System lands covered by the license, the Licensee must obtain the written approval of the Forest Service as to location, design, size, color, and message. The Licensee shall be responsible for maintaining all Licensee-erected signs to neat and presentable standards.

## **III. Project Specific Forest Service Conditions**

### **Condition No. 25—Streamflow**

- 1. Minimum Streamflows.** For the preservation and improvement of aquatic resources in the Project area, Licensee shall maintain specified Minimum Streamflows and release Pulse Flows below Project dams as measured at gages NF-2 and NF-70 in accordance

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with the Tables A-1 and A-2 below. The Minimum Streamflows identified are minimum release requirements as per Paragraph 5 below. Minimum Streamflows shall commence within 60 days of License issuance, unless facility modifications are required.

Table A-1. Releases from Canyon Dam

Water Year Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Critically Dry	75	75	90	90	90	80	75	60	60	60	60	70
Dry	90	100	110	110	110	110	80	70	60	60	60	75
Normal	90	100	125	125	125	125	90	80	60	60	60	75
Wet	90	100	125	150	150	150	95	80	60	60	60	75

Table A-2. Releases from Belden Dam

Water Year type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Critically Dry	105	130	170	180	185	90	80	75	75	75	85	90
Dry	135	140	175	195	195	160	130	110	100	100	110	115
Normal	140	140	175	225	225	225	175	140	140	120	120	120
Wet	140	140	180	235	235	225	175	140	140	120	120	120

Where facility modification is required to implement the efficient release of Minimum Streamflows, the Licensee shall submit applications for permits within one year after license issuance and complete such modifications as soon as reasonably practicable but no later than two years after receipt of all required permits and approvals. Prior to completion of such required facility modifications, the Licensee shall make a Good Faith effort as defined in Paragraph 1.5 of the Relicensing Settlement Agreement to provide the specified Minimum Streamflows within the capabilities of the existing facilities. The requirements of this Paragraph 1 are subject to temporary modification if required by equipment malfunction, as directed by law enforcement authorities, or in emergencies as defined in Paragraph 1.5 of the Relicensing Settlement Agreement. The requirements of this condition are subject to temporary modification if required by an emergency, as defined herein in Paragraph 1.5 of the Relicensing Settlement Agreement. If the Licensee temporarily modifies the requirements of these conditions, then the Licensee shall make all reasonable efforts to promptly resume performance of such requirements and shall notify State Water Resources Control Board, Forest Service, U. S. Fish and Wildlife Service, NOAA Fisheries, and all

other Relicensing Settlement Agreement signatories pursuant to Paragraph 5.9 of the Settlement Agreement.

**2. Streamflows in Lower Butt Creek.** Licensee shall take no action to reduce dam leakage, tunnel leakage, spring or other natural flows that currently provide inflow to Lower Butt Creek below the Butt Valley Dam unless directed to do so by the Commission or other regulatory agency.

**3. Pulse Flows in North Fork Feather River.** Licensee shall implement Pulse Flows and gravel monitoring in the Seneca and Belden Reaches to further assist in the preservation and improvement of aquatic conditions in the Project area.

A. Pulse Flows: Licensee shall provide one Pulse Flow release from both Canyon Dam (Seneca Reach) and Belden Forebay Dam (Belden Reach) in each of January, February and March if the forecasted Water Year Type for that month, as defined in Condition 27, indicates that the water year is anticipated to be either Normal or Wet. No Pulse Flows are required in months where the Water Year Type forecast for that month indicates that the water year will be either Dry or Critically Dry. No Pulse Flows will be required in March in the respective reach if two successive days of mean daily water temperature greater than 10 degrees C are measured at gages NF-2 (Seneca Reach) or NF-70 (Belden Reach), or if rainbow trout spawning in either the Seneca or Belden Reaches is observed and reported to Licensee by the California Department of Fish and Game or Forest Service. In both the Seneca and Belden Reaches, the total volume of water released for each Pulse Flow event (including the water released during the ramp up and ramp down periods) shall not exceed 1,800 AF. Initially, the typical schedule will be to increase the streamflow at the Basic Ramping Rate as defined in Paragraph 6(A) below to reach the peak streamflow, and hold the peak streamflow for 12 hours. The peak streamflow is variable by month and Water Year Type as follows: 675 cfs in January of Wet and Normal water years; 1,000 cfs in February and March of Normal water years, and 1,200 cfs in February and March of Wet water years. In the Seneca reach during March of Normal and Wet years, streamflow will be reduced at the Basic Ramping Rate until 400 cfs is reached, held at that streamflow for 6 hours, and then reduced at the Basic Ramping Rate until the Minimum Streamflow specified in Table A-1 above is reached. The 6-hour period of constant streamflow during the ramp down shall occur between 9 AM and 3 PM of a weekend to allow recreational boating opportunities. In the Belden Reach, the peak streamflow will be reduced using the Basic Ramping Rate until the Minimum Streamflow specified in Table A-2 above is reached, but no period of constant flow during the ramp down will be required in any month.

B. Pulse Flow Monitoring (Gravel Monitoring Plan): The Licensee shall, within 12 months of license issuance, develop and begin implementing a Gravel Monitoring Plan, in consultation with the Forest Service, California Department of Fish and Game, United States Fish and Wildlife Service, State Water Resources Control Board, and other Relicensing Settlement Agreement signatories. The Gravel Monitoring Plan must be approved by the Forest Service and filed with the Commission before implementation. The plan shall evaluate movement of sediment that occurs in the Belden and Seneca

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Reaches during scheduled Pulse Flow events and other flow events of similar magnitudes. Emphasis shall be placed on monitoring the movement of spawning-sized gravel and recruitment of similar-sized material into the Belden and Seneca Reaches. If, after review of the data collected through the Gravel Monitoring Plan, the Forest Service, California Department of Fish and Game, United States Fish and Wildlife Service, NOAA Fisheries, and State Water Resources Control Board determine that the Pulse Flow regime outlined in Paragraph 3(A) above could be improved to enhance the availability and distribution of spawning-sized gravel or enhance riparian function, the agencies specified above may propose revisions to the magnitude, duration, and/or frequency of the scheduled Pulse Flows, subject to the following limitations: (a) any proposed revised Pulse Flow events shall continue to occur in the months of January – March of Normal and Wet years; (b) the total volume of water released for revised Pulse Flows in January – March of each year (including the water released during the ramp up and ramp down periods) shall not exceed 5,400 AF; (c) the total volume of water released for revised Pulse Flows in January shall not exceed 1800 AF but the agencies may defer the January and/or February flows to February or March; (d) any proposed revised Pulse Flows shall not exceed the safe operating capabilities of the existing outlet works; and (e) any proposed schedule for revised Pulse Flow releases shall take into consideration the forecasted Water Year Type as that forecast is developing each year, and no revised Pulse Flows shall be required in a month where the Water Year Type is forecasted to be Dry or Critically Dry. If the agencies propose a revised Pulse Flow regime concept that meets these criteria, Licensee shall file the revised Pulse Flow regime with the Commission.

**4. Pulse Flows in Lower Butt Creek.** If determined to be necessary pursuant to Paragraph 8 below, Licensee shall provide Pulse Flows in Lower Butt Creek via use of the Butt Valley Reservoir spillway or an acceptable alternative. The magnitude, ramping, and duration of the Pulse Flow[s] will be determined by the Licensee in consultation with the Forest Service, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, California Department of Fish and Game and other Relicensing Settlement Agreement signatories and will consider the need to adequately move desired particle size material to the confluence with the Seneca Reach and address woody debris and live vegetation concerns. The timing of any Pulse Flows shall be coordinated with Pulse Flows in the Seneca Reach.

**5. Streamflow Measurement.** For the purpose of determining the river stage and Minimum Streamflow below Canyon Dam and Belden Forebay Dam, Licensee shall operate and maintain the existing gages at NF-2 and NF-70 (United States Geological Survey (USGS) gages 11399500 and 11401112, respectively) consistent with all requirements of FERC and under the supervision of the USGS. Any modification of the gage facilities at NF-2 and NF-70 that may be necessary to measure the new Minimum Streamflow releases shall be completed within three years after issuance of the New Project License. Licensee shall record instantaneous 15-minute streamflow as required by USGS standards at NF-2 and NF-70. The instantaneous 15-minute streamflow at these gages shall be at least 90 percent of the Minimum Streamflows set forth in Tables A-1 and A-2 above provided that the individual mean flows over a 24-hour period shall be equal to or greater than the Minimum Streamflow set forth in Table A-1 and A-2.

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**6. Ramping Rates.** For the preservation and improvement of aquatic resources in the Project area, Licensee shall control river flows by ramping streamflow releases from Project dams as provided in this Paragraph 6. Ramping Rates shall not apply to releases from Project Powerhouses (excluding Oak Flat Powerhouse) or Uncontrolled Spills from Project dams.

A. Basic Ramping Rates: During periods when ramping can be controlled, Ramping Rates shall apply to releases made from Canyon Dam and Belden Dam. Ramping Rates shall be followed during releases made to provide Pulse Flows and recreation river flows, and all other releases from Canyon Dam and Belden Dam that the Licensee makes for operational purposes. Monthly changes in Minimum Streamflow releases shall be made in a single step because the change is always less than the Ramping Rate criterion. Licensee shall follow the Basic Ramping Rate as close as reasonably practicable given gate and other operating limitations:

Canyon Dam: 0.5 ft/hr up and down, in all months, as measured at NF-2; and  
Belden Dam: 0.5 ft/hr up and down, in all months, as measured at NF-70.

Changes in Canyon Dam streamflow releases, because of gate size and other factors, may exceed the Ramping Rate in any particular hour, but Licensee shall make a Good Faith effort as defined in Paragraph 1.5 of the Relicensing Settlement Agreement to return to the overall Basic Ramping Rate in the next and subsequent hours.

B. Revision to Ramping Rates: In the event that studies or monitoring during the term of the License identify the need for modifications to ramping rates, the Licensee shall consult with the Forest Service, United States Fish and Wildlife Service, NOAA Fisheries, California Department of Fish and Game, State Water Resources Control Board and other Relicensing Settlement Agreement signatories to establish more appropriate rates. New Ramping Rates for Pulse Flows shall not result in an increase in the total volume of water that is required to be released when the new Ramping Rates are applied to geomorphic Pulse Flows. The total volume of water released for a recreation river flow release shall not exceed 110% of the flow volume resulting from the releases specified in Condition 28, Table B when the new Ramping Rates are applied. For example, the volume of water released in addition to the Minimum Streamflow during a recreation river flow release in July of a Normal water year is 471 AF when the Basic Ramping Rate is applied to the required 750 cfs release amount set forth in Condition 28, Table B. If the Basic Ramping Rate is revised, the volume of water released in addition to the Minimum Streamflow for that same month when the revised Ramping Rate is applied shall not exceed 518 AF. Depending upon how the Basic Ramping Rate is revised, the volume limitations described above may require a corresponding change in the magnitude or duration of the scheduled Pulse Flows or recreation river flow release.

C. Unit Trips: Licensee shall make a Good Faith effort as defined in Paragraph 1.5 of the Relicensing Settlement Agreement to control streamflow releases to stay within the Basic Ramping Rates but shall not be in violation of the Basic Ramping Rates in the

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event that the specified rates are exceeded due to a unit tripping off-line, and subsequent restoration, or other conditions beyond the reasonable control of Licensee.

**7. Belden Block Loading.** To (a) minimize the frequency of fluctuation in the river stage and (b) help meet Basic Ramping Rates at downstream Licensee dams, Licensee shall Block Load Belden Powerhouse at times when the Rock Creek Dam is spilling water in excess of the minimum streamflow required under the FERC license for Project No. 1962 but less than 3,000 cfs. Under Block Loading, a unit's generation level is not cycled but rather set at a constant level for a predetermined period of time. Licensee shall not be required to implement or continue this operation if the gate controls at downstream Licensee dams are shown to be able to meet the Ramping Rates specified in the Project No. 1962 license without such Block Loading. If the draft through Belden Powerhouse needs to be increased or decreased from Block Loading levels between 0 and 40 MW, Licensee shall, to the extent reasonably feasible, make adjustments to Belden Powerhouse drafts so as not to exceed ramping rates specified in the Project No. 1962 license. Because of operational constraints that limit Licensee's ability to operate Belden Powerhouse between 40 and 70 MW, Licensee shall not be required to comply with the Basic Ramping Rates if a transition through these MW levels is needed. Licensee shall attempt to accomplish this transition with as little impact on the Basic Ramping Rates as reasonably feasible.

**8. Lower Butt Creek Streamflow and Habitat Monitoring.** In addition to maintaining gages at NF-2 and NF-70 as provided in Paragraph 5 above, Licensee shall rehabilitate, as necessary, and maintain an existing streamflow gaging station located on Lower Butt Creek designated by Licensee as NF-9. An approximate rating curve shall be maintained with periodic spot checks and re-rating as necessary. The gage and the data collected at the gage shall not be required to meet USGS standards. This gage shall be read each year on or about April 1, June 1, August 1 and October 1.

Within 12 months of license issuance, Licensee in consultation with Forest Service, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, California Department of Fish and Game, and other Relicensing Settlement Agreement Signatories, shall develop and submit to the Commission for its approval a plan to monitor and assess aquatic habitat quality in Lower Butt Creek between Butt Valley Dam and the confluence with the NFFR. This monitoring plan shall include evaluation of habitat quality at intervals of 3 to 5 years, depending on Water Year Type and other appropriate factors. If the Licensee, in consultation with the Forest Service, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board and California Department of Fish and Game, concludes that habitat quality in Lower Butt Creek has degraded and that Pulse Flows would provide a significant benefit, then Licensee shall implement Pulse Flows as described in Paragraph 4 above.

If the monitoring plan data demonstrates that the Lower Butt Creek weir is blocking fish passage, then within one year after the evaluation of monitoring plan data that confirms fish passage blockage Licensee shall remove or modify the existing weir to allow fish passage.

## **Condition 26-Seneca, Butt Valley Creek, and Belden Reach Biological Monitoring**

Within one year of license issuance, and after consultation with the Forest Service, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, California Department of Fish and Game and other Relicensing Settlement Agreement signatories, the Licensee shall file with the Commission a fish population, benthic macroinvertebrate, and amphibian monitoring plan approved by the Forest Service. The plan shall outline sampling to be conducted in the Upper North Fork Feather River Project, Seneca, Butt Creek and Belden bypass reaches. The plan shall include, at a minimum, the following components: (a) between years 10 and 12 after license issuance, Licensee shall initiate a cooperative aquatic monitoring program with the Forest Service, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, and California Department of Fish and Game. Sampling shall occur every two years over a six-year period, for a total of three sampling efforts. The program shall include monitoring of fish populations including condition and trend and benthic macroinvertebrates in at least three sites in the Belden and Seneca Reaches. Benthic macroinvertebrate monitoring shall include population robustness, feeding group and tolerance/intolerance trend monitoring. Sampling may be deferred to the following year in the event of a Critically Dry Year; (b) the amphibian monitoring plan for the Seneca, Butt Creek and Belden bypass reaches shall include targeted monitoring of Forest Service Sensitive amphibians conducted at three-year intervals beginning no later than three years following license issuance. Should target amphibians be located in Project reaches, focused annual monitoring of population health, life stages, reproductive success, and distribution will be required.

The Licensee shall provide results of monitoring and any flow change recommendations to the Commission, Forest Service, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, California Department of Fish and Game and other Relicensing Settlement Agreement signatories in a draft technical report prepared by June of the year following completion of each sampling effort. The Licensee shall finalize the technical report by the following December. In addition to describing the results, the report shall compare the results with those of previous surveys. The fish-based sampling shall discuss implications regarding trends in fish abundances. The benthic macroinvertebrate sampling report shall enumerate any changes over time regarding the composition of functional feeding groups, overall population heterogeneity and robustness, and pollution tolerance/intolerance trends.

At the conclusion of the aquatic monitoring program described in subsection (a) above, the Licensee, Forest Service, California Department of Fish and Game, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, Plumas County and other interested Relicensing Settlement Agreement signatories shall meet to review the results of the monitoring. If, after review of the data collected during the monitoring, the parties specified above in this paragraph determine that aquatic species or other ecological attributes may benefit from modifications to the Minimum Streamflows set forth in Tables A-1 and A-2 of Condition 25, the parties specified above in this paragraph shall evaluate and determine whether such modifications: (1) can be implemented within Licensee's operational capabilities; (2) will maintain the total annual volume of water that has been allocated for

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Minimum Streamflows in any given Water Year Type as set forth in Tables A-1 and A-2 of Condition 25; and (3) will not adversely impact other Beneficial Uses, including hydroelectric power generation, Lake Almanor surface water elevation, and recreation. If all Relicensing Settlement Agreement signatories concur and propose revised Minimum Streamflows that meet these criteria, Licensee shall file the proposal with the Commission for its approval.

### **Condition No. 27-Water Year Type**

Reservoir operating levels, Minimum Streamflows, Pulse Flow occurrence, and recreation flows may vary depending on the predicted magnitude of the annual runoff from the river basin. Water years have been classified into four Water Year Types based on the California Department of Water Resources (DWR) records of annual inflow to Lake Oroville (Oroville) from 1930-1999: Wet, Normal, Dry, and Critically Dry (CD). Licensee shall determine Water Year Type based on the predicted, unimpaired inflow to Oroville and spring snowmelt runoff forecasts provided by Licensee and DWR each month from January through May. The Water Year Types are defined as follows:

- Wet: Greater than or equal to 5,679 thousand acre-feet (TAF) inflow to Oroville.
- Normal: Less than 5,679 TAF, but greater than or equal to 3,228 TAF inflow to Oroville.
- Dry: Less than 3,228 TAF, but greater than or equal to 2,505 TAF inflow to Oroville.
- CD: Less than 2,505 TAF inflow to Oroville.

Licensee shall make a forecast of the Water Year Type on or about January 10<sup>th</sup>, notify the Forest Service, California Department of Fish and Game, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, Plumas County, and other Relicensing Settlement Agreement signatories within 15 days, and operate the Project based on that forecast for the remainder of that month and until the next forecast. New forecasts will be made on or about the tenth of February, March, April, and May after the snow surveys are completed, and operations will be changed as appropriate. In making the forecast each month, average precipitation conditions will be assumed for the remainder of the water year. The May forecast shall be used to establish the Water Year Type for the remaining months of the year and until the next January 10, when forecasting shall begin again. Licensee shall provide notice to the Commission, Forest Service, State Water Resources Control Board, California Department of Fish and Game, United States Fish and Wildlife Service, NOAA Fisheries, Plumas County, and other Relicensing Settlement Agreement signatories of the final Water Year Type determination within 15 days of making the determination.

### **Condition No. 28-Recreation River Flow Management**

**1. Recreation River Flow Technical Review Group.** Licensee shall, within 6 months after license issuance, establish a Recreation River Flow Technical Review Group (TRG) for the

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purpose of consulting with Licensee in the design of recreation and resource river flow management and monitoring plans, review and evaluation of recreation and resource data, and in the development of possible recreation river flows in the Belden Reach. Licensee shall inform the Forest Service, California Department of Fish and Game, State Water Resources Control Board, United States Fish and Wildlife Service, NOAA Fisheries, National Park Service, Plumas County, and other signatories of the Relicensing Settlement Agreement of the formation of the TRG and seek their participation in the TRG. TRG meetings shall be open to and accept comments from the public. The Licensee shall maintain, and make public, records of TRG meetings, and shall forward those records with any recommendations to the Forest Service, State Water Resources Control Board and the Commission. The Licensee shall establish communication protocols in consultation with the TRG and Forest Service to facilitate interaction between TRG members, which allow for open participation, consultation with independent technical experts, and communication between all TRG participants.

**2. Recreation Flow Implementation Plan.** Licensee shall implement the following plan.

A. Determination to Proceed with Test Flows: Within six months after license issuance, Licensee shall convene the TRG to evaluate the existing available ecological information regarding recreation river flows and make a determination whether (i) sufficient information exists to conclude that recreation river flows will result in unacceptable impacts on sociological or ecological resources; or (ii) recreation test river flows as prescribed in Paragraph 3, Table B below should be conducted in order to further evaluate the ecological and social effects of recreation river flows in the Belden Reach. If the TRG determines that recreation test river flows should be conducted, test flows shall not exceed the frequency, magnitude or duration of flows prescribed for any given month in Paragraph 3, Table B below. Within six months of convening the TRG, Licensee shall forward the TRG recommendations regarding recreation test river flows to the Forest Service and State Water Resources Control Board.

B. Approvals to Proceed with Test Flows: If the TRG recommends that recreation test river flows in the Belden Reach should be conducted, Licensee shall request the Forest Service and State Water Resources Control Board to consult with appropriate state and federal agencies including the United States Fish and Wildlife Service, NOAA Fisheries, Licensee, tribal governments, and other interested Relicensing Settlement Agreement signatories prior to approving, denying or modifying the TRG's proposal. If the Forest Service and State Water Resources Control Board approve a proposed schedule for recreation river test flows that does not exceed the frequency, magnitude or duration of the flows prescribed for any given month in Paragraph 3, Table B below, Licensee shall submit the proposal to the Commission for its approval.

C. Conducting Test Flows: Upon approval from the Commission, Licensee shall conduct recreation test river flows as prescribed in Paragraph 3, Table B below for a 3-year period. D. Monitoring: Licensee shall prepare and submit to the Forest Service and State Water Quality Control Board for their review and approval, concurrent with the TRG recommendation, a Belden Reach Recreation Test River Flow Evaluation Plan.

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Upon Forest Service and State Water Resources Control Board approval, Licensee shall file the plan with the Commission for its approval. The plan shall be designed to evaluate the effects of the recreation test river flow releases on ecological and social resources, and the metrics to be used in this determination. Upon approval of the plan by the Commission, Licensee shall implement the plan during the 3-year recreation test flow period.

E. Determination of Continued Flows: After the 3-year recreation test river flow period, Licensee shall convene the TRG to evaluate the existing available ecological and social information. Licensee shall request that the TRG make a recommendation regarding whether recreation river flows should be continued in order to meet the river flow management for recreation objective. If the TRG determines that recreation river flows should continue, the flows shall not exceed the frequency, magnitude or duration of flows prescribed for any given month in Paragraph 3, Table B below.

F. Approval of Results of Determination of Continued Flows: Licensee shall forward to the Forest Service and State Water Quality Control Board any recommendation by the TRG to continue recreation river flows. Licensee shall request that the Forest Service and State Water Resources Control Board consult with appropriate state and federal agencies including United States Fish and Wildlife Service, NOAA Fisheries, Licensee, tribal governments, and other interested Relicensing Settlement Agreement signatories prior to approving, denying or modifying the TRG's proposal. If the Forest Service and State Water Resources Control Board approve a proposed schedule for continued recreation river flows that does not exceed the frequency, magnitude or duration of the flows prescribed for any given month in Paragraph 3, Table B below, Licensee shall submit the proposal to the Commission for its approval.

**3. Recreation River Flows.** Subject to the conditions of Paragraph 2 above, Licensee shall implement the following recreation river flow schedule and other provisions presented in Table B, Belden Reach Recreation River Flow Schedule.

**Table B – Belden Reach Recreation River Flow Schedule \***

Month	Release amount in Cubic Feet per Second (cfs)		Release Days per Month				Boats Per Day Triggers	
	Dry/ Cri Dry	Normal/ Wet	Crit. Dry Start	Crit. Dry Cap	Dry/ Normal/ Wet Start	Dry/ Normal/ Wet Cap	Up	Down
July	650	750	1 day	1 day	1 day	2 days	>100	<100
Aug	650	750	1 day	1 day	1 day	2 days	>100	<100
Sep	650	750	1 day	1 day	1 day	2 days	>100	<100
Oct	650	750	1 day	1 day	1 day	2 days	>100	<100

\* During Normal and Wet water years, recreation river flow releases at Belden Dam and measured at NF-70 shall occur between the hours of 10 AM and 4 PM for the first release day of each month, and between the hours of 10 AM and 2 PM for the second release day of each month. During Dry and Critically Dry water years, recreation river flow releases shall occur between the hours of 10 AM and 1 PM for both release days.

A. Recreation Flow Calendar: Licensee shall post, through a third party or other mechanism, an annual recreation flow calendar that schedules the initial recreation flow day per month. Licensee shall conduct an annual planning meeting with State Water Resources Control Board, Forest Service, and other interested Relicensing Settlement Agreement signatories each year in March to discuss expected Water Year Type, results of monitoring efforts, Licensee maintenance needs that may conflict with recreation flow releases, and other relevant issues.

B. Additional Flow Days: The desired date of the month for any additional recreation river flow release days triggered by number of boats per day as described in Paragraph 3(D) below will be recommended by the TRG and Forest Service based on evaluation of social and ecological considerations.

C. Recreation River Flow Postponement:

1. Emergencies: In the event of an Emergency as defined in Paragraph 1.5 of the Relicensing Settlement Agreement, Licensee may postpone any scheduled recreation river flow release. Licensee shall provide as much notice as reasonably practicable under the circumstances.

2. Postponed Recreation River Flows: To the extent reasonably practicable, Licensee shall reschedule postponed recreation river flow releases as recommended by the TRG and Forest Service.

D. Triggers for Adjustments: During scheduled recreation river flow releases, Licensee shall count observed boater use in number of boats per day to determine whether recreation river flow release days should be added or subtracted. All boats will be counted as 1 boat except for rafts 12' or greater in length will be counted as 2 boats. All boats observed on the Belden Reach for any part of a given day will be counted. If the number of boats per day on the first recreation river flow release day for a month exceeds 100 boats per day, one day of recreation river flow release shall be added to the recreation river flow release schedule in that month the next year. If the number of boats per day is less than 100 boats per day for both the recreation river flow releases in one month, one day of recreation river flow release shall be subtracted from the recreation river flow release schedule for that month in the next year. Recreation river flow releases shall not decrease below 1 day per month and shall not exceed the cap defined in Table B above. Recreation river flow release days shall not be added or subtracted during any period of recreation test river release flows conducted pursuant to Paragraph 2(C) above.

The Licensee shall develop and implement a visitor survey for up to three years to determine if visitors would choose to return to recreate on the Belden Reach based on their experience related to number of boats encountered on the river. The visitor survey questionnaire and methodology shall be statistically valid and approved by the TRG and Forest Service. Licensee shall request that the TRG and Forest Service evaluate the survey results and other data to determine if the trigger for adding/deleting days, based on number of boats per day, should be amended based on this analysis.

E. Ramping Rates: In implementing recreation river flow releases, Licensee shall apply the Basic Ramping Rates as defined in Paragraph 6(A) of Condition 25.

F. Streamflow Information: Through a third party or other mechanism, Licensee shall make available on the Internet, a calendar that lists the dates of the March Pulse Flow in the Seneca Reach and any scheduled Pulse Flow or recreation river flow releases in the Belden Reach. The calendar shall state the timing and magnitude of the scheduled flow release. The March Pulse Flow release in the Seneca Reach will be posted by February 15 and the scheduled summer releases in the Belden Reach shall be posted by May 15. If the Licensee anticipates releasing flows in the Seneca or Belden Reaches of a similar magnitude and duration as a scheduled Pulse Flow, it shall post an estimate of the release magnitude and duration of the flow.

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## **Condition No. 29-Belden Interagency Recreation River Flow Management Plan**

If a determination is made to proceed with scheduled recreation river flow releases, Licensee, prior to the start of the first full recreation season shall coordinate with the Forest Service, Plumas County, and California Department of Transportation to develop a Memorandum of Understanding to produce a Belden Interagency Recreation River Flow Management Plan. The Plan shall address management and integration of recreation opportunities provided by the Belden Recreation River Flow release with other river recreation opportunities in the watershed. The Plan shall address establishment of visitor capacity thresholds, maintenance of facilities, signage, traffic management and monitoring. This Plan and Memorandum of Understanding would not be financially binding, but would document agency roles, responsibilities, and intentions related to river recreation management.

If after the Belden recreation river test flow evaluation period, recreation river flow releases in accordance with Condition 28 are not continued, the Memorandum of Understanding and Plan would be terminated.

## **Condition No. 30-Reservoir Operation**

**1. Water Level Management.** To meet the ecological, cultural, aesthetic, social, economic, recreational and Project operational needs, Licensee shall operate Project reservoirs in accordance with the following provisions. Lake level is defined as surface water elevation, expressed in PG&E datum and measured at Canyon Dam, Butt Valley Dam, and Belden Forebay Dam. PG&E datum is 10.2 feet lower than the USGS datum. All elevations noted within this Condition are PG&E datum.

**2. Lake Almanor Water Levels.** Lake Almanor is a multi-season reservoir that typically fills from January through June and is then drafted from July through December. Licensee shall operate Lake Almanor as follows:

A. Wet and Normal Water Years: Under Wet and Normal Water Year Types, Licensee shall operate Lake Almanor so that by May 31, the water surface elevation is at or above 4485.0 feet, corresponding to approximately 908,000 acre-feet (AF). From June 1 through August 31, Licensee shall operate Lake Almanor so that the water surface elevation is at or above 4485.0 feet, corresponding to approximately 908,000 AF.

B. Dry Water Years: Under Dry Water Year Types, Licensee shall operate Lake Almanor so that by May 31, the water surface elevation is at or above 4483.0 feet, corresponding to approximately 859,000 AF. From June 1 through August 31, Licensee shall operate Lake Almanor so that the water surface elevation is at or above 4480.0, corresponding to approximately 787,000 AF.

C. Critically Dry Water Years: Under Critically Dry Water Year Types, the Licensee shall operate Lake Almanor so that by May 31, the water surface elevation is at or above

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4482.0 feet, corresponding to approximately 835,000 AF. From June 1 through August 31, Licensee shall operate Lake Almanor so that the water surface elevation is at or above 4480.0 feet, corresponding to approximately 787,000 AF.

**3. Butt Valley Reservoir Water Levels.** *Under all Water Year Types, Licensee shall operate Butt Valley Reservoir so that minimum water surface elevation from June 1 through September 30 is at or above elevation 4120.0 feet, corresponding to approximately 32,000 AF and from October 1 through May 30, is at or above elevation 4115.0 feet, corresponding to approximately 24,500 AF.*

**4. Belden Forebay Water Levels.** Under all Water Year Types, Licensee shall operate Belden Forebay so that the minimum water surface elevation is 2905.0 feet, corresponding to approximately 300 AF.

**5. Multiple Dry Water Years.** In the event of multiple, sequential Dry or Critically Dry Water Year Types, Licensee shall be allowed to decrease surface water elevations beyond those specified in Paragraphs 2 through 4 above. By March 10 of the second or subsequent Dry or Critically Dry water year and the year following the end of a sequence of Dry or Critically Dry water years, Licensee shall notify the Forest Service, California Department of Fish and Game, United States Fish and Wildlife Service, State Water Resources Control Board, and Plumas County of Licensee's drought concerns. By May 1 of these same years Licensee shall consult with representatives from the Forest Service, California Department of Fish and Game, United States Fish and Wildlife Service, NOAA Fisheries, State Water Resources Control Board, Plumas County, and other signatories to the Relicensing Settlement Agreement to discuss operational plans to manage the drought conditions. If the parties specified above agree on a revised operational plan, Licensee may begin implementing the revised operational plan as soon as it files documentation of the agreement with the Commission. If unanimous agreement is not reached, Licensee shall submit the proposed plan to the Commission, as well as both assenting and dissenting comments, should they exist, and request expedited approval.

**6. Temporary Modifications.** Licensee may temporarily modify the minimum water surface elevations specified in this Condition upon unanimous agreement between Licensee, Forest Service, State Water Resources Control Board, California Department of Fish and Game, United States Fish and Wildlife Service, NOAA Fisheries, Plumas County, and other Relicensing Settlement Agreement signatories or, if a timely agreement is deemed not possible by Licensee, upon Commission approval of a proposal filed by Licensee. Any agreement reached by the parties specified above may be implemented as soon as Licensee files documentation of the agreement with the Commission. If no agreement is reached by the parties specified above, the Licensee shall provide a proposal to the Commission for approval, such proposal shall contain any comments or recommendations received from the Forest Service, State Water Resources Control Board, United States Fish and Wildlife Service, NOAA Fisheries, California Department of Fish and Game and Plumas County. Possible conditions that may warrant temporary modifications include substantial maintenance or repair work on Project facilities.

**7. Emergencies.** In the event of an Emergency as defined in Paragraph 1.5 of the Relicensing Settlement Agreement, Licensee is authorized to take such immediate action as may be necessary to reduce the risk.

**8. Exercise of Licensee's Water Rights.** Nothing in this Condition is intended to prevent or reduce Licensee's ability to fully exercise its water rights for storage and direct diversion at its facilities.

**9. Maximum Water Surface Elevation.** In addition to the management procedures contained in this Section, Licensee shall take such reasonable actions as may be prudent to keep the water surface elevation in Lake Almanor from exceeding elevation 4494.0 feet unless a higher level is approved by the Commission and the California Department of Water Resources, Division of Safety of Dams.

**10. Implementation of Water Surface Elevation Requirements.** Licensee shall implement the requirements of this Condition within six months after license issuance.

**11. Lake Almanor Information.** Licensee shall make available daily midnight storage and water surface elevation of Lake Almanor, rounded to the nearest 100 AF and tenth of a foot, respectively, delayed between approximately 7 and 10 days, on the Internet through a third party or other mechanism.

**12. Annual Meeting With Plumas County.** Licensee shall meet annually with a committee appointed by the Plumas County Board of Supervisors. This meeting shall be held between March 15 and May 15 to allow Licensee to inform the committee about Lake Almanor water elevation levels predicted to occur between May 1 and September 30. In addition, should Licensee forecast that its obligation to deliver water to the State of California and Western Canal Water District pursuant to the January 17, 1986 agreement will require Licensee to deviate from the Lake Almanor water elevation levels set forth in this Condition, Licensee shall schedule an additional meeting with the committee within one month of the forecast.

### **Condition No. 31-Wildlife Habitat Enhancement**

Within one year of license issuance, Licensee shall file with the Commission, a Wildlife Habitat Enhancement Plan (Plan) to enhance wildlife habitat. The Plan shall be developed in consultation with the Forest Service, United States Fish and Wildlife Service, California Department of Fish and Game, State Water Resources Control Board, and Plumas County. *The enhancement efforts described in the Plan shall be limited to lands owned by the Licensee on the shoreline of Lake Almanor from Last Chance Campground westward to approximately the northern edge of the flood control channel south of the Chester Airport. The Plan shall be designed to benefit a variety of sensitive biological resources including rare plants, wetlands, streamside riparian communities, cultural resources and sensitive wildlife habitat. The primary elements of the Plan shall be fencing and vehicle exclusion*

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*measures that will allow continued public foot access to the area to be implemented within two years of license issuance. Licensee's obligation to fund enhancement efforts in the Plan shall be limited to an initial investment of \$20,000 (constant dollars not subject to escalation) and an ongoing annual maintenance investment of \$5,000 (2004 dollars escalated as defined in Paragraph 4.4.5 of the Relicensing Settlement Agreement). The Plan shall include a provision for periodic review of enhancement efforts with the agencies noted above and shall include procedures for documenting initial and ongoing enhancement efforts.*

## **Condition No. 32-Recreation**

Licensee shall implement the following recreation facility development, operation and maintenance, monitoring, plan review and revision, resource integration, and I&E programs over the term of the license as stipulated below. Within one year of license issuance, Licensee shall finalize the License Application's Draft UNFFR Recreation Resource Management Plan (RRMP) in consultation with the Forest Service and Plumas County for the purpose of describing the implementation of each of the following programs.

**1. Recreation Facilities Development Program.** The Licensee shall implement the recreation facility enhancement measures described in this Section after license issuance and during the license term, based on target completion dates indicated below and Recreation Monitoring Indicators and Standards contained in the Draft RRMP. Improvements shall be made. The term "Accessible" below refers to ADA-accessibility improvements that shall be made in accordance with the Americans with Disability Accessibility Guidelines (ADAAG) at the time the recreation facilities are upgraded or constructed. All Forest Service recreation facilities shall be constructed in accordance with ADAAG at the time improvements are made.

### **A. Initial License Issuance Recreation Enhancement Measures**

Licensee shall initiate and complete implementation of the following recreation measures within the specified target completion dates, as reasonably practicable.

#### **1. Lake Almanor**

**a. Last Chance Family and Group Campground:** *Target completion is 1-3 years after license issuance.*

*In accordance with ADAAG, Licensee shall modify two campsites and existing toilet buildings and provide an access route leading to the nearby creek (150 feet.)*

**b. Rocky Point Campground and Day Use Area:** *Target completion is 5-10 years after license issuance.*

*i. Licensee shall convert Loop 3 overflow camping area into a day use swim area containing an approximately 1-acre sand beach above the high water level*



- (4,494-foot elevation, PG&E datum), swimming delineator, paved parking area for 35 to 40 vehicles, and double-vaulted toilet building.*
- ii. Licensee shall relocate the twenty campsites in the Loop 3 overflow area to the Loop 1 camp overflow area and provide a new double vaulted toilet building at this location.*
  - iii. Licensee shall provide a new entrance kiosk, three fee-based shower facility buildings (one for each loop) with hot water, and bear-proof food lockers at each of the 151 campsites within the campground.*
  - iv. Licensee shall replace older Klamath stoves (a low-style camp stove with a stovepipe) with campfire rings.*
  - v. Licensee shall revegetate or harden significantly disturbed areas where erosion has been caused by pedestrian or vehicle traffic.*
  - vi. Licensee shall implement the following Accessibility improvements in accordance with ADAAG:*
    - a) Modify 10 campsites (four at Loop 1, three at Loop 2, and three at Loop 3).*
    - b) Provide an Accessible route to the high water level (4,494-foot elevation, PG&E datum) at the sandy beach.*
    - c) Modify the existing campground library box, telephones, and the envelope box at the pay station and provide appropriate Accessible access routes.*
    - d) Modify existing water faucets near Accessible toilets and campsites.*
    - e) Provide Accessible routes to the toilet buildings near the campground entrance and near campsite # 100.*
    - f) Relocate the interior pay station directly across the road to a level, firm, and stable surface (Loop 2).*

**c. Forest Service Almanor Shoreline Facilities:** Target completion 1-13 years after license issuance.

- i. Licensee shall provide the Forest Service with 40 percent matching funds up to a total maximum of \$5,000,000 (2004 dollars escalated as defined in Paragraph 4.4.5 of the Relicensing Settlement Agreement), for the Forest Service to construct recreation improvements at the following FS-owned recreation facilities: Almanor Family Campground, Almanor Group Campground, Almanor Amphitheater, Almanor Picnic Area, and Almanor Beach. Recreation improvements will include reconstruction of existing facilities and construction of new facilities. During the first thirteen years of the new license term, Licensee's annual obligation to provide matching funds shall be triggered by Forest Services' ability to obtain its share of matching fund contributions. Although the Forest Service will attempt to maintain the 40/60 percent split each year, Forest Service may elect to require Licensee to provide a greater or lesser percentage of matching funds in any given year provided that the total cost to Licensee to fund recreation improvements at the above Forest Service-owned recreation facilities shall not exceed \$5,000,000 (2004 dollars escalated as defined in Paragraph 4.4.5 of the Relicensing Settlement Agreement). Forest Service

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shall provide Licensee with its preliminary annual funding request no later than January 15 of the previous year and final funding request no later than April 15 of the previous year. Forest Service will bill Licensee when FS share of funds have been allotted. Licensee shall make actual payments upon receipt of billing by the Forest Service.

- ii. If, at the end of the thirteenth year after the license is issued, the Licensee has not paid the Forest Service the maximum \$5,000,000 (2004 dollars escalated as defined in Paragraph 4.4.5 of the Relicensing Settlement Agreement) because the Forest Service has been unable to obtain its corresponding share of the matching funds, then Licensee shall use the remaining funds (the difference between the amount Licensee has already paid the Forest Service in matching funds and the \$5,000,000 cap (2004 dollars escalated as defined in Paragraph 4.4.5 of the Relicensing Settlement Agreement)) for recreation improvements at the *Almanor Beach and East Shore Family Campground, which shall include the addition of up to 28 campsites in a third loop as funding permits*. The Forest Service will be responsible for all design and construction of recreation improvements at Forest Service facilities, and will consult with the Licensee prior to adoption of the final design. The Forest Service will maintain ownership of the facilities both before and after completion of construction of the recreation improvements.
- iii. Forest Service intends to use the matching funds provided by Licensee as described in the preceding paragraph to construct the following recreation improvements. Forest Service may adjust these construction activities depending upon the ability of the Forest Service to obtain its share of the matching funds, site limitations, or other appropriate factors.
  - a) **Almanor Family Campground and Amphitheater:** Reconstruct the North and South loops, including general improvement of travel ways and spurs, upgrade sanitation facilities, provide utility hook ups, and construct amphitheater.
  - b) **Almanor Group Campground:** Construct camping loops, group gathering area including pavilion, trailer dump station, and rehabilitate, restore and revegetate decommissioned overflow and group camp.
  - c) **Almanor Picnic Area:** Define and upgrade picnic sites, shade structures, and interpretation/orientation facilities.
  - d) **Almanor Beach:** Expand sandy beach area, expand parking area, and construct swim buoy.

**d. East Shore Group Camp Area:** *Target completion is 1-3 years after license issuance.*

- i. *Licensee shall convert the existing East Shore Picnic Area to a group reservation camp area that shall accommodate one group of 16 RVs or two groups of eight RVs. The entrance road shall be widened and internal road circulation shall be improved to accommodate RVs.*

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- ii. Licensee shall provide one Accessible parking space near the existing double-vaulted toilet building and an Accessible access route to the nearby trash receptacles.
- iii. Licensee shall provide bear-proof food lockers at each of the 16 sites, a non-paved, non-Accessible trail down to the shoreline, including switchbacks and stairs, and erosion control measures.

**e. North Shore Public Boat Launch:** Target completion is 3-5 years after license issuance.

- i. Licensee shall provide a new and expanded public boat launching facility at North Shore Campground. This facility shall include paved parking for 40 single vehicles with trailers and 12 single vehicles, a double-vaulted toilet building, and a boarding float. In addition, Licensee shall dredge and maintain along the existing submerged river channel to provide an approximate 1,000-ft long, 50-ft wide, and 6-ft deep boat channel that provides boat access to approximately the 4,480-foot elevation (PG&E datum). The boat launch will be open for public use from April 1 to December 1 when the lake's elevation is at or above the 4,480-foot elevation (PG&E datum) and as snow on the ground permits.
- ii. Licensee shall provide public access to the boat launch facility along an abandoned portion of Highway 36 located along the north side of the campground to reduce traffic impacts to the campground.
- iii. Licensee shall relocate 22 campsites within the Project boundary that will be impacted by the reconstructed boat launch facility.

**f. Stover Ranch Day Use Area:** Target completion is 3-5 years after license issuance. The Licensee shall develop the Stover Ranch Day Use Area to provide improved Lake Almanor shoreline access for Chester residents. This day use area shall include gravel parking for 10 to 20 vehicles, a double-vaulted toilet building, four picnic tables, a non-paved trail to the shoreline, and an interpretive sign. In addition, one RV site shall be constructed to accommodate a new seasonal Lake Almanor caretaker. The development of the Stover Ranch site shall be coordinated with the Chester Public Utility District and the Almanor Recreation and Park District.

**g. Marvin Alexander Beach:** Target completion is 1-3 years after license issuance. The Licensee shall assume management responsibility of the Pacific Service Employees Association (PSEA) Swim Beach and expand and improve the existing sandy beach to a 0.4-acre area above the high water level (4,494 foot elevation, PG&E datum). In addition, Licensee shall provide an improved gravel parking area for 30 to 45 single vehicles, replace the two single-vault toilet buildings, ten picnic tables, and provide a new swimming delineator. This PSEA Swim Beach shall be renamed to the Marvin Alexander Beach.

**h. Canyon Dam Day Use Area:** Target completion is 1-3 years after license issuance for this Licensee facility.

- i. The Licensee shall provide an approximately 0.3-acre sandy beach above the high water level (4,494 foot elevation, PG&E datum), swim area delineator, an

*informational kiosk, improved vehicle circulation, and eight new Accessible picnic tables at the Canyon Dam Day Use Area.*

- ii. The Licensee shall modify eight existing picnic tables to make them Accessible, provide an Accessible parking space, and provide an Accessible route to the high water level (4,494-foot elevation, PG&E datum) at the swim beach area in accordance with ADAAG.*
- iii. The Licensee shall reserve approximately 1 acre of land adjacent to the Canyon Dam Day Use Area for potential future recreation development during the license term.*

***i. “East Shore” Day Use Area:*** *Target completion is 1-5 years after license issuance. Licensee shall designate a swimming area in the existing cove adjacent to the proposed new East Shore Campground. This day use area shall contain up to five picnic tables, non-paved shoreline access trails, a single vaulted toilet building, and parking for 10 to 20 vehicles.*

***j. Westwood Beach:*** *Target completion is 1-3 years after license issuance. The Licensee shall provide a gravel parking area for 10 vehicles, six picnic tables, an Accessible single vaulted toilet building, an approximately 0.1-acre sandy beach, a swim delineator, and directional signage at the Westwood Beach. Licensee shall also provide shoreline erosion control measures to protect the shoreline from wind caused wave action.*

***k. Stumpy Beach:*** *Target completion is 1-3 years after license issuance. The Licensee shall provide five picnic tables, directional signage, an approximately 0.7-acre sandy beach above the high water level (4,494 foot elevation, PG&E datum), and a swim delineator at Stumpy Beach. Licensee shall provide a single vaulted toilet building, if allowed by Plumas County and California Department of Transportation set back regulations; otherwise, Licensee shall provide a seasonal portable toilet building. Eight to 10 paved parking spaces parallel to Highway 147 shall be provided with trails connecting to the beach’s northern and southern portions. The southern trail shall be Accessible where feasible and the northern trail shall be non-paved. In addition, Licensee shall provide four benches for visitors to view Lake Almanor and the surrounding mountains. Licensee shall also provide shoreline erosion control measures to protect the shoreline from wind caused wave action.*

***l. Catfish Beach:*** *Target completion is 3-5 years after license issuance. Licensee shall make a Good Faith effort as defined in Paragraph 1.5 of the Relicensing Settlement Agreement to negotiate a reasonable easement across private lands to provide public road access and install a single vaulted toilet building to the Catfish beach area. Licensee shall not be required to seek to condemn the easement if the negotiations are unsuccessful. If the Licensee is able to negotiate the easement, Licensee shall monitor and maintain the toilet building and the site’s cleanliness through arrangements with the North Shore Campground managers, the Stover Ranch caretaker, or other appropriate means.*

**m. Almanor Scenic Overlook:** *Target completion is 1-5 years after license issuance. Licensee shall provide an Accessible parking space and route to the existing Accessible double-vaulted toilet building at the overlook and conduct vegetative brushing and clearing, as needed, to maintain views of Lake Almanor, Mt. Lassen and the Canyon Dam.*

**n. Southwest Shoreline Access Zone:** Target completion is 1-5 years after license issuance.

The Licensee, in consultation with the Forest Service, shall provide four shoreline access points at existing informally used locations along Lake Almanor's southwest shoreline between Prattville and Canyon Dam. These access areas shall provide vehicle access at or above the 4,494-foot elevation (PG&E Datum) and serve as pedestrian access areas to the adjacent shoreline. The Licensee shall provide four gravel parking areas that provide parking for up to 4 to 8 vehicles at two areas and 10 to 20 vehicles at the other two areas, vehicle barriers, regulatory, interpretive and informational signs, gravel access roads, and, if appropriate, single-vaulted toilet buildings at these access areas. Licensee shall close and rehabilitate other user-created vehicular access routes to the southwest shoreline as depicted in Site Plan 15 contained in the Draft RRMP and in consultation with the Forest Service.

**o. Camp Connery:** *Target completion 1-5 years after license issuance. Licensee shall provide an Accessible parking space and a new bunk house cabin with Accessible toilet and user fee based hot shower, retrofit the existing telephone position and water faucet features to meet the ADAAG.*

## **2. Butt Valley Reservoir**

**a. Powerhouse Trails:** *Target completion is 5-10 years after license issuance. Licensee shall provide two improved angler access trails to two locations near the Butt Valley Powerhouse. The first trail shall be non-paved and approximately 200- feet constructed from the existing gravel parking area next to the Butt Valley Powerhouse down the steep slope east of the powerhouse to the levee below. If needed, stairs shall be constructed at this location. The second powerhouse trail shall be Accessible (compact base rock) and originate from an existing pullout along the Prattville-Butt Valley Road near the Butt Valley Powerhouse and extend approximately 700 feet to the eastern shoreline of the inlet near the levee. A new, compacted base rock trailhead parking area with barriers shall be developed for this trail.*

**b. Ponderosa Flat Campground:** *Target completion is 5-10 years after license issuance. Licensee shall provide a single person, non-heated outdoor shower at Ponderosa Flat Campground. In accordance with ADAAG, Licensee shall make the following improvements:*

- i. *Modify four campsites and retrofit the existing designated Accessible campsites in the campground to be Accessible. The picnic table, fire ring, cooking grill, tent or RV area, and water faucet at each of these campsites shall be retrofitted to be Accessible.*
- ii. *Replace the vault toilets in the overflow area with one new Accessible single vaulted toilet building and modify all other existing designated Accessible toilet buildings to meet current ADAAG. Provide an Accessible access route to the toilet building near Site 45 and one Accessible paved parking space located near the toilet buildings.*
- iii. *Provide a swimming area at the campground that is Accessible with an approximately .4-acre sandy beach above the high water elevation (4132-foot, PG&E Datum) and swim delineator.*
- iv. *Provide a new Accessible fishing access trail and Accessible pier or platform north of the overflow area.*

**c. Cool Springs Campground:** *Target completion is 5-10 years after license issuance. Licensee shall provide a two-person, non-heated outdoor shower at Cool Springs Campground. In addition, Licensee shall provide one new Accessible campsite. The picnic table, fire ring, cooking grill, tent or RV space, and water faucet at this campsite shall be made Accessible.*

**d. Alder Creek Boat Launch:** *Target completion is 5-10 years after license issuance. Licensee shall expand the existing Alder Creek Boat Launch parking area to accommodate 10 to 20 additional vehicles with trailers and to improve circulation. New parking areas on the east side of the Butt Valley Reservoir Road shall be gravel while those on the west of this road shall be paved. In addition, Licensee shall modify the boat launch to be Accessible and provide one Accessible parking space near the existing double vaulted toilet building.*

### **3. Belden Forebay**

- a. Belden Forebay Access:** *Target completion is 5-10 years after license issuance.*
  - i. *Licensee shall provide a car-top boat launch, a seasonal portable toilet building, and gravel parking area for 10 single vehicles at the Belden Forebay existing undeveloped parking area, which also serves as trailhead for the North Fork Fishing Trail.*
  - ii. *Provide suitable access for launching small, car top watercraft at the Belden Forebay.*
  - iii. *If Plumas County passes an ordinance as specified in Appendix B, Section 2, Paragraph 3(B) of the Relicensing Settlement Agreement, Licensee shall post signage at Belden Forebay referring to this ordinance that will limit boat engine horsepower to 10 hp and boat speeds to 5 mph on Belden Forebay and will prohibit swimming and boating within 0.25 mile of Belden Dam and at night at the Forebay.*

**b. North Fork Fishing Trail:** Target completion is 1-3 years after license issuance. Licensee shall improve the North Fork Fishing Trail from the Belden Forebay parking area to the upstream side of the Caribou Powerhouse 1. Improvements shall include retrofitting the existing metal trail decking and railing at the powerhouse above the turbine outlets to provide enhanced access and safety, providing trail directional signs, and providing a wider, more even non-paved trail base along the chain-link fencing at the powerhouse yard and along Caribou Road from the parking area.

#### **4. Bypass River Reaches**

**a. Upper Belden Reach River Access:** Prior to initiation of any recreation river flow release, Licensee shall provide a river access point at the upstream end of the Belden Reach located at the spoil pile area. This access location shall include a seasonal portable toilet, a seasonal dumpster located over a concrete pad, and a non-paved parking area to accommodate 15 to 25 single vehicles.

**b. Belden Reach Trails:** Target completion is 1-3 years after license issuance. Licensee shall provide and maintain four trails to the Belden Reach shoreline from existing informal parking areas where public access can be provided in a safe manner.

**c. Belden Rest Stop:** *Target completion is 3-5 years after license issuance. Licensee shall relocate the existing picnic tables to the lower level and disperse them within the area from the Eby Stamp Mill to the gazebo near the creek. Two of the tables shall be replaced with Accessible tables and Accessible routes shall be developed to the gazebo, overlook area next to the creek, and the Eby Stamp Mill historical features. The upper level area shall be closed and the existing cooking grills removed. Licensee shall provide improved I&E elements at the rest stop and erosion control measures on the slope between the parking lot and upper picnic area.*

**d. Lower Belden Reach River Access:** If a determination is made to proceed with scheduled recreation river flow releases Licensee shall, upon Forest Service request, provide up to a maximum of \$125,000 (constant dollars not subject to escalation) to the Forest Service for construction of non-Project river access to the lower Belden Reach. The Forest Service will make a Good Faith effort as defined in Paragraph 1.5 of the Relicensing Settlement Agreement to obtain matching funds to help offset the cost of these improvements.

**2. Future Recreation Enhancement Measures.** *The Licensee anticipates the following facility improvements may be needed over the term of the New Project License. Implementation of these measures is contingent on reaching the Recreation Monitoring Standards, contained in the Draft RRMP included in the License Application, over the New Project License term.*

## **A. Lake Almanor**

### **1. Camp Connery Reservation Group Camp Area**

*a. Licensee shall provide a new group reservation camping area adjacent to the existing Camp Connery Group Camp. This area shall either provide space for two groups of approximately eight self-contained RVs or one group of approximately 16 self-contained RVs. A centrally located bear-proof food facility, two user fee based indoor shower buildings with hot water and flush toilets shall be provided at this group camp.*

*b. Licensee shall repair and resurface the existing access road.*

### **2. East Shore Family Campground**

*Licensee shall provide a new two-loop family campground on Licensee-owned land along the east shore of Lake Almanor. The new campground will be constructed in two phases, and shall contain approximately 63 new tent and RV campsites. This campground shall contain bear-proof food lockers at each campsite, two user fee, indoor hot shower buildings with flush toilets, approximately 20 boat moorage slips/buoys, and a camp host site. If the Forest Service is unable to raise all of the matching funds specified in Section 7, Paragraph 1 (A) (1), (c) of the Relicensing Settlement Agreement, then the remaining funds shall be used for recreation improvements at the Almanor Beach and East Shore Family Campground, which shall include the addition of up to 28 campsites in a third loop as funding permits.*

## **B. Butt Valley Reservoir**

**1. Ponderosa Flat Campground.** *Licensee shall provide approximately 20 new primitive tent campsites (likely to the north of the current overflow area), and a new 100-person capacity group camp area in the existing overflow area.*

**3. Project Boundary Adjustments.** Within one year of license issuance Licensee shall apply to the Commission to adjust the FERC Project boundary to include *all Licensee-owned recreation improvements described under the Relicensing Settlement Agreement*, as well as the Forest Service Canyon Dam Boat Launch and Day Use Area, Dyer View Day Use Area, and Almanor Boat Launch. Within 6 months after the Forest Service has completed construction of each of the recreation improvements it has planned for the Forest Service Almanor Family Campground and Amphitheater, Almanor Group Campground, and Almanor Beach, Licensee shall apply to the Commission to adjust the Project boundary as needed to incorporate these facility components and to modify the license article that reflects Appendix A, Section 7, Paragraph 4 (Recreation Operation and Maintenance Program) of the Relicensing Settlement Agreement to include these Forest Service facilities. The boundary adjustment shall also include those portions of the Southwest Shoreline Access Zone components currently outside the project boundary.

## **4. Fisheries**

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**a. Belden Reach**

*As per the agreement under the existing license and subject to the limitations set forth in subsection (c) below, the Licensee shall continue to reimburse the California Department of Fish and Game for stocking of approximately 5000 pounds of catchable trout per calendar year in the waters of the NFFR between its confluence with the East Branch NFFR and the Belden Diversion Dam. The cost to the Licensee for fish stocking shall be the actual average hatchery production cost per pound to the California Department of Fish and Game, and any additional applicable distribution and planting costs. Actual average cost per pound shall be determined by the California Department of Fish and Game based on hatchery production costs for the period beginning July 1 and ending June 30 of the previous calendar year. At the request of the Licensee, the California Department of Fish and Game's cost of carrying out the year's stocking plan is subject to audit by the Licensee for up to three years. If the Licensee performs an audit and disagrees with any expenditures of the California Department of Fish and Game, then the Licensee and the California Department of Fish and Game agree to meet and discuss the audit and make appropriate changes in the stocking plan budget.*

**b. Lake Almanor**

*Subject to the limitations set forth in subsection (c) below, the Licensee agrees to make funds available annually to augment the California Department of Fish and Games existing Lake Almanor fisheries program. The specifics of any fishery augmentation program will be defined by the California Department of Fish and Game and presented to the Licensee during February of each calendar year for discussion. A fisheries augmented program may include, but not limited to, such projects as the expansion of the pen rearing program and the construction of rearing habitat for warm water fish.*

**c. Annual Funding for Fishery Programs**

*Licensee shall make available up to \$50,000 (2004 dollars escalated as defined in Paragraph 4.4.5 of the Relicensing Settlement Agreement) per year for the term of the New Project License for items subsections (a) and (b) above. Unused portions of the \$50,000 will not be rolled over to successive years.*

### **Condition No. 33-Recreation Operations and Maintenance**

Prior to the start of the first recreation season following license issuance, Licensee shall assume responsibility for Operational Maintenance and Heavy Maintenance at the following Forest Service facilities:

- Dyer View Day Use Area
- Canyon Dam Boat Launch and Day Use Area, and
- Almanor Boat Launch

Operational Maintenance is defined as maintenance or reconditioning that neither materially adds to the value of the property nor appreciably prolongs its life. The work serves only to keep the facility in an ordinary, efficient operating condition. From an accounting or tax perspective, it is work that may be expensed. Examples include interior painting, repair of broken windows, light bulb replacement, cleaning, unplugging drains, preventative maintenance, normal wear and tear, water, sanitation, road maintenance, greasing, servicing, inspecting, oiling, adjusting, tightening, aligning, sweeping, and incidental snow removal.

Heavy Maintenance is defined as maintenance or reconditioning that arrests deterioration and appreciably prolongs the life of the property. From an accounting standpoint, the expenditures may be capitalized. Examples include installing a new roof, new floor, or new siding, replacing electrical wiring or heating systems, repairing or replacing pipes, pumps or motors, repairing or maintaining government property threatened or damaged by heavy snow or ice, repairing or maintaining the paths, lands, walks, roads, or walls adjacent to other government-owned structures, and performing exterior painting or refinishing.

As each recreation facility is individually constructed by Licensee, Licensee shall assume responsibility for Operational Maintenance and Heavy Maintenance at the following Forest Service facilities:

- Southwest Shoreline Access Zone facilities described in Paragraph 1(A)(1)(n) of Condition 32

Licensee shall not be responsible for Operational Maintenance and Heavy Maintenance of the Almanor Picnic Area.

Licensee's Operational Maintenance and Heavy Maintenance of the Forest Service facilities described above shall be consistent with FS standards, applicable laws, regulations, codes, and other legal direction. Licensee shall not be responsible for any future Reconstruction of these facilities.

In accordance with Commission, Forest Service, and applicable California Department of Boating and Waterways regulations, Licensee shall collect and retain 100 percent of Forest Service approved reasonable user fees at all Forest Service recreation facilities that Licensee operates and maintains. User fees shall be used to offset Licensee's Operational Maintenance, Heavy Maintenance, and reasonable administrative costs, with the intent that the fees shall be sufficient to cover these costs over the term of the license, and as feasible, Licensee's matching contribution towards initial construction of recreation improvements at FS facilities defined in Paragraph(1)(A)(1)(c) of Condition 32. Licensee shall meet with the

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Forest Service and Plumas County every five years, or as necessary, to determine whether the fees are sufficient to meet these purposes, and if not, to make necessary adjustments. Licensee shall track costs and revenues in a balancing account and shall provide the Forest Service with an annual accounting. Funds derived from the user fees may be accumulated from year to year to address larger Heavy Maintenance projects. Licensee shall meet with the Forest Service and Plumas County at least annually to review the operation and maintenance of Forest Service facilities included in the license and adjust maintenance levels as necessary. At the end of the license term, any remaining funds in the balancing account shall be used to offset Licensee's matching contribution toward initial construction of recreation improvements at Forest Service facilities. Prior to Licensee assuming responsibility for Operational Maintenance and Heavy Maintenance of these Forest Service recreation facilities, Licensee shall enter into an operation agreement or other appropriate authorization approved by the Forest Service that is consistent with Licensee's obligations under this Condition.

### **Condition No. 34-Interpretation and Education (I&E) Program**

Within two years after license issuance, Licensee shall develop an I&E Program for the Project in consultation with the Forest Service, Plumas County, Native American Tribes/groups and other parties and other Relicensing Settlement Agreement signatories and submit the plan to the Commission. The Licensee shall submit the portion of the I&E Program pertaining to Forest Service facilities to the Forest Service for its approval. Licensee shall implement the I&E Program within one year of Program approval by the Commission. The I&E Program shall provide information to enhance recreation experiences and encourage appropriate resource protection, cooperation, and safe behaviors by Project visitors. The I&E Program shall include themes, media, media design, prioritized sites, and prioritized services. Potential themes include fish and wildlife resources, volcanic history, hydropower, Native American cultures, pioneers, recreation activities and facilities available in the Project area, and boating hazards. The I&E Program shall include improvements such as interpretive or informational signs, kiosks, reservoir boating safety and hazard information signs and brochures, and informational signs describing recreation facilities and opportunities in the area. The I&E Program improvements shall be developed at recreation sites owned by Licensee and Forest Service that are to be included in the Project boundary. The I&E Program shall also identify funding partnership arrangements with the Forest Service and other interested parties, and contain a schedule for implementation. Licensee and Forest Service will review facility naming practices and re-name facilities with similar names in order to reduce visitor confusion. Licensee and Forest Service will agree on wording of entrance signs to facilities operated by Licensee but owned by the Forest Service. I&E presentations may be provided by the Forest Service at Forest Service facilities. Licensee shall not be responsible for providing any I&E presentations at any Project recreation facility.

As part of the I&E Program, Licensee shall prepare a Lake Almanor bathymetry map within one year of license issuance. This map shall be provided in pamphlet form to area boaters and posted on signs at Lake Almanor public boat ramps.

### **Condition No. 35-Recreation Monitoring Program**

Within 12 months of license issuance, the Licensee, in consultation with the Forest Service, Plumas County, and other interested Relicensing Settlement Agreement signatories, shall complete a Recreation Monitoring Program and submit the plan to the Commission. The Licensee shall submit the portion of the Recreation Monitoring Program pertaining to Forest Service facilities to the Forest Service for its approval. Licensee shall adopt a modified Limits-of-Acceptable Change (LAC)-based monitoring approach as described in the Draft RRMP contained in the Final License Application. This approach includes Recreation Monitoring Indicators and Standards that shall initiate management action to help maintain desired recreation experiences and resource conditions at Project recreation areas over the license term. Specific recreation areas to be monitored by the Licensee shall include at a minimum the water surface of Project reservoirs, Licensee and Forest Service recreation facilities, and shoreline areas within the Project boundary. The Program shall include a schedule of information to be collected annually, every six years, or every 12 years. Licensee shall conduct more in-depth monitoring, such as visitor questionnaire surveys and general assessment of regional recreation trends at 12-year intervals. As part of the Recreation Monitoring Program, Licensee shall conduct annual recreation planning and coordination meetings with other recreation providers in the Project area to discuss recreation resource management decisions for the Project area, implementation of Project recreation enhancements, recreation monitoring results, potential grant applications and other pertinent Project-related recreation issues that may arise over the term of the project license.

The Licensee shall prepare periodic monitoring reports every 6 years in conjunction with FERC Form 80 recreation facility and use monitoring requirements. Prior to submitting such reports to FERC, Licensee shall submit the portions of the report pertaining to Forest Service facilities to the Forest Service for its approval. These reports shall include but not be limited to changes in kinds of use and use patterns both on water surfaces and land, amount and types of recreational activities, kinds and sizes of recreational vehicles including boats, amount of day use versus overnight use, and recreation user trends within the Project area as well as summaries of annual monitoring. More in-depth questionnaire surveys and regional assessment results shall be incorporated into these reports at 12-year intervals.

If recreation river test flow releases are conducted, Licensee shall, in consultation with Forest Service and other interested Relicensing Settlement Agreement signatories, develop a study plan to monitor recreation use during the test flow period and produce a report on monitoring results.

### **Condition No. 36-Resource Integration and Coordination Program**

Licensee shall hold annual meetings to integrate recreation resource needs with other resource management needs, such as cultural, wildlife, water quality, and aquatic resources. These meetings shall be held over the term of the project license with the Forest Service,

other interested Relicensing Settlement Agreement signatories and State Water Resources Control Board, and shall be open to the public.

### **Condition No. 37-Recreation Resource Management Plan (RRMP) Review and Revision Program**

Over the term of the New Project License, unforeseen recreation needs, changes in visitor preferences and attitudes, and new recreation technologies may occur. The frequency with which the RRMP is revised or updated by Licensee shall depend on significant changes to existing conditions, monitoring results, and management responses made over time. The frequency of RRMP updates shall not exceed every 12 years and shall be based on consultation with the Forest Service, State Water Resources Control Board, and other interested Relicensing Settlement Agreement signatories during monitoring and coordination meetings and through other appropriate sources.

### **Condition No. 38-River Ranger**

By March 1 of each year of the New Project License, the Licensee shall provide to the Forest Service up to \$25,000 (2004 dollars escalated as defined in Paragraph 4.4.5 of the Relicensing Settlement Agreement), to assist in funding a “River Ranger” position. The purpose of this position shall be to provide additional light maintenance, visitor information/assistance, and user safety and law enforcement presence in the Project’s bypassed river reaches.

The Licensee may request that the Forest Service provide Licensee by January 31 of each year a written summary of the previous year expenditures and River Ranger activities and the current year’s planned expenditures and River Ranger activities.

### **Condition No. 39-Traffic Use Survey**

Within one year of license issuance, Licensee shall file with the Commission a road traffic survey plan for roads used for Project purposes located on National Forest System lands. This plan shall be approved by the Forest Service and include provisions for monitoring traffic every six years when Licensee is monitoring recreation use in accordance with FERC Form 80 requirements. At a minimum the road traffic survey shall include the Caribou Road (27N26) and the Caribou-Butt Valley Reservoir roads (27N26 and 27N60) and include:

- The number of vehicles per day, type of vehicle, such as log trucks, recreational vehicles, passenger cars, emergency vehicles (fire), or Licensee vehicles on these roads.
- A sampling approach for these roads that covers the fishing season and includes the opening weekend of fishing season, Memorial Day weekend, July 4<sup>th</sup> holiday weekend, the day before, the day of and the day after scheduled Belden Reach recreation river flow releases, Labor Day weekend, non-holiday weekends, and weekdays.

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Road traffic reports every six years to be filed with the Commission, after Forest Service review and comment.

#### **Condition No. 40-Land Management and Visual Resource Protection**

The Licensee shall implement the following measures at existing facilities within 2 years after license issuance or as otherwise noted:

*A. Paint the metal siding and roof of the hoist house on the Prattville Intake structure a dark green color similar to the current color;*

*B. Plant sufficient evergreen trees between the existing Prattville maintenance buildings and the shoreline to reduce visual domination of the buildings on the shoreline area. Monitor and oversee tree survival to ensure successful establishment through the first three summers.*

C. Re-grade the Oak Flat road debris spoil piles along Caribou Road to create a more natural rolling topography along the roadside, and where possible, move spoil materials farther from the road. Establish native plantings where possible between the road and the spoil piles to help screen the active use areas from passing motorists.

D. In consultation with the Forest Service, prepare a plan to annually apply dust palliatives or other measures, including regular grading, to help minimize dust emissions and improve the lower coupled segment of the Butt Valley-Caribou Road.

*E. At the Belden Powerhouse, consult with the Forest Service on color selection when maintenance or repair work is scheduled on the Belden Powerhouse penstocks, surge chamber, or other powerhouse facilities to reduce visual contrast as seen from State Route 70.*

F. At Caribou Village, maintain the exterior and landscaping of the old clubhouse facility, houses, and grounds to preserve the historic features and character of the facility. Consult with the Forest Service when maintenance or repair activities that affect exterior appearance are to take place to help preserve, as practical, the historic and visual appeal of the village landscaping and structures.

G. Within 60 days prior to any ground-disturbing activity on National Forest System lands, the Licensee shall file with the Commission a Visual Management Plan approved by the Forest Service. At a minimum, the plan shall address:

- Clearing, spoil piles, and Project facilities such as diversion structures, penstocks, pipes, ditches, powerhouses, other buildings, transmission lines, corridors, and access roads.
- Facility configuration, alignment, building materials, colors, landscaping, and screening.

- Proposed mitigation and implementation schedule necessary to bring Project facilities into compliance with National Forest Land and Resource Management Plan direction.
- Locating road spoil piles either in approved areas on National Forest System lands or to a location off FS administered lands.
- Monitoring and eradication of noxious weeds as specified in the “Noxious Weeds Management Plan” license condition.
- Removal of all visible non-native materials, including construction debris from the surfaces of piles located on National Forest System lands.
- Stabilization and revegetation of all native material that is allowed to be left on National Forest System lands including compliance with visual quality objectives.

H. Within 30 days after license issuance, Licensee shall consult with the Forest Service and other interested Relicensing Settlement Agreement signatories for the purpose of developing a final Shoreline Management Plan (SMP). The revised plan shall be implemented within one year of license issuance. The Forest Service will approve portions of the plan within the jurisdiction of the Forest Service. Licensee shall meet with the Forest Service and Plumas County, and other interested Relicensing Settlement Agreement signatories a minimum of every 10 years to discuss the need to update the SMP. The need to update the SMP sooner may also be raised and discussed during the annual land use meetings with the Forest Service, Plumas County, and other interested Relicensing Settlement Agreement signatories.

I. Conduct an annual meeting with the Forest Service, California Department of Fish and Game and Plumas County to coordinate ongoing Project-related land management activities including recreation management and use, fire suppression and related forest health activities, and the planning for commercial, residential and industrial developments adjacent to the Project boundary.

#### **Condition No. 41-Vegetation Management Plan**

Within one year of License issuance, Licensee shall file with the Commission a Vegetation Management Plan, approved by the Forest Service, for the purpose of identifying hazardous vegetative conditions surrounding project facilities that may accelerate the spread of a wildfire onto National Forest System lands as a result of Licensee activities or might place project facilities in jeopardy from an approaching fire. At a minimum the plan shall include provisions for: (1) analysis of live and dead fuel loading and potential fire behavior within 300 feet of project features; (2) treatments to be employed to reduce the hazard; (3) implementation schedule; and (4) provisions for the reassessment of hazard at 5 to 8 year intervals depending on regrowth of vegetation. Treatments extending onto adjacent National Forest System lands shall be approved by the Forest Service. When practicable coordinate implementation and accomplishment of hazard reduction activities with those of the Forest Service.

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## Condition No. 42—Road Management Plan

Within one year after license issuance, Licensee shall file with the Commission, a Road Management Plan approved by the Forest Service. The plan shall include all Forest Service and unclassified roads required by the Licensee to access the Project area.

The Project Road Management Plan shall include:

- 1) Identification of all Forest Service roads and unclassified roads on National Forest System lands needed for Project access, including road numbers.
- 2) A map of all Forest Service roads and unclassified roads on National Forest System lands used for Project access, including digital spatial data accurate to within 40 feet, identifying each road by Forest Service road number.
- 3) A description of each Forest Service road segment and unclassified roads on National Forest System lands needed for Project access including:
  - a) Termini
  - b) Length
  - c) Purpose and use
  - d) Party responsible for maintenance
  - e) Level of maintenance
  - f) Structures accessed
  - g) Location and status of gates and barricades, if any
  - h) Ownership of road segment and underlying property
  - i) Instrument of authorization for road use
  - j) Assessment of road conditions
- 4) Provisions for the Licensee to consult with the Forest Service in advance of performing any road construction, realignment, or closure involving Forest Service roads or lands.
- 5) The Licensee shall cooperate with Forest Service on the preparation of a condition survey and a proposed maintenance plan subject to Forest Service approval annually; beginning the first full-year after the Road Management Plan has been approved.

The Licensee shall obtain appropriate authorization (e.g. special use permit, road use permit, or maintenance agreement) in accordance with the Road Management Plan for all Project access roads that are under Forest Service jurisdiction outside the Project Boundary, including unclassified roads and Forest Service System roads needed for Project access. The term of the authorization shall be the same as the term of the license. The Licensee shall enter into the appropriate authorization mechanism with the Forest Service that will supersede the existing Special Use Permit. The Road Management Plan shall identify the Licensee's responsibility for road maintenance and repair costs commensurate with the Licensee's use and Project-induced use. The Road Management Plan shall specify road maintenance and management standards that provide for traffic safety; minimize erosion and damage to natural resources and that are acceptable to the Forest Service.

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Licensee shall be responsible for any new construction, realignment, closure, or other road management actions proposed by Licensee in the future, subject to Forest Service standards in effect at the time, including related studies, analyses or reviews required by Forest Service.

Snow removal on Roads 27N26 and 27N60 and other Project roads shall be performed so as to minimize erosion during runoff periods. The Licensee shall be responsible for maintenance and replacement of aggregate that is damaged or lost due to snow plowing on the aggregate surfaced portion of Roads 27N26 and 27N60 and other roads from which snow is plowed. The Licensee shall be responsible for a share of the cost of needed maintenance and repairs of Roads 27N26 and 27N60 commensurate with the Licensee's use and Project induced use.

### **Condition No. 43—Heritage Resources**

Within one year of license issuance, Licensee shall file with the Commission, a Heritage Properties Management Plan (HPMP) approved by the Forest Service for the purpose of protecting and interpreting heritage resources. The Licensee shall consult with the State Historic Preservation Officer, Native American Tribes, Forest Service, and other applicable agencies and communities during the preparation of the plan. The HPMP will be incorporated into the Programmatic Agreement of which the Forest Service will be a signatory. The HPMP, as appropriate, shall accurately define the area of potential effects, including effects of implementing Section 4(e) conditions, and take into account project effects on National Register properties; Native American traditional cultural values; and Project impacts to archaeological properties on National Forest System lands. The HPMP shall also provide measures to mitigate the identified impacts, a monitoring program, and management protocols for the ongoing protection of archaeological properties.

If, prior to or during ground-disturbing activities or as a result of project operations, items of potential cultural, historical, archeological, or paleontological value are reported or discovered, or a known deposit of such items is disturbed on National Forest System lands and Licensee adjoining fee title property, the Licensee shall immediately cease work in the area so affected. The Licensee shall then notify the Forest Service and shall not resume work on ground-disturbing activity until appropriate evaluation of the find has been completed and Licensee has received written approval from the Forest Service.

If deemed necessary, the Forest Service may require the Licensee to perform recovery, excavation, and preservation of the site and its artifacts at the Licensee's expense through provisions of an Archaeological Resources Protection Act permit issued by the Forest Service.

### **Condition No. 44—Special Status Species**

The Licensee shall, beginning the first full calendar year after license issuance, in consultation with the Forest Service, annually review the current list of special status plant and wildlife species (species that are Federal Endangered or Threatened, Forest Service Sensitive, or Lassen and Plumas National Forest Watch Lists) that might occur within the Project Boundary. When a species is added to one or more of the lists, the Forest Service in

consultation with the Licensee shall determine if the species or un-surveyed suitable habitat for the species is likely to occur within the Project Boundary. For such newly added species, if the Forest Service determines that the species is likely to occur, the Licensee shall develop and implement a study plan in consultation with the Forest Service to reasonably assess the effects of the Project on the species. The Licensee shall prepare a report on the study including objectives, methods, results, recommended resource measures where appropriate, and a schedule of implementation, and shall provide a draft of the final report to the Forest Service for review and approval. The Licensee shall file the report, including evidence of consultation, with the Commission and shall implement those resource management measures required by the Commission.

In addition, areas within the Project Boundary that have suitable habitat or known occurrences of selected special status wildlife or plant species shall be resurveyed every ten years in order to (a) determine if special status plant or wildlife species have changed in location (i.e. migrated into or moved within the Project Boundary), and (b) monitor for impacts caused by on-going Project activities. The licensee shall consult with the Forest Service to determine which species need to be resurveyed. The survey interval may be adjusted based on the amount of movement or impacts to the species that are observed. Survey results shall be provided to the Forest Service. If the Forest Service determines that negative impacts have occurred, the Licensee shall submit a proposal for actions to reduce or eliminate impacts to special status species. The Licensee shall file the report, including evidence of consultation, with the Commission and shall implement those resource management measures required by the Forest Service and approved by the Commission.

#### **Condition No. 45-Protection of Threatened, Endangered, Proposed for Listing and Sensitive Species Plan**

Before taking actions to construct new project features on National Forest System lands (including, but not limited to, proposed recreation developments) that may affect a species proposed for listing, or listed under the federal Endangered Species Act (ESA), or that may affect that species' critical habitat, or a Forest Service sensitive, or other special status species or their habitats, the Licensee shall prepare, in consultation with other appropriate agencies, a biological evaluation evaluating the potential impact of the action on the species or its habitat and submit it to the Forest Service for approval. In consultation with the Commission, the Forest Service may require mitigation measures for the protection of the affected species. Unless agreed to by the Forest Service, where current information on population occurrence for some species is lacking (e.g. valley elderberry longhorned beetle, terrestrial molluscs, and Pacific fisher) the Licensee shall perform necessary surveys prior to ground-disturbing activities. The biological evaluation shall include:

- Develop procedures to minimize adverse effects to listed species.
- Ensure project-related activities shall meet restrictions included in site management plans for listed species.
- Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to listed species.

## Condition No. 46-Invasive Weed Management Plan

Within one year of license issuance, Licensee shall file with the Commission an Invasive Weed Management Plan, approved by the Forest Service, for the purpose of controlling and containing the spread of Project-related invasive weeds on *Licensee* and National Forest System lands, which might be related to the Licensee's activities. The Invasive Weed Management Plan shall include and address the following elements:

- Actions to be taken to ensure that Project staff is aware of the current location of invasive weeds and identifying characteristics of the invasive weeds likely to occur in the Project area.
- Treatment measures to be adopted for the control of invasive weeds (aquatic and terrestrial) located within the project boundary and adjacent to project features including recreation facilities, roads, and distribution and transmission lines within the project boundary.
- Inventory and mapping of new populations of invasive weeds within the area affected by project related operations or activities using a Forest Service compatible database and GIS software. The invasive weed GIS data layer will be updated periodically and shared with resource agencies.
- Actions or strategies that will be undertaken to prevent and control the spread of known populations or introductions of new populations within the area affected by project related operations or activities, such as vehicle/equipment wash stations.
- A schedule for eradication of all A, B, Q and selected other rated invasive weed species within the area affected by project related operations or activities, designated by resource agencies.
- Actions to be taken to eradicate A and B rated weed infestations within 12 months of detection. (A, B, C, & Q ratings refer to the California Department of Food & Agriculture Action Oriented Pest Rating System).
- A plan to treat all classes of invasive weeds located at sensitive sites such as recreation facilities. The list of sensitive sites shall be developed in consultation with the Forest Service.
- A plan for the inventory of noxious weeds at Project facilities and other possible points of introduction every five years using the current list of noxious weeds of concern to the Lassen and Plumas National Forests. This frequency may be adjusted based on the results of these inventories. This inventory will be used to help prevent the spread of noxious weeds and will also serve as monitoring for the weed introduction prevention measures.
- Monitoring information, in database and GIS formats, shall be provided to the Forest Service as part of the annual consultation on affected National Forest resources.
- Guidelines for restoration or revegetation of areas where treatment has eliminated invasive weeds to prevent the reintroduction of invasive weed species.
- Use of certified weed-free straw for all construction or restoration needs. If certified weed-free straw is not available, rice straw may be substituted. The Licensee shall use an approved mix of plant species native to the Lassen or Plumas National Forests as appropriate for restoration or erosion control purposes.

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- Adoption of procedures to thoroughly clean all construction equipment and other equipment, including Licensee owned and rental equipment, that operates off the roads or moves soil, before entering the Project vicinity, and using reasonable cleaning methods to reasonably ensure that seeds of noxious weeds are not introduced.
- Monitoring of project-induced ground disturbing activities annually for the first 3 years after disturbance to detect and map new populations of noxious weeds.
- An adaptive management element to implement methods for prevention of aquatic noxious weeds, as necessary. These actions may include, but may not be limited to: 1) public education and signing of public boat access, 2) preparation of an Aquatic Plant Management Plan approved by the Forest Service, and in consultation with other agencies, and 3) boat cleaning stations at boat ramps for the removal of aquatic noxious weeds.

### **Condition No. 47-Bald Eagle Management Plan**

Within 90 days of license issuance, the Licensee shall initiate consultation with the Forest Service and other appropriate agencies to develop a new Bald Eagle Management Plan for the Project area. Within two years of license issuance and after approval by all involved parties as well as by the Forest Service, the Plan shall be filed with the Commission. The plan shall be used to assist in the ongoing bald eagle recovery efforts and will be a tool for future management of all lands around these projects. As a minimum the plan shall include:

- Periodic monitoring of human use patterns to discern human/bald eagle interaction conflicts.
- Annual monitoring of bald eagle reproduction around Lake Almanor
- Coordination of Licensee activities on Licensee lands within the project boundary with the Forest Service and other appropriate agencies to achieve the goals and requirements set forth in this plan.
- Coordination of woodcutting activities on Licensee lands.

## **Enclosure 2**

### **Rationale Document** **Final 4(e) Terms and Conditions** **Upper North Fork Feather River Project FERC No. 2105**

#### **Introduction**

The purpose of this enclosure is to explain the Forest Service (FS) rationale for the attached “Final 4(e) License Terms and Conditions” (Enclosure 1), which are necessary for the adequate protection and utilization of the affected National Forest System lands as administered by the Lassen and Plumas National Forests. The Forest Service has the authority to prescribe license conditions under Section 4(e) of the Federal Power Act, when a direct or indirect connection between the project and effects to National Forest System lands (NFSL) can be demonstrated. It is mandatory for the Federal Energy Regulatory Commission (FERC) to incorporate 4(e) conditions into the project license. The Forest Service is also submitting “Recommendations”, as allowed under Section 10(a) of the Federal Power Act. The “Recommendations” are applicable to areas where project effects do not directly affect National Forest System lands, and are optional for consideration by the FERC, as the lead federal agency. The “Recommendations” are shown in Enclosure 1 as italicized text. The rationale for the “Recommendations” are included in Enclosure 2.

The Forest Service determined appropriate mandatory 4(e) license conditions for the Upper North Fork Feather River Project by comparing the “desired condition” of a particular resource (the condition towards which we are trying to move), with our knowledge of the existing condition of the resource (the state of the resources today). Comprehensive Forest Plan direction, Forest Service policy, rules, laws, and regulations were used as the basis for determining the desired conditions. The results of many studies completed by the Pacific Gas and Electric Company (Licensee), Forest Service data collection, observations of the affected resources and professional judgment were used as the basis for determining the existing resource condition. The Forest Service has used this comparison of “Existing” to “Desired” resource condition as a measure of project affects throughout much of the relicensing process. Where there are gaps between the “Existing” and “Desired” conditions, laws, rules, or policy are potentially not being met. Appropriate 4(e) license conditions are then prescribed to narrow the gap. With these license conditions, resources are expected to either meet, or move towards the “Desired Condition”.

The Licensee as well as a number of interested parties entered into a settlement process for the purpose of resolving project associated resource issues. A subgroup of settlement participants composed of representatives of various federal, State, and county agencies as well as representatives of Non-Governmental Organizations developed Ecosystem and Management Attributes for the various project reaches and reservoirs. The Ecosystem and Management Attributes were subsequently adopted by the 2105 Collaborative as a means of directing settlement discussions as well as crafting of draft settlement language. Appendix 1 of the Forest Service Preliminary 4(e) Conditions dated December 1, 2003 contains the project Ecosystem and Management Attributes.

The decision on whether or not to relicense this hydroelectric project lies with the Federal Energy Regulatory Commission, as the lead federal agency. Therefore, the Forest Service mandatory 4(e) license conditions and any 10(a) recommendations accepted by the FERC, would become a portion of the overall license, if issued by the FERC.

The FERC license project boundary includes Licensee's facilities that produce hydroelectric energy (i.e. dams, intake, transformer sites, etc.), and those facilities that are appurtenant to, or result from hydroelectric generation facilities (e.g. roads, campgrounds, etc.). However, the limited extent of FERC project boundaries does not include, in all cases, the extent of the resources affected by the project and its appurtenances. For example, the Upper North Fork Feather River Project river reaches (those portions of the Upper North Fork Feather River between the Canyon Dam and Belden Powerhouse) are not included within the FERC license boundary. Yet the river reaches have been dramatically altered by the reduction of river summer base flows and winter storm and snowmelt runoff induced by Project hydropower generation. This reduction has had a substantial effect on the riverine biological and botanical resources. Since some of these project-affected river resources are located on National Forest System lands (NFSL) in the Seneca and Belden reaches of the Upper North Fork Feather River as well as Butt Creek below Butt Valley Reservoir, 4(e) license conditions for those resources associated with instream flows are prescribed. Another example of Project effects outside of the limited FERC license boundary is recreation. Recreation preferences and visitation to the project area has been influenced by Project streamflows and features. The area of Project effects varies by resource so it is not feasible to develop an "affected area" boundary.

The intent of this "Rationale" document is to demonstrate the Project to resource links, which are displayed below by resource area. Within each heading the applicable License Conditions are listed, following by a comparison of the "Existing" and "Desired" resource condition and the Rationale to move the resources to, or towards, the desired state. There is overlap between effects in these resource groupings, as one project-induced change may cause several resource effects (positive or negative) in other resource areas.

The December 1, 2003 Rationale Document has been edited to reflect the April 2004 Upper North Fork Feather River Project 2105 Relicensing Settlement Agreement and the January 2004 Sierra Nevada Forest Plan Amendment Record of Decision. In several instances, extensive citations of the 2004 Record of Decision have been added to the Rationale Document.

## **A. General, Standard and Project Specific Conditions**

### License Conditions

No. 1 –47: “General, Standard, and Project Specific Conditions”

### Existing Condition

As briefly outlined above, and detailed below, the Upper North Fork Feather River Project has affected resource condition and function on National Forest System lands as administered by the USDA-Forest Service.

### Desired Condition

A number of laws and regulations have been promulgated to ensure resource protection on National Forest System land. The following are the most germane to this relicensing:

- Federal Power Act of 1950
- Organic Administration Act of 1897
- Multiple-Use Sustained Yield Act of 1960
- National Forest Management Act of 1976, including Land and Resource Management Plan Standards and Guidelines

### Rationale

The Forest Service has developed a set of “standardized” 4(e) license conditions, to be applied to each relicensing project. Standardized conditions No. 1-24 are included in order to meet the applicable laws and regulations that are germane to this project. Project Specific Conditions No. 25-47, have additional rationale as discussed below.

## **B. Geomorphology, Hydrology and Aquatic Resources**

### License Conditions

- No. 25-Streamflow
- No. 26-Seneca, Butt Valley Creek and Belden Reach Biological Monitoring
- No. 27-Water Year Type
- No. 30-Reservoir Operation

### Geomorphology, Hydrology and Aquatic Resource Existing Condition

The flow of the North Fork Feather River (NFFR) has been regulated since the construction of Canyon Dam in 1914 and the creation of Lake Almanor (Table 1). Flow has been further altered

by subsequent construction of Butt Valley Reservoir, Belden Forebay, and associated powerhouses.

Table 1. Flow Regimes of the North Fork Feather River Before and After Construction of Canyon Dam

Flow regime	Time Period <sup>1</sup>	Regime Before Canyon Dam (1908-1913)	Regime After Canyon Dam (1914-2001) <sup>2</sup>
Summer/early fall baseflow	June 15 – October 14	Flow usually between 500 and 800 cfs*	Flow less than 100 cfs in 68 years (77% of the years)
Late fall/winter baseflow	October 15 - March 14	Flow usually between 600 and 1000 cfs	Flow less than 200 cfs. in 74 years (84% of the years)
Snowmelt season	March 15 – June 14	Flow usually between 800 and 2500 cfs	Flow less than 200 cfs in 83 years (94% of the years)
Pulse flows	October 15 – May 15	In many years, 1-3 pulse flows of greater than 1,500 cfs	Over half of the annual peak flows are less than 1,000 cfs
Large flood flows	October 15 – May 15	Flows greater than 10,000 cfs probably occurred many years apart	Flows never exceed 2,710 cfs

Note: Regime data is from USGS Gauge 11399500, located at an elevation of 4390 feet approximately 0.5 mile downstream of Canyon Dam. The drainage area is 493 square miles.

\* cubic feet per second

<sup>1</sup> Varies somewhat from year to year.

<sup>2</sup> Flows during all or part of the time period. Entries also reflect conditions prior to construction of the Caribou 2 Powerhouse and the Belden Forebay and Powerhouse

*Topic 1. Flow of North Fork Feather River below Canyon Dam*

- Baseflow is less than 25% of pre-dam baseflow in many years.
- Natural variation in baseflow has been compressed by more than 70% in many years since dam construction.

Pulse flows have been reduced in size and frequency. Before Canyon Dam was constructed, pulse flows greater than 1,500 cubic feet per second (cfs) occurred nearly every year. After Canyon Dam construction, in many years flows have not been greater than 1,000 cfs.

- Large flood flows have disappeared. Flows greater than 10,000 cfs probably occurred before flow regulation but since regulation rarely exceed 2,000 cfs.

The current project license provides for a minimum year-round flow of 35 cfs in the Seneca reach and, in the Belden reach, 140 cfs from the last Saturday in April through Labor Day, and 60 cfs for the remainder of the year. No minimum streamflow is required in Butt Creek below



Butt Valley Reservoir. (Dam leakage and discharge from springs results in streamflow at the mouth of Butt Valley Creek of 15 to 20 cfs.)

*Topic 2. Loss of Riverine Habitats*

- The impoundment of water in Lake Almanor and Belden Forebay resulted in the replacement of approximately half of the riverine habitats that existed within the project area with reservoir habitats. Reservoir habitats are less dynamic (smaller variations in temperature, size, sediment movement, etc.) than the riverine habitats they replaced, and they favor introduced species over native species.

*Topic 3. Floodplain Inundation*

- Before construction of Canyon Dam, the entire floodplain downstream of the dam was probably inundated frequently, with an average recurrence of perhaps 1.5 years. After Canyon Dam construction, many years pass before small areas of the floodplain are inundated.

Up to 3,000 cfs is needed to inundate the entire floodplain at all locations in the Seneca and Belden reaches, yet over half of the annual peak flows since 1914 have not exceeded 1,000 cfs.

*Topic 4. Production and Distribution of Sediment and Channel Bed Material*

- As a result of reduced flows, less erosion and deposition of sediment and channel bed material occurs.
- The minimum flow required to erode and rejuvenate the median-sized material in lateral and mid-channel bars is 1,600 to 3,000 cfs, depending on location. Before flow regulation, such flows occurred annually, and much greater flows typically occurred at least once within any five-year period. Since 1914, over half of the annual peak flows have been less than 1,000 cfs. This means erosion and deposition of material in the stream channel and floodplain are absent during many years. In addition, a reduction in the amount of fine-grained sediment and gravel in the Seneca and Belden reaches of the river is probable since completion of Canyon Dam. The dam has trapped sediment and gravel behind it that otherwise would have been distributed downstream during large flood flows. Such flows do not occur now because of river regulation.

*Topic 5. Recruitment and Redistribution of Large Woody Debris*

- Lack of recruitment and transport of large woody debris below dams is a well-recognized impact of dams on river systems and has almost certainly occurred in the Seneca and Belden reaches of the river. Inventory of large woody debris showed that the majority of

woody debris within and adjacent to the river is rather small.

#### *Topic 6. Vegetation in the Floodplain*

- Encroachment of riparian vegetation in the floodplain has occurred since flow regulation began in 1914. Encroachment accelerated following construction of the Caribou 2 Powerhouse and the Bleden Forebay and Belden Powerhouse. Thick vegetation currently lines the low flow channel at many locations.
- Before flow regulation, large flood flows periodically removed and regenerated much of the vegetation in the floodplain. Since flow regulation, flows necessary to scour riparian vegetation and provide propagules for seedling establishment – over 2,100 cfs in the Seneca reach and 3,500 cfs in the Belden reach – almost never occur.

#### *Topic 7. Edgewater and Backwater Habitats for Amphibians and Fish*

- Reduced flows since construction of Canyon Dam have resulted in a loss of transitional aquatic habitats between the baseflow elevation and the annual and/or spring runoff elevations. Such habitat is valuable to both juvenile salmonids and amphibian species.

#### *Topic 8. Environmental Cues for Aquatic Organisms*

- The activities and life histories of many aquatic organisms including reproduction, metamorphosis, movement, and feeding are dependent upon changes in temperature and streamflow, as well as other environmental factors. Taken together, these physical changes are often termed environmental cues. As streamflow and temperature decreased after dam construction, the biological communities that, through evolution, depend upon these environmental cues are likely to have been changed. However, the magnitude of these changes is unknown.

#### *Topic 9. Physical Habitat for Aquatic Species*

- Reduced flows after construction of Canyon Dam have resulted in a reduction in edgewater habitat, depth of pools, large wood recruitment and movement, and sediment and bedload movement, as well as increased vegetation encroachment and loss of interaction between the channel and the floodplain. These are key habitat elements for fish and other aquatic species.

#### *Topic 10. Aquatic Habitat Connectivity*

- Canyon Dam, as well as other dams on the NFFR, are physical barriers to the movement of aquatic species, as well as to the regeneration of habitat elements such as sediment and woody debris.
- Reduction in flow after the dam has contributed to the items listed above.

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### *Topic 11. Stream Temperatures*

- Before flow regulation, water in the Seneca reach of the NFFR in the summer was probably warmer than it is today. The river flowed through a long, wide valley upstream of the reach known as Big Meadows, which allowed for solar heating of the stream. The heating was tempered by the large cold water springs located in Big Meadows. Water in the Seneca reach is released through the lower outlet gates at Canyon Dam from a zone of cold water.
- Maximum temperatures in the Seneca reach measured at a location 11 miles downstream of Canyon Dam usually remain less than 16.0° C in July and August. The cold water gradually warms as it flows downstream.

### *Topic 12. Lake Almanor*

Lake Almanor is the uppermost reservoir on the NFFR. The reservoir was initially created in 1914 in what was historically called “Big Meadows”, but did not reach its current size of 25,000 acres until 1963.

- Most of the reservoir is less than 60 feet deep when full.
- A water surface elevation of 4,474 feet results when the targeted minimum storage volume of 650,000 acre-feet is impounded. The annual high elevation occurs in May or June and is dependent on precipitation from the previous winter and carry over from the previous fall. Water surface level gradually declines to its targeted minimum in December or January. The decline in water surface elevation results in a significant decrease in the surface area of the reservoir.
- The reservoir is well-stratified from June through September. The epilimnion (warm upper layer) reaches to a depth of 30 feet, and temperature exceeds 20°C.
- The thermocline extends between 30 and 40 feet below the surface.

The hypolimnion extends from 40 feet below the surface to the bottom, with temperatures between 10 and 14°C. the hypolimnion decreases in volume throughout the summer and fall as the water surface elevation drops. The recreational fishery of the reservoir is of regional importance. Fish collected in surveys in 2002 included rainbow trout, brown trout, smallmouth bass, Sacramento sucker, brown bullhead, Sacramento pikeminnow, Sacramento perch, and carp.

### Geomorphology, Hydrology and Aquatic Resource Desired Condition

For each of the existing-condition topics addressed above, the following conditions are desired after the relicensing the NFFR hydropower system.

*Topic 1. Flow of North Fork Feather River below Canyon Dam*

- Streamflow that mimics the flow diversity of the natural flow regime by incorporating year-to-year and seasonal variations, including:
  - variation in base flow that is proportionately similar to variation in natural base flow (but reflecting the diminished magnitude of flow releases compared to the pre-project condition),
  - a bankfull pulse flow at least biennially during wet and normal years at times when natural pulse flows are occurring, and
  - a pulse flow that results in 80% floodplain inundation at least every 5 years during wet and normal years at times when natural pulse flows are occurring.

These changes should move the aquatic ecosystem towards the desired conditions described for Topics 2 through 11 below.

*Topic 2. Loss of Riverine Habitats*

- Accepting that continued loss of riverine habitat above Canyon Dam is unavoidable, improvement of the riverine habitat downstream of the dam through increase flow diversity as described for Topic 1.

*Topic 3. Floodplain Inundation*

- Seasonal inundation of portions of the pre-dam floodplain, as described for Topic 1

*Topic 4. Production and Distribution of Sediment and Channel Bed Material*

Sediment and bedload movement and interaction of channel with floodplains and vegetation, resulting in energy inputs and nutrient processing that more closely resemble those found in the pre-project system. Mobilization of channel bars at least biennially during wet and normal periods.

*Topic 5. Recruitment and Redistribution of Large Woody Debris*

- Increased recruitment and transport of large woody debris, resulting from increased flow diversity.

*Topic 6. Vegetation in the Floodplain*

- Less encroachment of vegetation into the floodplain as a result of pulse flows described in Topic 1.
- Riparian plant communities are regenerated at a natural rate and are therefore diverse and healthy, providing essential ecological functions such as nutrient filtering, erosion protection, adequate temperature regulation, and wood recruitment.

*Topic 7. Edgewater and Backwater Habitats for Amphibians and Fish*

- Water quality in the river is maintained at a high level to meet a variety of biological and recreational objectives.
- Increase in the amount of transitional edgewater and backwater habitats for amphibians and fish as a result of increased flow diversity.

*Topic 8. Environmental Cues for Aquatic Organisms*

- Environmental cues that mimic pre-dam conditions as a result of increased flow diversity.

*Topic 9. Physical Habitat for Aquatic Species*

- Improvement in the amount and quality of aquatic habitat for fish and other aquatic species as a result of increased flow diversity.

*Topic 10. Hydrologic Connectivity*

- Improved passage for aquatic organisms and movement of sediment and woody debris through restoration of pulse flows.

*Topic 11. Stream Temperatures*

- Summer maximum temperatures in the Belden Reach that support a self-sustaining coldwater fishery.
- Conservation of the current extent of the lake so as to maintain habitat that supports the regionally-important recreational fishery.
- Conservation of the volume of the coldwater pool for the benefit of coldwater-dependent lake fish.
- Sustenance of the wetland at the north end of the lake and associated benefits to wildlife.

Geomorphology, Hydrology and Aquatic Resource Rationale

Aquatic Management Strategy

The Sierra Nevada Forest Plan Amendment Record of Decision (January, 2004) contains provisions for the conservation of aquatic resources. The strategy for aquatic management provides broad goals summarized below, which are endpoints toward which management moves watershed processes and functions, habitats, attributes, and populations. Moving ecosystem conditions toward these goals will restore and maintain the physical, chemical, and biological integrity of watersheds and the water derived from them as mandated by the Clean Water Act, and will support the Forest Service's mission to provide habitat for riparian and aquatic-

dependent species under the National Forest Management Act, Organic Act, Safe Drinking Water Act, Endangered Species Act, and Electric Consumers Protection Act. The following goals are part of the Aquatic Management Strategy:

- **Water Quality:** Maintain and restore water quality to meet goals of the Clean Water Act and Safe Drinking Water Act.
- **Species Viability:** Maintain and restore habitat to support viable populations of native and desired non-native plant, invertebrate, and vertebrate riparian-dependent species.
- **Plant and Animal Community Diversity:** Maintain and restore the species composition and structural diversity of plant and animal communities in riparian areas, wetlands, and meadows to provide desired habitats and ecological functions.
- **Special Habitats:** Maintain and restore the distribution and health of biotic communities in special aquatic habitats to perpetuate their unique functions and biological diversity.
- **Watershed Connectivity:** Maintain and restore spatial and temporal connectivity for aquatic and riparian species within and between watersheds.
- **Floodplains and Water Tables:** Maintain and restore the connections of floodplains, channels, and water tables to distribute flood flows and sustain diverse habitats.
- **Watershed Condition:** Maintain and restore soils with favorable infiltration characteristics and diverse vegetative cover to absorb and filter precipitation and to sustain favorable conditions of stream flows.
- **Streamflow Patterns and Sediment Regimes:** Maintain and restore in-stream flows sufficient to sustain desired conditions of riparian, aquatic, wetland, and meadow habitats and keep sediment regimes as close as possible to those with which aquatic and riparian biota evolved.
- **Stream Banks and Shorelines:** Maintain and restore the physical structure and condition of stream banks and shorelines to minimize erosion and sustain desired habitat diversity.

A number of strategies have been adopted in order to achieve the above goals. Among the strategies is the utilization of Riparian Conservation Objectives. The Objectives contain linkages back to the broader aquatic management Goals. Within each Objective are a number of associated Standards and Guidelines. Standard and Guideline No. 106 commits the Forest Service to cooperate with other Federal agencies, tribal, State and local governments to secure in stream flows needed to maintain, recover, and restore riparian resources, channel conditions, and aquatic habitat. The Standard and Guideline further states that the Forest Service is to maintain in stream flows to protect aquatic systems to which species are uniquely adapted. The Forest Service is to minimize the effects of stream diversions or other flow modifications from hydroelectric projects on threatened, endangered, and sensitive species.

## Flow Regime Characteristics

Policy Direction: The Record of Decision for the Sierra Nevada Forest Plan Amendment Project, 2004 directs the Forest Service among other things to minimize the effects of stream diversions or other flow modifications from hydroelectric projects on threatened, endangered, and sensitive species as described above.

The flow regimes in the bypassed reaches currently consist of relatively low static minimum flow releases of 35 to 140 cubic feet per second (cfs). The flow releases are low relative to unimpaired (without project) flows. Some flow variance is provided by tributary streams but their contribution to variance is diminished when added to the Upper North Fork. The channel geometry of the Upper North Fork remains essentially the same as it was in pre-project times. Some minor incision into the ancestral riverbed has probably taken place but the river no longer has the power to effect channel forming processes. The pre-project riverbed is essentially frozen in time and hidden beneath a dense riparian cover. Dry season unimpaired baseflow is approximately 600 cfs. The existing 35 to 140 cfs (with project) flow releases change only in the Belden reach. The change in the Belden reach is minimal since only two flows are prescribed annually. During the vast majority of each year, the minimum flow is the only flow released into each bypassed reach. Since Lake Almanor is managed to avoid spills because of dam safety considerations, flow variance in the Seneca reach resulting from releases from Canyon Dam occurs only during scheduled exercise of release gates, extraordinary storms or major equipment or facility failure.

The North Fork Feather River evolved under a regime of occasional moderate flooding of long duration (24 hours) and extreme floods of short-term duration (6 hours). If it is assumed that the area now occupied by Lake Almanor accumulated coarse grained sediment because of low gradient and overtopping of streambanks, all of the coarse bedload material occurring below Canyon Dam had to come from below the large meadow system.

Rivers evolved with rare, high flow disturbance and more common, moderate flow disturbances. These disturbances are necessary for proper riverine function and result in a variety of aquatic and riparian life. Stable river systems as is the case of the current Seneca and Belden reaches tend to stagnate at lower levels of biotic complexity. Large “pulse” flows tend to generate large “pulses” of aquatic organisms and a great variety of organisms.

River substrate material needs to be disturbed, otherwise the material becomes impacted and the amount of surface area available to flow, oxygenation, and attachment points for aquatic organisms is kept low. Disturbing the substrate material increases the amount of surface area and the ability of water to flow through that material. This important attribute of naturally flowing rivers is lost in lakes and below many dams (Terry Benoit, 2003, personal communication).

Flood flows or artificial project caused pulses benefit aquatic resources indirectly from flooding adjacent streambanks and floodplains which results in the exchange or deposition of fine-grained sediment, organic material and large woody debris. Higher pulses have the potential to undercut

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banks and winnow finer materials from dry ravel deposits and landslides located adjacent to the stream thus adding new materials to the stream. Study results located in the Geomorphic Study (Volume 7, E3.1-12) shows that over-bank flow in portions of the Seneca reach begins at 700 to 1500 cfs with 900 to 1200 cfs discharges most common (Figures 5-25, 26, and 27, Geomorphic Study, Volume 7, E3.1-12).

Study results found in the Geomorphic Study (Volume 7, E3.1-12) shows that little cobble sized material is being transported and deposited in the Belden Forebay in spite of 54 days of discharges exceeding 1700 cfs at NF2. Additionally moderate numbers of rainbow trout redds were observed in the Seneca Reach. See IFIM Report (Volume 7, Appendix E3.1-10). The Sediment Incipient Motion Analysis (Volume 5, Attachment E2-A) shows that discharges in the Seneca reach required to initiate motion of 20 mm particles ranges from 100 to 450 cfs and that 30 mm sized material begins motion at discharges ranging from 300 to nearly 3000 cfs. With such a wide range it is difficult to select an optimum discharge for initiation of motion of any material size class.

The following is a listing of overarching characteristics of the North Fork Feather River. They helped to “scale” or define the boundaries of flow discussion. The result of discussions is a flow proposal designed to reinstate some of the seasonal biological triggers present in the river prior to construction of Lake Almanor and reestablishment of some component of fluvial geomorphic function by mimicking the pre-project hydrograph.

The results of various studies listed below focus and define the boundaries of the discussion hydrograph:

- 1) A gaging station (USGS 11399500) was installed on the North Fork near Prattville in January 1906. Review of the record showed that the annual hydrograph appeared unaltered by dam construction or reservoir operation through September 1911. This was determined by visual observation of the 1906 through 1911 annual water year hydrographs. The 1912 water year hydrograph and subsequent years was clearly different than the preceding years in that indicated discharges did not follow ordinarily expected patterns caused by rainfall or snowmelt.

1906 through 1911 water year hydrograph characteristics:

- October through mid-December: Slightly rising or steady discharge with some minor spikes. This period could extend into January. Flow is dominantly spring baseflow.
  - Mid-December to mid-April: Winter storm runoff from rain with 3 to 5 pulses. Baseflow steadily increases.
  - Mid-April through June: Snowmelt runoff with numerous small spikes in flow. Hydrograph is broadly dome shaped with no distinct peak.
  - July through September: Declining hydrograph with no or only minor pulses that represent a small percentage of existing flow.
- 2) The “without project” monthly median discharge of the North Fork from page 6 of the IHA analysis converted to a unit hydrograph.

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- 3) Weighted useable area for adult rainbow trout in the Seneca reach peaks at 250 cfs under the depth calibration method and reaches an inflection point at 250 cfs under the one velocity calibration method as indicated on pages 70 and 71 and pages I-4 and I-5 of Appendix I of the IFIM study.
- 4) An improvement in juvenile rainbow trout Weighted Useable Area and macroinvertebrate diversity as indicated on pages 71 and 72 of the IFIM study as discharge declines from the lowest modeled streamflow.
- 5) Results of the Sediment Incipient Motion analysis indicate that sediment incipient motion thresholds for gravel ranging from 20mm to 30mm ranged from 250 cfs to 700 cfs. Volume 5, Sediment Incipient Motion Analysis, Figure 15.
- 6) In general, 1,600 cfs to 3,000 cfs is a minimum discharge needed to mobilize median bed material from representative sites in both the Seneca and Belden reaches. Cobble size material (90mm to 256mm) is mobilized and transported in both the Belden and Seneca reaches at 2,300 cfs. Volume 7, Geomorphic Study, page 5-74.
- 7) Between 1,300 and 2,000 cfs is needed to rejuvenate bar sediments at Site S-2. Volume 7, Geomorphic Study, page 5-73.
- 8) Discharges sufficient to move gravel-sized material have occurred in the Belden reach 6 times since the 1950's and fewer times in the Seneca reach. Cobble sized material (90mm to 256mm) is being mobilized and transported in the Belden and Seneca reaches assuming that 2,300 cfs is required to initiate motion. In the Belden reach 7 of the last 30 years discharge has exceeded 2,300 cfs while the Seneca reach has experienced no discharge over 2,300 cfs. Volume 7, Geomorphic Study, pages 5-74 and 5-75.
- 9) Discharges between 700 cfs and 1,500 cfs inundate floodplains in both reaches. Discharges of this magnitude have about a 4-to-7 year return interval today but probably occurred annually prior to the project. Volume 7, Geomorphic Study, page 5-77.
- 10) The water temperature at which foothill yellow-legged frogs are likely to initiate egg laying is not known for the upper North Fork but is known for the Poe reach. Until better information is available it is assumed that egg laying will begin any time after the mean daily temperature for two consecutive days equals 10 degrees Centigrade.
- 11) Given the physical limitations of releasing water from Canyon Dam and the Belden Forebay as well as the close proximity of the Caribou road to the North Fork Feather in the Caribou reach it is impractical to expect channel forming flow releases from the project.
- 12) Moving sediments on portions of mid-channel bars is possible

The proposed negotiated flow proposal includes and recognizes the following fluvial and geomorphic constraints and conditions:

- 1) The full range of fluvial geomorphic function cannot be reestablished in the North Fork system because of operational procedures established for Lake Almanor and physical limitations of the release structures at Canyon Dam and Belden Forebay. Additionally, high flows can potentially damage the access road to the Caribou powerhouses.
- 2) Manipulation of streamflow alone will not control the abundance of blackberry vines.
- 3) It is possible to release sufficient water from Lake Almanor or the Belden Forebay to move spawning sized gravels.

- 4) It is possible to release sufficient water from Lake Almanor or the Belden Forebay to inundate the existing bankful condition.
- 5) Accretion flow between Canyon Dam and Caribou can be reasonably estimated.
- 6) Review of the 1906 through 1911 streamflow record at Prattville provides a basic understanding of pre-project flow characteristics.
- 7) The relationship between streamflow and rainbow trout spawning, juvenile, and adult habitat is known.
- 8) The time during which amphibian egg laying and tadpole development would occur if present is reasonably known.
- 9) Use of water year type to determine releases from Canyon Dam and Belden Forebay will better match the range of natural variability in precipitation.
- 10) There is a finite and reasonably quantifiable volume of cold water (<20 degrees Centigrade) in Lake Almanor.
- 11) Due to flow release constraints, large woody debris management will not be a component of the flow schedule other than that incidentally moved during pulse events.

### Flow Regime Development

A sub-group of the Collaborative was formed in order to focus discussion on a series of project flow regime proposals. Since the project is composed of several reservoirs and reaches, the first step in the flow development proposal process was to determine ecosystem and management attributes for each of the various project components. See Appendix 1 for a listing of ecosystem and management attributes developed by the collaborative subgroup for each project reach and reservoir. The attributes were arrayed in a table and identified by month as to whether the attribute was the “driver” of a critical biological or physical function or merely of secondary, non-critical importance. The rationale for selection of each attribute for a given reach or reservoir also appears in Appendix 1 of the Forest Service Preliminary 4(e) Conditions dated December 1, 2003.

The sub-group next prepared a series of “bookend” flow proposals spanning a wide array of objectives suggested by members of the Collaborative. These “bookend” proposals were issue or position driven and served the purpose of displaying interests in a flow format. As discussions continued the span of proposals began to diminish and several critical factors needing resolution or recognition prior to settlement on a final flow proposal emerged. The critical issues were: (1) Lake Almanor lake level during the summer recreation season, (2) Licensee’s requirement to deliver water downstream and fully exercise the Licensee’s water right, and (3) carryover storage in Lake Almanor following a wet water year is reflected in reservoir elevation for several years. The flow proposal developed for the Belden reach blends the desire to provide flow sufficient for production of native trout as well as providing angling opportunities in the lower portion of the reach. Removal of the fish barrier dam at Gansner Bar should allow rainbow trout from downstream to enter the Upper North Fork for spawning. Hardhead would also have access Upper North Fork for spawning.

Collaborative discussion of flow proposals revolved around how to best satisfy the Licensee’s desire to generate power and meet downstream water right commitments, the desire of community and business interests in the Almanor Basin to keep Lake Almanor high during the

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summer recreation months, and resource agency interests to modify flow releases to benefit aquatic processes by reintroducing flow variance that mimics natural flow. The proposed flow schedule does not completely satisfy all interests but it is a schedule that most participants can live with.

Table 1. Comparison of flow proposals on physical, biological, and social attributes of the Seneca and Belden reaches

Attribute	Reach			
	Seneca Existing	Seneca Proposed	Belden Existing	Belden Proposed
<b>Sediment Transport</b>	No pulse flows. Some flood flows	Pulse flow provided	No pulse flows. Some flood flows	Pulse flow provided
<b>Hydrologic Process (Natural Flow regime)</b>	Does not mimic	Mimics within constraints	Does not mimic	Mimics within constraints
<b>Rainbow trout: Spawning (% WUA)</b>	40	<b>96 - 99</b>	<b>99</b>	<b>96 - 99</b>
<b>Rainbow trout: Juvenile (% WUA)</b>	99	<b>86 - 98</b>	<b>96</b>	<b>86 - 98</b>
<b>Rainbow trout: Adult (% WUA)</b>	39	57 - 74	61	57 - 74
<b>Sacramento sucker: Adult (% WUA)</b>	25	45 - 62	49	45 - 62
<b>Hardhead Juvenile WUA (5 WUA)</b>	Not present	<b>74 - 92</b>	<b>88</b>	<b>74 - 92</b>
<b>Hardead Adult (% WUA)</b>	Not present	<b>88 - 100</b>	100	<b>88 - 100</b>
<b>Macroinvertebrate</b>	100	<b>67 - 98</b>	<b>93</b>	<b>67 - 98</b>
<b>Whitewater boating</b>	Not provided	Occasional March opportunity	Not Provided	Provided with threshold conditions
<b>Accretion Flow</b>	Accretion does enhance releases	Accretion does enhance releases	Little opportunity to enhance flow	Little opportunity to enhance flow
<b>Spawning Substrate Cleansing</b>	Not accommodated in flow schedule	Accommodated in flow schedule	Not accommodated in flow schedule	Accommodated in flow schedule
<b>Woody Debris</b>	Occasional high flows	Some distribution	Occasional high flows	Some distribution

	redistribute available pieces	of pieces	redistribute available pieces	of pieces
<b>Spawning Gravel Recruitment</b>	Occasional high flows redistribute gravel	Distribution and recruitment of gravel acceptable	Occasional high flows redistribute gravel	Distribution and recruitment of gravel acceptable

\* Bolded numbers indicate percentages past peak of WUA (Weighted Useable Area) curve.

**Sediment Transport:** Ability of the flows provided to move and redistribute desirable sediment sizes and flush undesirable sizes that tend to diminish the quality of spawning gravels.

**Hydrologic Processes (Natural Flow Regime):** Evaluation is based on how closely the flow regime approaches the natural flow regime without the project in terms of annual variation and tracking of water year type.

**Fish Habitat: Spawning:** Percent of maximum Weighted Useable Area.

**Fish Habitat: Juvenile:** Percent of maximum Weighted Useable Area.

**Fish Habitat: Adult:** Percent of maximum Weighted Useable Area.

**Hardhead, Juvenile and Adult Habitat:** With removal of the Gansner Bar fish barrier dam, hardhead will gain access to the reach. Hardhead are a Forest Service Sensitive species.

**Macroinvertebrates:** Percent of maximum Weighted Useable Area.

**Accretion Flow:** Accretion flow will ordinarily improve habitat conditions in a downstream direction. Little accretion flow occurs in this reach.

**Spawning Substrate Cleansing:** Does the flow schedule provide for cleansing and replenishment of trout spawning gravels?

**Woody Debris:** Degree to which variations in discharge and wetted area facilitate the distribution of large woody debris.

**Spawning Gravel Recruitment:** Evaluation based on the probability that the magnitude and variance in flow will entrain sediment delivered by tributary streams, cause some bank erosion, and winnow spawning sized gravel from landslide and dry ravel materials.

## Lower Butt Creek

No bypass or pulse flows are recommended at this time for Butt Creek below Butt Valley Reservoir. Large numbers of rainbow trout redds have been observed in the reach. Fine-grained sediment does not appear to adversely affect rainbow trout spawning. Provision has been made for pulse flows if monitoring appears that pulse flows would be beneficial.

## Ramping Rates

Ramping rates are primarily important with respect to user safety (during up ramp) and stranding of aquatic species (during down ramp). Proposed ramping rates are similar to those currently utilized by the Licensee.

## Solution to Existing Upper North Fork Project Aquatic Flow Regime Problems

To address the existing aquatic flow regime problems outlined in this rationale, the primary focus on the “Streamflow” 4(e) license condition, was to improve base flow conditions, seasonally vary the reach hydrographs to better match fish habitat and life cycle needs and to reintroduce pulse flows of sufficient magnitude and frequency to cleanse and in some cases move spawning sized and greater substrate materials. Monitoring of pulse flows will take place and flow magnitude will be modified if detrimental impacts are observed.

The Stream Flow Management section of the Relicensing Settlement Agreement addresses minimum stream flow, pulse flows, stream flow measurement, ramping rates and monitoring (Appendix A, Section 1, Table A-1 and A-2, 3, 4, 5, 6, 8, and 9).

Specified Relicensing Settlement Agreement stream flows for both the Beldan and Seneca reaches are a considerable improvement over existing baseline conditions. The Relicensing Settlement Agreement reestablishes a dynamic flow regime incorporating both inter-annual and intra-annual variation associated with the natural climactic cycle that is needed to support proper ecosystem function for a stream and coldwater fishery. The direct relationship between a dynamic flow regime and habitat diversity is well documented in the literature. (Instream Flow Council. 2002; Resh, et al., 1988; Poff, et al., 1997; Richter, et al., 1996; Heede, et al., 1990; Trush, et al., 2000; and Ward and Stanford, 1983).

- Minimum Stream Flows - Based on the Physical Habitat Simulation (PHABSIM) results (Volume 7, Upper NFFR Application), habitat values for trout life and other native fishes will significantly increase in both reaches during the time of the year when the PHABSIM results are applicable (March through September). (Instream Flow Council. 2002).

Winter base flows (October through February) will be higher in the Seneca and Belden reaches expanding the wetted perimeter, improve habitat diversity, thus protecting the potential for aquatic biota productivity over the winter months.

Existing stream flows in Butt Valley Creek will be maintained. The present flow regime provides excellent spawning habitat for rainbow trout residing in the Seneca Reach.

- Annual Flow Regime and Water Year Types - The annual flow regime will again be dependent on water year type (wet, normal, dry or critical dry) and will again mimic the annual natural hydrology. In the Upper North Fork Feather River, the normal peak runoff occurs during the winter/spring period (February –May) while and low runoff occurs during the summer/fall period. Aquatic and riparian organisms native to the Upper North Fork Feather River have genetically adopted their reproductive behavior to coincide with the annual high and low flow variations in the hydrograph. However, under the existing baseline flows, the natural flow regime no longer exists. The flow regime in the Upper North Fork Feather River is presently a flow flatline due to the minimal variance in seasonal discharges. The habitat diversity found under the natural flow regimen no longer exists under flatline conditions. Loss in habitat diversity means loss of species diversity and abundance. Biological diversity is greatest in communities subject to moderate levels of disturbance (Ward and Stanford, 1983). A moderate level of disturbance is normally associated with annual hydrological fluctuations associated with an unregulated stream. When Ward and Stanford (1983) plotted species richness of selected stream macroinvertebrate communities, the greatest diversity occurred in streams moderately disturbed. Low diversity occurs when there are infrequent disturbances such as we now see in the Upper North Fork Feather River below Canyon Dam and below Belden Forebay Dam.

Lack of the historical high winter/spring flows causes: 1) the stream channel to downgrade, 2) gravel bars and back waters once accessible for use by amphibians are lost, 3) the successful reproduction of riparian plants can be impacted, 4) the recruitment of spawning gravels needed by trout declines and 5) high flow are too infrequent to adequately cleanse the sediment that accumulates in the remaining spawning gravels. The results of these physical changes can reduce or eliminate the reproductive habitat for amphibians, trout, riparian plants and other aquatic dependant organisms (Resh, et al., 1988; Poff, et al., 1997; Richter, et al.,1996; Heede, et al.,1990; and Trush, et al., 2000.).

- Channel Maintenance Flows - To further assist in the improvement of aquatic and riparian habitat diversity, the Applicant has agreed to provide one pulse flow (Channel Maintenance Flow) release from both Canyon Dam (Seneca Reach) and Belden Forebay Dam (Belden Reach) in January, February and March during wet and normal years. Provisions for release of pulse flows into Butt Valley Creek below Butt Valley Dam are also included. (Resh, et al., 1988; Poff, et al., 1997; Richter, et al.,1996; Heede, et al.,1990; Trush, et al., 2000; and Ward and Stanford, 1983).
- Ramping Rates – Ramping rates are based on the knowledge gained from the Rock Creek-Cresta monitoring program and are to protect aquatic organisms from being dislodged or stranded during the winter pulse flows, summer recreation flows and other flow changes made for operational purposes.

- Monitoring and Adaptive Management – To evaluate the degree of success associated with the various flow improvements, the agreement includes a cooperative aquatic habitat monitoring program and provision for adaptive management.

## Reservoir Operations

To meet the ecological, cultural, aesthetic, social, economic, recreational, and Project operational needs, the Applicant has agreed to operational goals that will limit lake level draw down during the summer recreational period in the three project reservoirs (Lake Almanor, Butt Valley Reservoir and Belden Forebay). The California Department of Fish and Game has a fifty-year history directed toward developing and maintaining the popular reservoir fishery in Lake Almanor. The goal to keep spring through summer lake levels high and reduced fluctuations is not only important for maintaining a quality fishery and shoreline wildlife habitat but it adds value to the quality of the angling experience. In a survey of angler preferences in California, anglers considered the beauty of their surroundings an important factor when selecting a site to fish (Fletcher and King, 1988). Therefore, summer lake level is very important in attracting anglers to Project lakes.

## Water Temperature

The Relicensing Settlement Agreement is silent on water temperature criteria that assure the reasonable protection for a coldwater fishery. Appropriate project water temperature standards will be the subject of the State Water Resources Control Board water quality conditioning process for this project. Therefore the subject of reach water temperature will not be addressed here but the Forest Service does support the designation of the Seneca and Belden reaches as coldwater fisheries.

## Fish Stocking

The California Department of Fish and Game has a long history directed toward developing and maintaining the popular reservoir fishery in Lake Almanor. The fishery in Lake Almanor is primarily composed of salmonids (trout and related species) and bass (smallmouth and largemouth). Since the salmonid fishery is not self-sustaining, the Department annually stocks large numbers of hatchery-reared fish in Lake Almanor. The licensee has agreed to augment the Department's stocking program in Lake Almanor and to continue paying for the trout stocked in the Belden Reach. Many of the anglers who fish for the stocked fish utilize National Forest campgrounds and associated recreation enhancements.

## C. Water Quality

### License Conditions

No specific license condition

### Water Quality Existing Condition

It is recognized that the State Water Resources Control Board has jurisdiction over establishment of water quality standards and criteria. The Forest Service is vitally interested in maintenance of water quality in project reservoirs and reaches in order to maintain high quality habitat for aquatic and riparian dependent species. Several water quality concerns were identified during the relicensing process. These water quality issues directly affect the resources and management of National Forest System lands.

- Water temperatures have exceeded “cold water fishery” objectives in the Belden reach.
- Low water temperature during the summer months in the Seneca reach resulting from coldwater discharge from Canyon Dam may adversely affect growth of fish and other aquatic organisms.
- There is a strong hydrogen sulfide odor associated with water discharged from Canyon Dam in the fall.

### Water Quality Desired Condition

The desired condition for water quality as it is affected by this project includes:

- Meeting, or moving the existing condition towards achieving applicable Aquatic, Riparian, and Meadow Ecosystem and Associated Species Goals and Strategies, as directed by Forest Plans and the Sierra Nevada Forest Plan Amendment Record of Decision (2004).. Riparian Conservation Objective #1 (pge 35 of the Record of Decision) states “ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses.
- Aquatic, Riparian, and Meadow Ecosystem and Associated Species Goals and Strategies for water quality states: “Maintain and restore water quality to meet goals of the Clean Water Act and Safe Drinking Water Act, providing water that is fishable, swimmable, and suitable for drinking after normal treatment.”
- Implement Best Management Practices for protection or improvement of water quality, as described in *Water Quality Management for National Forest System lands in California*”.



## Water Quality Rationale

The “existing” and “desired” water quality conditions above show differences, some of which are the result of project facilities, operations and maintenance. Forest Service 4(e) license conditions in this resource area, as well as in the overlapping resource areas of recreation, hydrology, geomorphology, and hydropower generation will drive the existing water quality project condition towards the desired condition.

Cadmium monitoring during the first and second years following issuance of the new license will provide additional data using the ultra clean technology for the measurement of dissolved cadmium. Subsequent years will provide additional information to determine if dissolved cadmium that has been measured in the North Fork Feather River (during CTR additional study) is project related. Data collected during 2000 was inadequate because the detection limit for dissolved cadmium was too high to compare to the respective criteria (due to the low hardness conditions). Data collected in 2002-2003 in the relicensing study results showed dissolved cadmium exceeded the respective criteria at NF1- North Fork Feather River near Chester, LA1-S – Lake Almanor near dam surface sample, and BV1 – Butt Valley Powerhouse Tailrace. Further study is required to determine the cause and extent of the exceedence of this parameter. The regional board water quality criterion for specific conductance (150 mhos/cm) was exceeded at several stations in the North Fork Feather River during the CTR additional monitoring of 2002 and 2003 water quality monitoring program. *In situ* parameters (including specific conductance) can be collected during the additional monitoring for dissolved cadmium at the North Fork Feather River stations to provide more data for resource management decisions and to determine the cause of the exceedence of this parameter. After sufficient data has been collected, some or all of the monitoring parameters can be deleted if it is determined that they are not project related.

Fecal coliform monitoring in years 1-5 after issuance of the new project license provides an evaluation of the Licensee maintained campsites, day use areas, and boat dock around Lake Almanor and Butt Valley. Subsequent monitoring through the term of the license will provide additional information.. Some or all of the monitoring stations for the remaining monitoring years may be deleted after sufficient data has been collected and indicates the lack of a water quality issue. Funding for the sampling of Lake Almanor coliform will be part of the \$20,000 in matching funds that the Licensee and Plumas County agreed to for the water quality monitoring.

The silver, mercury, and PCB monitoring program will provide an indication of potential issues associated with bioaccumulation of these substances in adult fish in Belden Reservoir and Lake Almanor. Sampling in five-year increments will ensure that new adult fish are included in the monitoring program rather than potentially sampling the same fish in a year-to-year protocol. Some or all water quality parameters may be discontinued after sufficient data are collected to indicate a lack of a water quality issue.

Monitoring of temperature, dissolved oxygen, pH, hydrogen sulfide, iron, manganese, specific conductance, and turbidity will be measured at a number of locations. This monitoring program will provide data to evaluate the mitigation measures proposed for controlling the odor issue and dissolved metals at Canyon Dam and in the Seneca Reach of the North Fork Feather River. The

sampling will provide data for different water year types with two monitoring events for each of three water year types (wet, normal, and dry/critically dry). The program will be evaluated to determine the efficacy of the mitigation measure, and if required, the mitigation measure can be modified.

#### **D. Biological Resources**

##### License Conditions

- No. 26-Seneca, Butt Valley Creek and Belden Reach Biological Monitoring
- No. 31-Wildlife Habitat Enhancement
- No. 44-Special Status Species
- No. 45-Protection of Threatened, Endangered, Proposed for Listing and Sensitive Species Plan
- No. 46-Invasive Weed Management Plan
- No. 47-Bald Eagle Management Plan

##### Aquatic Resource Existing Condition

Changes to physical attributes outlined above have resulted in substantial changes in the aquatic communities of the project area, including:

- *Anadromous Fishes:* The NFFR within the project area once supported populations of both steelhead and spring-run Chinook salmon. These species were eliminated from the project area by construction of Big Bend Dam many miles downstream of the project in 1908. Oroville Dam located below the confluence of the forks of the Feather River in the foothills of the Sierra Nevada now precludes anadromous salmonids from entering the NFFR. Historically, adults returning from the ocean were a substantial source of nutrients for the system, and juveniles were undoubtedly abundant stream fishes.
- *Amphibian Species:* It is likely that both foothill yellow-legged frogs and Cascade frogs historically inhabited portions of the project area. Cascade frog habitat was lost when Lake Almanor was filled. Habitat for foothill yellow-legged frog has been lost as a result of reservoir inundation and lower stream flows. Additionally, habitat for both species has been degraded by changed sediment, flow, and water-temperature regimes, loss of edgewater habitat, and fragmentation of populations by dams and reservoirs.
- *Hardhead:* This Forest Service sensitive species was collected in 1981 in the lower project area (Moyle, 1983) and was found during entrainment monitoring at Belden Forebay in 2000. The species was probably once more abundant in the lower project area. No hardhead were found during project fish population surveys.
- *Non-Native Fish:* Only 10 of the 26 fish species found in the project area are native. The more a stream has been altered by human activity, the more likely it is to be dominated by introduced fishes (Moyle, 2002). Historically, fish assemblages in tributaries to the Sacramento River had low species richness.

- *Entrainment:* Fish are entrained at the intakes to Prattville, Caribou 1 and 2, and Belden Powerhouses and are drawn through the powerhouses.

### Aquatic Resource Desired Condition

- Physical conditions that favor native over non-native species.
- Operations that minimize entrainment of native species.
- Flow releases that mimic the dynamic nature of natural systems in which native communities evolved.
- Increased and more seasonally variable instream flows released to the Project bypass reaches that can establish an aquatic condition more closely resembling the natural range of variability inherent in the watershed as defined in the Sierra Nevada Forest Plan Amendment (2004) Record of Decision Goals for Aquatic, Riparian, and Meadow Ecosystems and Associated Species. .
- Populations of invasive non-native fish species are largely confined to project reservoirs.
- Invasive non-native fish species that may yet be introduced to project waters would be maintained at levels where they do not significantly compete with species native to the watershed.
- Water quality in the Upper Feather River drainage is maintained at a high level to meet a variety of objectives including promoting trout fisheries.
- Plant communities in riparian areas and wetlands are diverse and healthy, and provide essential ecological functions such as nutrient filtering, erosion protection, adequate temperature regulation in winter and summer, down wood and other debris that contribute to stability and needed habitat complexity.
- Provide for aquatic species by maintaining the health and functionality of the aquatic habitat to which these species are uniquely adapted through implementation of Riparian Conservation Area Desired Conditions (Sierra Nevada Forest Plan Amendment Record of Decision (2004)). Applicable Desired Conditions include:
  - Water quality meets the goals of the Clean Water Act and Safe Drinking Water Act.
  - Habitat supports viable populations of native and non-native plant, invertebrate, and vertebrate riparian and aquatic-dependent species. New introductions of invasive species are prevented. Where invasive species are adversely affecting the viability of native species, the appropriate State and Federal wildlife agencies have reduced impacts to native populations.
  - Species composition and structural diversity of plant and animal communities in riparian, areas, wetlands, and meadows provide desired habitat conditions and ecological functions.
  - The distribution and health of biotic communities in special aquatic habitats perpetuates their unique functions and biological diversity.

- Spatial and temporal connectivity for riparian and aquatic-dependent species within and between watersheds provides, physically, chemically and biologically unobstructed movement for their survival, migration and reproduction.
- The connections of floodplains, channels, and water tables distribute flood flows and sustain diverse habitats.
- Soils with favorable infiltration characteristics and diverse vegetative cover absorb and filter precipitation and sustain favorable conditions of stream flows.
- In-stream flows are sufficient to sustain desired conditions of riparian, aquatic, wetland, and meadow habitats and keep sediment regimes as close as possible to those with which aquatic and riparian biota evolved.
- The physical structure and condition of stream banks and shoreline minimizes erosion and sustains desired habitat diversity.

### Aquatic Resources Rationale

The prescribed instream flow releases will measurably increase aquatic habitat variables that are conducive to an expanded aquatic ecosystem. Achieving a greater wetted perimeter, more diverse water depths, and a more naturally variable range of water velocities will produce measurably greater overall fish habitat. This condition better represents the natural range of variability otherwise inherent in the watershed.

The prescribed instream flow discharges to the Project bypassed reaches are a fraction of the flows naturally inherent to the same portion of the Upper North Fork Feather River watershed. Scientific evidence currently available to the Forest Service, however, strongly indicates that the prescribed flows will substantially increase and diversify aquatic riverine habitat. Aquatic organisms, including fish species, will therefore ultimately increase significantly in numbers, diversity, and overall health.

It is in the best interest of all parties to document the responsive changes to the Project bypassed river reaches to ensure that the desired conditions are ultimately achieved. The ensuing technical reports must also recommend changes that could more effectively achieve those conditions when and wherever applicable.

Benthic aquatic invertebrates comprise the foundation of the food web critical to all aquatic carnivores, including fish. The organisms are also indicative of the overall aquatic habitat condition in which they occur because different kinds of taxa predominate in differing habitat conditions.

The portion of the Feather River comprising the Project bypassed reaches and reservoirs will receive increasing public visitation pressure into the foreseeable future. Watershed development adjacent to Project facilities may also occur. The prescribed benthic invertebrate sampling will be key to monitoring the status of the aquatic populations that could be affected by Project-related disturbance sources. It is possible that, due to their primary role in the aquatic food web,

changes to the basic composition of the aquatic invertebrate fauna over time may be evident through this sampling prior to the changes becoming evident by fish or hydrologic sampling.

Hardhead, a Forest Service sensitive species is currently not present or only present in low number in the Belden bypass reach. Removal of the Gansner Bar fish barrier dam will likely make the Belden reach accessible to hardhead. Due to the status of hardhead, it is important for the Forest Service to assure that changes in the Project license do not adversely affect this species and move it on a trend towards listing. Removal of the Gansner Bar fish barrier dam should improve hardhead populations by making additional area available for spawning and rearing.

Monitoring the effects of the new instream flow regime would provide a better understanding of how the timing, magnitude, and duration of both high and low flows meshes with the timing of rainbow trout and hardhead spawning. Any future consideration of whitewater boating will depend on this knowledge to determine when this type of activity would be least detrimental to native fish. While amphibians such as foothill and mountain yellow-legged frogs have not been observed in the project area, it is possible that they may someday occupy the area. At that time monitoring information will be critical to management or altering the timing of pulse and whitewater boating flows.

#### Terrestrial Resources Existing Condition

- The Lake Almanor basin contains habitat for several bird species that are listed as threatened or endangered under the Endangered Species Act or are considered by the Forest Service to be sensitive species:
  - Bald eagle – Found primarily along the west shore and causeway (north end of Lake Almanor). Available habitat includes nesting and roosting sites in conifer stands adjacent to the lake.
  - Willow flycatcher – Found along the NFFR adjacent to Lake Almanor and in the wetlands at the north end of the reservoir. Required habitat includes willow shrubs with slow moving water. Occurrences are often associated with beaver activity.
  - Sandhill crane – Found within the causeway area north of Highway 36. Habitat needs include open wetlands and marsh.
  - Osprey – Numerous nests are located along the shore of Lake Almanor. Nesting and roosting takes place in conifer stands adjacent to the lake.
- Lake Almanor supports a number of waterfowl and shorebirds that either migrate through the area or are year-long residents. A great blue heron rookery has been reported to be located within the Belden reach downstream from Lake Almanor.
- Three bald eagle nest sites are located at Butt Valley Reservoir.
- Butt Valley Reservoir provides some habitat for waterfowl and shorebirds. Habitat may be limited due to freezing of the reservoir during winter.

- Portions of the Belden Reach were burned by the Storrie Fire in 2000. Patches of snags and an increase in the amount of shrubs on the slopes above the NFFR provide a unique but transitory habitat.
- No forest carnivores are known to occur within the project area.
- Surveys for bats were recently conducted primarily in and around structures associated with the project. A variety of species were found, however none of the bats conclusively identified are listed on the Region 5 sensitive species list.
- The recently delisted (1999) peregrine falcon is found on steeper slopes in the Seneca Reach. The nesting status is unknown.
- Both the Plumas and Lassen National Forests recognize riparian hardwood species as part of the Management Indicator Species (MIS) group. This group (including willow, aspen, alder, and cottonwood) is present throughout the project area. In addition to osprey, other MIS that likely occur within the project area are woodpeckers (pileated and hairy), bear, deer, bufflehead duck (Lake Almanor), mallard, Canada goose, and western gray squirrel. Currently little or no information is available about the numbers of these species, and occurrences within the project area likely fluctuate yearly with annual migration.
- Noxious weed surveys resulted in the location of 145 occurrences of eight noxious weeds in the project area (Appendix E3.3-1, Final License Application). The following noxious weeds were identified:
  - Spotted knapweed *Centaurea maculosa* A-rated
  - Dalmatian toadflax *Linaria genistifolia* ssp. *dalmatica* A-rated
  - Hairy whitetop *Cardaria pubescens* B-rated
  - Canada thistle *Cirsium arvense* B-rated
  - Cheat grass *Bromus tectorum* C-rated
  - Yellow star-thistle *Centaurea solstitialis* C-rated
  - Klamathweed *Hypericum perforatum* C-rated
  - Bouncing-bet *Saponaria officinalis* C-rated

Weed rating is based on a system adopted by the California Exotic Pest Council. A rated weeds are targeted for eradication or containment. B rated weeds are more widespread and difficult to contain and C rated weeds are most widespread and control efforts are not ordinarily undertaken except in nurseries or seed lots.

Himalayan blackberry, although not listed by California Department of Food and Agriculture as “noxious”, is widely accepted as an invasive exotic plant. It was found throughout the NFFR corridor from the Belden Powerhouse to approximately 4200 feet elevation at Butt Valley Reservoir. However, this species was not mapped. Himalayan blackberry has grown to such a density in many locations that river access for recreational activities is not possible. Also, blackberry density may be reducing native plant regeneration.

- Occurrences of special status plants should generally not be threatened by the operation of Licensee’s facilities (Appendix E3.3-1, Final License Application).
- Special status plants at the Last Chance Marsh area could be threatened by widely fluctuating water levels. A few species could be threatened by noxious weed populations in close proximity and that share the same habitat (Appendix E3.3-1, Final License Application).

Terrestrial Resources Desired Condition

- Project operation does not have an adverse effect on bald eagle occupancy and productivity.
- Project operation does not have an adverse effect on osprey occupancy and productivity.
- Variations in Lake Almanor surface elevation do not adversely affect sandhill crane nesting and rearing habitat.
- Variations in Lake Almanor surface elevation do not to adversely affect willow flycatcher nesting habitat.
- Project operation does not adversely affect peregrine falcon occupancy and productivity within the project area.
- Corrective action is taken if monitoring of peregrine falcon eyries indicates that project activities have indirect effects to the productivity of peregrine falcon.
- Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives.
- Native riparian plant communities are diverse and have multiple seral stages.
- Noxious weed infestations on project lands are controlled by following a pre-determined management strategy as outlined in a noxious weed management plan. The plan is periodically reviewed by Licensee and the Forest Service and modified as necessary. The plan contains the following elements:
  - Prevention – Use of certified weed-free gravel for roads and certified weed-free mulch when available. Clean ground disturbing equipment prior to project initiation.
  - Containment and suppression – Conduct control measures on all identified A- and B-rated noxious weeds on the project site with appropriate phenological timing to prevent seed dispersal. Control all A- and B-rated weeds at all Licensee facilities with appropriate phenological timing to prevent seed dispersal. Control all A- and B-rated weeds on all Licensee roads with appropriate phenological timing to prevent seed dispersal. Control C-rated weeds of special concern.
  - Monitoring – Plan specifies yearly monitoring with appropriate phenological timing to identify A-, B-, and C-rated weeds prior to seed dispersal.

The area occupied by Himalayan blackberry does not adversely affect stream access or water-oriented recreation activities along the North Fork Feather River. Himalayan blackberry stands and patches that hinder recreational access/use and native plant regeneration are controlled.

Control options are selected from pre-approved management strategies that complement the noxious weed management strategy. Access locations where vegetative treatment options will be evaluated are identified. Control strategies include an evaluation of planting native vegetation to shade the vines to reduce growth and encroachment on the river.

### Rationale for Terrestrial Resources

There is obvious overlap between aquatic and terrestrial biological resources, especially as they relate to habitat for aquatic flora and fauna, and land management activities as they relate to upland biological resources. Discussions for this resource are limited to those not covered elsewhere in this document.

How the Licensee manages project fee title lands and operates associated hydroelectric facilities has direct and indirect effects on National Forest biological resources. Biological resource license conditions were developed to restore or move the resources towards a condition that maximizes health and diversity of habitat as required by Forest Service comprehensive plans and other laws and regulations. Conditions were specifically designed to:

- Manage habitat for Federally listed T&E, candidate, State listed, and other special status species.
- Implement land and vegetation management activities for upland wildlife habitats.
- Manage riparian/aquatic/wetland habitats through a well-balanced flow regime,.
- Manage exotic species/noxious weeds so they do not interfere or degrade ecological function of native species or impair recreational experiences.
- Operate project facilities so they do not unduly harm or impede developing life stages.

Monitoring of biological resources becomes an important component of any license, as it is through this means that it can be determined if resource objectives are being met, and if not, what possible changes in license conditions are needed. Therefore, biological monitoring is also a license condition.

### Rationale for Noxious Weed Management Plan

Noxious weeds pose a threat to the economic and ecological functions of ecosystems in the Sierra Nevada (USDA, FS Sierra Nevada Forest Plant Amendment 2001, volume 1). The spread of noxious weeds and nonnative invasive plant species reduces biological diversity, impacts threatened and endangered species and wildlife habitat, modifies vegetative structure and species composition, changes fire and nutrient cycles, and degrades soil structure.



Millions of acres of public lands in the West are undergoing a massive change due to the spread of invasive non-native plants (USDA, Forest Service 1998). Current inventories indicate that weeds are spreading at an increasing rate within the region.

Increased public awareness has initiated changes in noxious weed management within the state. Weed Management Areas (WMAs), which promote coordinated weed management across jurisdictional boundaries, now cover much of the state. National Forests have become active participants in WMAs. The California Department of Food and Agriculture, along with county agricultural commissioner offices, have increased efforts to address the statewide problem of noxious weed spread.

The primary goals of the USFS Region 5 noxious weed strategy are:

- Increase the understanding and awareness of noxious weeds and the adverse effects they have on wildland ecosystems.
- Develop and promote implementation of a consistent integrated pest management approach. Institutionalize consideration of noxious weeds in all planning and project analyses.
- Develop strong partnerships and cooperation with private landowners, county governments, state and federal agencies, extension service, universities, and the research community for a consolidated and united approach to managing invasive species.

As listed in the Forest Service Manual, 2080.2, Noxious Weed Management Objectives; it is the intention of the Forest Service to use an integrated weed management approach to control and contain the spread of noxious weeds on National Forest System lands and from National Forest lands to adjacent lands. Specific objectives to be achieved through noxious weed management include:

- Prevention of the introduction and establishment of noxious weed infestations.
- Containment and suppression of existing noxious weed infestations.
- Formal and informal cooperation with state agencies, local landowners, weed control districts and boards, and other federal agencies in the management and control of noxious weeds.
- Education and awareness of employees, users of National Forest System Lands, adjacent landowners, and state agencies about noxious weed threats to native plant communities and ecosystems.

The Plumas National Forest Land and Resource Management Plan states as a forest-wide general direction to "maintain viable populations of sensitive plant species." The forest-wide standards and guidelines direct the Plumas National Forest to "Protect sensitive and special interest plant species as needed to maintain viability. Inventory and monitor sensitive plant populations on a project-by-project basis. Develop species management guides to identify population goals and compatible management activities and/or prescriptions that will maintain viability."

The Sierra Nevada Forest Plan Amendment Record of Decision (2004) includes Standards and Guidelines for noxious weed management. A number of the guidelines are specific to this project and include direction for prevention of new noxious weed infestations, monitoring, employee awareness, control, and coordination of effort between agencies and cooperator.

#### Rationale for Bald Eagle Management Plan

This plan is needed to ensure the continued recovery of the species. The plan is made necessary by the Endangered Species Act (ESA), by Forest Service direction, and the Lassen and Plumas National Forest Land and Resource Management Plans. There are additionally Licensee management decisions regarding use of their lands that can affect bald eagle management on adjacent landownership, such as National Forest.

#### Rationale for Wildlife Mitigation and Monitoring

The proposals are mostly for non-TES species that are impacted by project operations.

- There is one peregrine falcon territory near the Seneca reach corridor. The species was recently de-listed but as part of the ongoing efforts to ensure recovery monitoring of the nest territory will continue.
- Several species of bats were found rooting in Licensee facilities. Where not unreasonable, a policy of accommodation has been adopted.

The development of a Wildlife Habitat Enhancement Plan for Licensee owned lands between Last Chance Campground and the flood control channel will provide a framework for improvement projects in what is probably the most critical aquatic and terrestrial habitat located along the perimeter of Lake Almanor.

#### Species Plan Rationale for the Protection of Threatened, Endangered, Proposed for Listing and Sensitive

This condition is necessary for the Licensee and the Forest Service to comply with the Endangered Species Act, the National Environmental Policy Act, the Northwest Forest Plan, current Forest Service direction, the two applicable Forest Land and Resource Management Plans and the Sierra Nevada Forest Plan Amendment Record of Decision (2004). There are a number of both botanical and wildlife species that are within “special status” designations and Project effects on these species must be considered.

During the project botanical survey, 114 occurrences of 12 special-status plant species were located. While the plant locations are primarily not threatened by Licensee facilities and operations, the possibility remains that changes in operation or establishment of new plant locations might threaten sensitive plant occurrences. The 4(e) condition for Threatened, Endangered and Sensitive plant species are necessary in order to meet Forest Service requirements of maintaining habitat and viable populations for the purpose of eventual de-listing of Sensitive plants that are found on both Forests. The 4(e) conditions are also necessary to

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Rationale for 4(e) Terms and Conditions  
Upper North Fork Feather River Project, FERC No. 2105

minimize or eliminate direct and indirect impacts from management activities on Threatened, Endangered and Sensitive plants unless the activity is designed to maintain or improve plant populations, and to evaluate all proposed projects for potential Threatened, Endangered, or Sensitive plant habitat.

## **E. Archaeological Resources**

### License Conditions

No. 43-Heritage Resources

### Archaeological Resource Existing Condition

- Seven cultural resource properties within the Area of Potential Effect (APE) are located on lands administered by the USDA Forest Service. Of those 7, 4 have been determined ineligible for listing on the National Register of Historic Places (NRHP). The remaining 3 cultural resource properties, although not evaluated, are considered eligible for listing on the NRHP.
- The 3 eligible cultural resource properties (CA-PLU-284/H, CA-PLU-1718, LA-38) have been adversely affected by the existing project. Many project-related activities or forces adversely affecting these resources (e.g. wave action) are on-going and will continue with continued project operation.
- The Licensee has developed a draft agreement entitled *Programmatic Agreement among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer for Managing Historic Properties that may be Affected by a License Issuing to Pacific Gas & Electric Company for the Continued Operation of the Upper North Fork Feather River Project (FERC 2105) in Plumas County, California*. The agreement stipulates that upon FERC relicensing of this project, the Licensee will begin implementation of a cultural resources management plan.
- Licensee has completed a Cultural Resources Management Plan for this undertaking. The plan describes general and site-specific treatment options using a tiered and staged strategy for managing the cultural resources. Licensee would produce an annual report detailing its compliance activities.
- Little to no public education about, or interpretation of, cultural resources within the APE is currently conducted.

### Archaeological Desired Condition

- The project Cultural Resources Management Plan is implemented; and compliance, as well as effectiveness of compliance, are reviewed annually by the Licensee; and action is taken as necessary to assure compliance with the plan.

Enclosure 2

Rationale for 4(e) Terms and Conditions  
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- Plans for public education and interpretation of cultural resources have been integrated into recreation management plans.

### Archaeological Resource Rationale

The purpose of the project cultural resources management plan is to guide management of historic properties within the APE of the project. The licensing of the project is a federal undertaking. FERC is obligated to comply with Section 106 of the National Historic Preservation Act, which requires proponents of any federal undertaking to take into account the effect of the undertaking on historic properties, and affords the Advisory Council on Historic Preservation an opportunity to comment on the undertaking prior to issuance of the license (16 U.S.C. 36CFR 1800).

## **G. Land Management and Aesthetics**

### License Conditions

- No. 39-Traffic Use Survey
- No. 40-Land Management and Visual Resources Protection
- No. 41-Vegetation Management Plan
- No. 42-Road Management Plan

### Land Management and Aesthetics Existing Condition

- Licensee facilities require periodic painting, light to heavy maintenance, and upgrading to meet current operational standards. In particular, structures require periodic painting and maintenance to maintain aesthetic appeal.
- The existing Licensee operated maintenance buildings located at the Prattville Intake visually dominate the Lake Almanor shoreline area.
- Spoil piles located on the Caribou Road at Oak Flat are clearly visible for the road and detract from the scenic quality of the area.
- The Butt Valley-Caribou Road (27N60 and 27N26) is quite dusty during the summer. The dust is a potential driving hazard.
- The historic structures located at the Caribou Village are in need of maintenance to prevent deterioration of the buildings and loss of historic character and value.
- An assessment of the risk posed by vegetation growing in the vicinity of project features has not been prepared.

- Page 235 of the project draft Environmental Impact Statement references the occurrence of 350 small fires in the Lake Almanor region between 1981 and 2001. The September 2000, Storrie fire came quite close to project facilities located in the Belden reach.
- Volume 8, Appendix E5-L of the project License Application displays the number of vehicles counted in the Seneca and Belden area between April and October. Observations of vehicles location in the Butt Valley, Seneca, and Belden reaches is displayed in sections E5.2.2.4.3, E5.2.2.4.4, and E5.2.2.4.5.
- Project facilities are located in a forested setting with heavy live and dead fuels.

#### Land Management and Aesthetics Desired Condition

- Visual conditions as a result of activities and projects meet adopted visual quality objectives (VQO) displayed in the PNF and LNF LRMPs.
- Where effects of past management activities did not meet adopted VQOs, visual rehabilitation during facility maintenance has been used to achieve the objectives.
- The metal siding and roof of the Prattville Intake Structure has been painted a dark green color similar to the current color.
- Evergreen trees have been planted between the Prattville Maintenance buildings and the shoreline of Lake Almanor to reduce visual domination of the buildings on the shoreline area. Tree survival to ensure successful establishment through the first three summers is being conducted.
- The Oak Flat spoil piles along Caribou Road have been regraded or removed to create a more natural rolling topography along the roadside and where possible moved farther from the road. Native plantings have where possible between planted along the road and the spoil piles to help screen the active use areas from passing motorists.
- In consultation with the Plumas National Forest, dust palliatives have been applied or other measures have been adopted, including regular grading, to help minimize dust emissions and improve the lower segment of the Butt Valley-Caribou Road.
- Following consultation with the Plumas National Forest on color selection, paint the Belden Powerhouse penstocks, surge chamber, and other powerhouse facilities seen from Highway 70 to reduce visual contrast when maintenance or repair work is scheduled.
- Building exteriors and landscaping of the old clubhouse facility and grounds at the Caribou Village are maintained to preserve the historic features and character of the facilities. Consultation with the Plumas National Forest takes place when maintenance or repair activities are to take place to help preserve, as practical, the historic and visual appeal of the village landscaping and structures.
- An annual meeting takes place between the Licensee, Forest Service and Plumas County to coordinating ongoing project related land management activities including recreation management and use, fire suppression and related forest health activities, and the planning for commercial, residential and industrial developments.

- Forest fuels surround project facilities are managed to minimize threats from wildfires to project facilities or the surrounding forest.

#### Land Management and Aesthetics Rationale

The Lassen and Plumas National Forest Land and Resource Management Plans define Visual Quality Objectives (VQO) for National Forest System lands in the project area. The Forest Service manual describes the visual management system, including the definition of various VQOs, how they are determined, and how they can be achieved. VQOs for the project area are intended to provide various degrees of a natural-appearing landscape. However, existing project facilities and operations are clearly visible on the landscape, with buildings, dams, and penstocks contrasting sharply with the surrounding forested setting. Project roads, campgrounds, and appurtenant facilities are also obvious to the casual observer. The desired conditions for this project would involve decreased conflicts with the established VQOs, while allowing for continued operation of the project.

The Sierra Nevada Forest Plan Amendment Record of Decision (2004) document among other things states that management of forest fuels to reduce the threat of catastrophic wildfire is of paramount importance. Management of fuel will reduce the threat to communities located in the urban wildland interface and the threat to wildland ecosystems. Licensee recreation facilities are located in wildland settings near the communities of Chester and Canyon Dam. Caribou Village operated by the Licensee in support of the Caribou 1 and 2 powerhouses is essentially an island in a forested ocean. Belden powerhouse is located across the North Fork Feather River from the community of Belden. The Sierra Nevada Forest Plan Amendment Record of Decision (2004) has established standards for the management of forest fuels located near communities at risk. Licensee facilities pose a risk to the surrounding forest from a project related fire and are at risk from a wildland fire approaching the facilities.

## **H. Recreation**

#### License Conditions

- No. 28-Recreation River Flow Management
- No. 29-Belden Interagency Recreation River Flow Management Plan
- No. 32-Recreation
- No. 33-Recreation Operations and Maintenance
- No. 34-Interpretation and Education (I&E) program
- No. 35-Recreation Monitoring Program
- No. 36-Resource Integration and Coordination Program
- No. 37-Recreation Resource Management Plan (RRMP) Review and Revision Program
- No. 38-River Ranger

#### Recreation Existing Condition – Facilities and Use

- Recreation facilities and use areas in the study area are owned and operated by several different entities including:

- Pacific Gas & Electric Company (Licensee),
  - Lassen National Forest,
  - Plumas National Forest, and
  - Private entities.
- 24 public developed recreation facilities are in the Project area: 12 campgrounds, 7 day use areas, 3 boat launches, and 2 recreation trails.
  - Approximately 50 dispersed recreation sites are in the Project area. These sites were identified through an inventory of all publicly accessible shoreline areas in the area; 22 sites are around Lake Almanor, 20 sites are in the Belden Reach, 3 sites are around Butt Valley Reservoir, and 2 sites are in the Seneca Bypass Reach. In addition, multiple sites are in the Southwest Shoreline Access Zone at Lake Almanor. Although there are a number of dispersed recreation sites induced by this Project, it is critical to note that the public is not using many of these sites appropriately. For example, both the Forest Service and Licensee have either orders or policy prohibiting overnight camping and campfires in dispersed sites around Lake Almanor. Licensee also prohibits vehicles below the 4,500 foot contour line (PG&E datum). Yet illegal camping, campfires, and vehicle usage are common occurrences at Lake Almanor. These uses are resulting in resource damage as addressed later in more detail in Rational.
  - 22 privately owned and operated recreation facilities surround Lake Almanor. These facilities are operating either on privately owned land adjacent to Licensee-owned land or on Licensee-owned land where written agreements are in place for utilizing the adjacent land.
  - Private recreation facilities at Lake Almanor are generally more developed than Forest Service and Licensee facilities. Private interests offer boating opportunities by means of marinas, gas docks, and boat rentals, and a wide variety of overnight accommodations by way of resorts, cabins, motels, and condos. These opportunities are not provided by the Forest Service or Licensee in the Project area.

#### Public Recreation Sites and Facilities at Lake Almanor

- The following facilities are present at Lake Almanor:
  - 6 campgrounds with 245 developed campsites (64% of total project area developed campsites).
  - 23 group campsites, at least 30 overflow campsites, and 40 primitive campsites.
  - 6 day use areas with 61 picnic sites (84 % of total project area picnic sites).
  - 2 boat launches.
- Most of the private and Licensee facilities at Lake Almanor are in good condition and require only maintenance; however, some repairs are needed, primarily of picnic tables, toilets, water faucets, and boat ramps. However, most recreational facilities on National Forest System lands do not meet current Forest Service standards including: “Meaningful

Measures Condition of Facilities” standards (which includes facilities not meeting current recreational vehicle design specifications such as length, width, etc.), Forest Land and Resources Management Plan standards and guidelines, and current Americans with Disability Act accessibility standards

- An estimated 22 dispersed undeveloped recreation sites are located adjacent to Lake Almanor (47 % of total project area dispersed recreation sites). 14 of the 22 lakeshore sites (64 %) provide vehicle access to the shoreline. Overnight camping occurs at some of these sites. Specifically, overnight use was documented at 12 dispersed sites (55 %). The remainder of the dispersed sites shows signs of day use only. Additional sites are located in the Southwest Shoreline Access Zone of Lake Almanor. However, as discussed in the 3<sup>rd</sup> bullet under this Existing Condition heading above, not all of this use is legitimate in the Lake Almanor area. While some on the historical day use in this area meets current policy, overnight use, campfires, and vehicles below the 4,500 foot contour elevation (PG&E datum) lake level do not meet that policy and regulations.

#### Public Recreation Sites and Facilities at Butt Valley Reservoir

- The following facilities are present at Butt Valley Reservoir:
  - 1 day use area/boat launch with 3 picnic sites (4 % of total project area picnic sites) and one boat ramp.
  - 2 campgrounds with 91 developed campsites (24 % of total project area campsites).
  - 20 overflow campsites.
- Most of the facilities at Butt Valley Reservoir are in good condition. Most facilities require only maintenance; however, some minor repair is needed, primarily of access roads, cooking grills, and water faucets.
- 3 dispersed, undeveloped recreation sites are adjacent to the reservoir (6 % of total dispersed recreation sites).

#### Public Recreation Sites and Facilities in the Seneca Reach

- The only developed facility at the Seneca reach is the 1.5-mile fishing access trail beginning at the Caribou 1 Powerhouse.
- A few dispersed, undeveloped recreation sites are located in the Seneca reach. These sites are primarily used for dispersed overnight camping.

#### Public Recreation Sites and Facilities in the Belden Bypass Reach

- The following facilities are present at the Belden Bypass Reach:
  - 1 day use area with 4 picnic sites (5 % of total picnic sites in project area).
  - 3 campgrounds with 46 developed campsites (12 % of total developed campsites in the project area).



- Most facilities in the Belden reach are in good condition, with only minor maintenance needed at each of the campgrounds. However, some recreation facilities at Belden Rest Stop along State Route (SR) 70 are in need of maintenance or repair.
- 20 dispersed undeveloped recreation sites are located in the Belden reach (49 % of the total dispersed recreation sites in the project area). These sites are used primarily for dispersed overnight camping. Many of the sites may function as informal overflow areas for the developed campgrounds provided by the Forest Service.
- In addition to the developed recreation facilities provided by the Licensee and the Forest Service and the dispersed recreation sites, an informal parking area at the Belden Forebay provides fishing and hiking access to the forebay.

#### Other Recreation Resources

FERC requires that licensees provide information on National Recreation Trails and federal Wild and Scenic Rivers. The nearest Wild and Scenic River is the Middle Fork of the Feather River, which is distant from, and not potentially affected by the project. The Pacific Crest National Scenic Trail (PCT) is near the project area. It is one of eight National Scenic Trails, spanning 2,650 miles from Mexico to Canada through three western states. The PCT generally runs in a north-south direction west of the project area, crossing Highway 36 approximately 6 miles west of Lake Almanor. The PCT does run through one of the developed recreation sites in the project area: the Belden Rest Area on SR70. This highway rest area serves as a trailhead for the PCT.

The Lake Almanor Recreation Trail (LART) has been nominated and is currently pending designation as a National Recreation Trail. The trail meets the criteria for a National Recreation Trail in part due to the scenic views of Lake Almanor, which is a Project induced facility and recreational feature of the area.

Portions of Highways 36, 89, and 147, which encompass Lake Almanor, were designated in February of 2003 as a portion of the “Volcanic Legacy All American Road”, a national designation that extends from Crater Lake to Susanville. An All American road is the highest designation in the nation for a scenic byway. Scenic values contributed by Project waters, and associated resources and recreation helped substantiate this designation.

#### Recreation Existing Condition – Impacts of Developed Recreation Sites and Use Areas

The following is a summary of observed use impacts at the develop recreation sites described above:

- Almost two-thirds (63 %) of the developed sites have areas of erosion; however, impacts are generally minimal.
- Over half (54 %) of the developed sites have areas of bare ground; however, these areas are small and are generally confined to the ground near fire rings and picnic tables.

- Over half (54 %) of the developed sites are in areas where the surrounding forest has been generally cleared of downed wood for use in campfires. However, some areas, such as the current Forest Service group campground and overflow area at Lake Almanor have 90 % bare ground, necessitating the complete rehabilitation and revegetation of this site as required in the Forest Service recreation 4(e) Conditions.
- Less than one-quarter (21 %) of the sites are located in or adjacent to riparian areas; and impacts on these sensitive areas as a result of visitor use appear to be minor.
- A small number (8 %) of the sites are located in or adjacent to wetland areas; however, impacts on these sensitive areas as a result of visitor use appear to be minor.
- Less than 20 % of the sites have been impacted by vegetation damage, litter, improper sanitation, or vandalism.
- Lake Almanor, the Licensee's largest Project forebay has induced high concentrations of human use around the lake shoreline. Almanor Campground, overflow area, and other Forest Service recreational facilities in the Lake Almanor area do not currently meet Forest Service Land and resource Management Plan standards and guidelines for other resources. Vegetation is disturbed and missing, erosion is occurring, riparian vegetation is damaged, and among other things, there is excessive litter and human waste around Project waters.

#### Existing Condition – Impacts of Dispersed Recreation

Use of the undeveloped, dispersed recreation sites described above can be characterized as follows:

- Almost two-thirds (64 %) of the sites have evidence of campfires and are utilized for overnight use.
- Almost two-thirds (64 %) of the sites adjacent to Lake Almanor currently provide for vehicle access to the shoreline or exposed low-pool areas of the reservoir.
- Over one-third (34 %) of the sites have evidence of off-highway vehicle (OHV) use, primarily in the low-pool areas of Lake Almanor, which are below the closure area imposed (but not enforced) by the Licensee. This usage is causing vehicle oils and fuels to enter Project waters due to inappropriate vehicle access to the edge of the lake. In other areas, OHV damage is currently occurring at the Forest Service overflow camping area. Here a vernal pool, providing critical habitat for *Orcuttia tenuis* a Threatened and Endangered listed plant, is being damaged by OHV use. Other sensitive plants and other resources on National Forest System lands are being adversely affected by illegal OHV use.
- Over half (57 %) of the sites are located in or adjacent to riparian areas, mostly in the Belden Reach.
- Over one-fifth (21 %) of the sites are located in or adjacent to wetland areas.
- Overall use levels (based on impact area) at the sites vary widely:

- Over one-fifth (21 %) of the sites have high levels of use.
- Almost half (47 %) of the sites have moderate levels of use.
- Almost two-thirds (32 %) of the sites have low levels of use.

The following is a summary of observed use impacts at these undeveloped sites:

- Over one-third (34 %) of the sites have areas of erosion; however, the impacts are generally minimal.
- Almost one-third (30 %) of the sites have evidence of vegetation damage, primarily to trees near the sites.
- Over one-quarter (26 %) of the sites have areas of bare ground; however, these areas are not extensive and are generally confined to the ground near fire rings.
- One-quarter (25 %) of the sites are in areas where the surrounding forest has been generally cleared of downed wood for use in campfires.
- A small number (11 %) of the sites have high amounts of litter.
- Less than 4 % of the sites have been impacted by litter, improper sanitation, vandalism, or the illegal dumping of household debris. Although Licensee acknowledges a small percentage of dispersed recreation sites as being impacted by litter, improper sanitation, and vandalism, the Lake Almanor area has a high percentage of these problems. Concentrated human use of the limited public shoreline has resulted in dispersed areas with high litter, vehicle fuel issues as previously addressed, and high levels of human waste adjacent to (and sometimes within) the low lake level pool. These issues must be addressed in this relicensing to provide for compliance with water quality standards, Land and Resource Management Plan standards, and other applicable laws and regulations.

### Recreation Desired Condition

Desired recreation conditions would result in high quality public recreation experiences on National Forest System lands.

#### General Conditions

- A diverse array of recreational opportunities is provided – both developed and dispersed – that meets visitor and local community needs and is compatible with recreation carrying capacity, other local conditions, and biological and other resource objectives.
- A recreation plan is in place that is designed and implemented based on use triggers.
- Existing campgrounds, day use areas, trails, and boating facilities are expanded consistent with specific demand and resource-capability thresholds.

## Specific Conditions

- Additional scenic drives, vista points, and photo points are developed.
- Safe swimming and beach-use opportunities are provided.
- Whitewater boating opportunities are provided in the river reaches consistent with biological constraints and facility availability.
- Lake level is maintained from Memorial Day to Labor Day at an elevation that does not adversely hinder visual resources or recreation opportunities.
- River reaches provide dispersed, water-oriented recreation opportunities.

## Facility Access

- Adequate and safe access to facilities is provided.
- Vehicle access and OHV use is maintained at an adequate distance from Project waters and other sensitive resource areas to avoid contamination by vehicle fuels and oils, and to provide protection of fragile resources.
- Facilities in the project area comply with the American with Disabilities Act requirements.

## Facility Maintenance

- Facilities are maintained to Meaningful Measures standards.
- Upgrade and expand Almanor Campground and other Forest Service recreational facilities in the Lake Almanor area to meet the Lassen National Forest Land and Resource Management Plan and the October 27, 2003 “Almanor Campground Restoration Project” environmental document.
- Trails within the project area are maintained as needed for specific management objectives.
- Heavily used sites are hardened to reduce erosion and vegetation damage.

## Increased Licensee Responsibility

- It is desirable to transfer maintenance of Forest Service boat launches, campgrounds, and day use areas within the project area to the Licensee, under agreements that will result in high quality service to the public.
- Trends in site condition are monitored by the Licensee and compared with current baseline data, and facilities are improved, replaced, rehabilitated, or expanded by the Licensee to accommodate increased use over the license period.

- A project-wide interpretive plan emphasizing opportunities along the two State of California scenic byways and the All American Road in the project area has been developed and implemented jointly by the Forest Service and the Licensee.

#### Public Information

- Streamflow information for project-affected reaches is available to the general public and is adequate for water-oriented recreation use.
- Visitors have access to information about OHV regulations, impacts of visitor pedestrian use near water bodies (erosion and water quality degradation), impacts of gathering firewood near recreation sites, and regulations that prohibit campfires in some areas.

#### Recreation Rationale

This project has induced a large increase in recreational use, and increased the diversity of recreational experiences available to the public. Lake Almanor and Butt Valley Reservoir created by this project provides lake settings that provide new recreation opportunities including swimming, boating, water skiing, and lake fishing. Without this project it is likely that the Butt Valley area would have remained relatively undeveloped with some campgrounds constructed to accommodate demands much lower than currently experienced while the Chester area would have developed at a much slower rate. It is likely that without the project a road would have been built along the Belden bypass reach in the same location as the current Caribou road but the road would probably be paved only as far as Queen Lilly Campground. The road as currently configured, with pavement extending to the Caribou Village, provides opportunities for driving for pleasure, bird watching, picnicking, hunting and other outdoor pursuits that would be less satisfying if the road was not paved.

Currently approximately 11 percent of the perimeter of Lake Almanor is composed of National Forest System lands. The remaining perimeter lands are either privately owned or owned by the Licensee. The non-Licensee owned perimeter lands have been subdivided into many hundreds of parcels mainly occupied by single-family dwellings. The Lake Almanor recreation anomaly is that while the lake is one of the largest in California, public access is limited to National Forest System lands, Licensee lands and a limited number of private marinas and other points of access. There is little additional National Forest System land adjacent to the reservoir that is available for recreation development. Potentially available land is constrained by wildlife habitat needs. It has been a long-standing policy of both the Forest Service and the Licensee to locate the most highly developed project recreation facilities at Lake Almanor.

National Forest constructed and operated recreation facilities in some cases are located adjacent to Licensee operated facilities and are the direct result of Project induced recreation. Funding of recreation facility upgrades and improvements through a partnership between the Licensee have the following benefits, especially in the Lake Almanor area:

- It allows leveraging of capital improvement monies. Eventual assumption of operating responsibilities of National Forest campgrounds and associated facilities located within the project licensed area by the Licensee will result in economies of scale reductions in

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maintenance costs. The public would be better served by turning over Forest Service Lake Almanor recreation facilities to the Licensee, as Forest Service funding is often too low and unpredictable to adequately maintain facilities and meet growing needs.

- The Licensee is capable of realizing all receipts received from the recreational facilities that provides significantly more revenues back in the facility for maintenance and standard upgrades over the life of the license. Currently, the Forest Service is only able to realize about 60 % of the profits to be used at the facilities.
- The Forest Service has provided funding and obtained grants (such as recent Department of Boating and Waterways grants) for all recreational funding for facilities located on National Forest System lands but induced by this hydroelectric Project since it was constructed many decades ago. Since presence of the project reservoir is responsible for inducing the large influx of tourists on National Forest lands, it is appropriate that the Licensee provide the funding for the management of these facilities during the upcoming license period. It is important to note that the Forest Service has not given up all funding support for Project induced recreation. The Forest Service will among other things, continue funding 60 % of facility reconstruction at Lake Almanor facilities, as well as completing existing grants, providing administrative support to the Licensee, providing maps, brochures, and information to the visiting public at Forest Service facilities.
- Licensee is able to provide more consistent management over the life of the license than the Forest Service, which is subject to changing budgets based on Congressional appropriations. Additionally, adjacent lands will be managed more consistently rather than by ownership, reducing visitor confusion over management practices.
- Management by the Licensee is consistent with the Lassen Land and Resource Management Plan that provides for land management that minimizes administrative costs, that cost effectively serves the public, that allows expansion of the existing infrastructure to accommodate current and future demand including facilities for recreational vehicles.
- To provide more of the funding into the facilities in a more efficient and consistent manner should result in improved public service and increased user satisfaction.

In order to achieve certain operational efficiencies, it is desirable that transfer of operational and maintenance responsibilities for Forest Service campgrounds and associated recreation facilities at Lake Almanor be transferred to the Licensee no later than January 1, 2009. The Forest Service and Licensee shall enter into an operations and maintenance agreement to clarify responsibilities. The operations agreement shall address, but may not be limited to: Forest Service operation and maintenance standards, water, sanitation, Recreational Vehicle (RV) dump station, trail maintenance, capital improvement responsibilities, and campground road maintenance. To offset operation and construction costs, Licensee, in accordance with the Commission and Department of Boating and Waterways regulations, may charge Forest Service approved user fees at Forest Service facilities. The licensee will also be required to request a project boundary adjustment within 60 days of assuming operation of included facilities

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Recreation development at Butt Valley Reservoir has focused on a more primitive recreation experience in an attempt to provide a wide spectrum of opportunity from highly developed at Lake Almanor to primitive at Butt Valley Reservoir. Public response favors the approach.

There are no formal recreation opportunities available in the Seneca bypass reach. The reach is located in a steep and narrow canyon crossed by a single public road at Seneca. Fishing opportunities are limited and would be attractive to those desiring a strenuous and difficult hike to a fishing area. No recreation facilities or river access are planned for this reach. While no whitewater boating flows are proposed for this reach, the March pulse flow is designed to provide a “shelf” or pause in the down ramping portion of the pulse that is suitable for boating. It is anticipated that few boaters will take advantage of the opportunity due to the probability of very cold water, uncertain weather, and minimal hours of daylight.

Several campgrounds and numerous dispersed recreation sites are located on the Belden bypass reach. All recreation developments on the reach are operated and maintained by the Forest Service. This arrangement, with the exception of the expectation that the Licensee will fund minimal whitewater boating put in and take out facilities should boating take place, will continue.

It is the desire of the Forest Service and other participants in the Upper North Fork Collaborative process to continue coordination and adjustment of management objectives for the Project area as a whole. A number of stakeholders have oversight and interest in various natural resources, commercial, and community interests that can be impacted both positively and negatively by recreational pursuits. By having specific coordination meetings, results of surveys, and other input from prior years can be reviewed. Data from ongoing recreation surveys will assist in making any needed changes in management of the area and for future planning.

An interpretive plan will coordinate the types and delivery of information to assist existing users and, more importantly, potential users to orient them to the project resources and facilities. There is a tremendous need for information concerning such things as: What kind of wildlife will I see? Where can I launch a boat? What hiking trails exist in the area? What is the pre-historic and historic history of the area? A plan will look at these needs and project how best to get information to the audience.

A number of facility improvements are requested. These improvements will directly serve the National Forest, as is the case of Almanor Campground, or will serve to facilitate access and use of the project area by visitors to project lands and adjacent National Forest areas, as is the case of Almanor Beach improvement, local boat launch access, Almanor Boat Launch improvements, Dyer View Day Use, Canyon Dam Boat Launch and Day Use, and Belden Bypass Reach boating put-in and take-out.

### Recreation River Flow Management

The objective of river flow management for recreation is to provide an appropriate range of flows within the Belden bypass reach to enhance an overall spectrum of river recreation

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opportunity within the North Fork Feather River Canyon, that are consistent with other resource objectives (as identified by the Plumas National Forest Land and Resource Management Plan, the Sierra Nevada Forest Plan Amendment Record of Decision (2004), and the Sacramento and San Joaquin River Basin Plan as adopted by the Central Valley Regional Water Quality Control Board.

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