

**Review of Low Impact Hydropower Institute Application  
for  
Low Impact Hydropower Certification  
Goat Lake Hydroelectric Project  
Prepared by Fred Ayer  
Executive Director, LIHI**

**Introduction and Overview**

This report reviews the application submitted by Alaska Power and Telephone Company (applicant or AP&T) to the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification for the Goat Lake Hydroelectric Project. The facility is located at Goat Lake which is seven miles north of Skagway, Alaska and is fed by a glacier at its south end. The lake is situated on a perched cirque valley at Elevation 2925. The lake has a drainage area of 4.2 square miles, and lies east and south of the Skagway River.

AP&T applied to the Federal Energy Regulatory Commission (FERC) for an original hydropower license and to the U.S. Forest Service (FS) for a special-use authorization to operate the project on the Tongass National Forest. The FERC licensed the project in 1996 for the operation and maintenance of the 4 megawatt (MW) facility.

To facilitate decisions whether to issue the hydropower license and special-use authorization, the FERC and FS staffs jointly prepared the final environmental assessment to evaluate how the proposed project (FERC No. 11077) would affect environmental resources in the Goat Lake drainage area and determine whether additional protection or mitigation measures may be needed to protect and improve the environmental resources and provide the best comprehensive development of the waterway.

Project and site characteristics. The hydroelectric facility is a storage project with a 4 MW capacity that started operations in 1997. The Lake is used as a reservoir without any dam. Goat Lake is a very deep natural lake. Inflows to the lake come from precipitation and glacial runoff. The glacier covers about 1.7 square miles and contributes approximately 80-85% of its runoff to the lake. The glacier which is located above the moraine at the south end of the lake, also provides runoff to a catch basin below Goat Lake and to Pitchfork Falls, which descends about 2,100 feet in elevation from the pond to its confluence with the Skagway River.

A siphon intake extends into the lake a horizontal distance of 395-feet to obtain 185-feet of submergence or an elevation of 2740, potentially drawing the lake down to the approximate elevation 2885 at peak use during the winter. The intake is connected to a siphon pump by a 30-inch polyethylene penstock which changes to a 28-inch steel penstock approximately 82-feet before the siphon house. The siphon pump connects with the valve house via a 704-foot-long 30-inch penstock. The valve house has a 28-inch pipe that runs to elevation 2610-foot elevation where the penstock transitions to a 24-inch steel penstock to the powerhouse.

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At the 900-foot elevation the penstock crosses under a historic railway via a 40-foot-long pipe conduit. At the 777-foot elevation the penstock passes through a 48-inch pipe conduit over the Skagway River, to the west bank, to the powerhouse at elevation 769-feet. The powerhouse contains one Pelton turbine and associated 4.0 MW generator. A tailrace transport the turbine discharge approximately 70-feet to the Skagway River.

AP&T operates the project using the normal outflow from Goat Lake to generate power. They also draft Goat Lake during periods of low runoff and high energy demands.

Public comment and agency letters. LIHI did not receive any comment letters on this application for certification.

General conclusions. The resource agency staff contacted in the course of this review universally described the project as a low profile low impact project with minimal issues; grayling fishery (stocked), and visual considerations, both of which are resolved.

Recommendation. Based on my review of information submitted by the applicant, my review of additional documentation, and my consultations with resource agency staff, I believe the Goat Lake Hydroelectric Project meets all of the criteria to be certified and I recommend certification. Regarding Watershed Protection, the USFS has since licensing of this project wanted to keep access to it limited. They have resisted suggestions to place a trail to the lake and to put a recreation cabin on the lake. Because this project is primarily on USFS lands and they limit development, this provides a buffer to the watershed. The project does not have to provide its own buffer because of the USFS position on keeping the lake a primitive experience. Based on this, I recommend the certification term be 8 years.

### Low Impact Certification Criteria

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#### A. *Flows*

- 1) **Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?**

**YES.**

**Background** – The record for this project shows that flow issues are focused exclusively on aesthetic or visual resources, specifically those related to Pitchfork Falls.

Pitchfork Falls is a scenic attraction that contributes to the aesthetic quality of the area. It is the focus of viewers from the highway overlooks and from the railcars that pass by the falls.

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Pitchfork Falls is also mentioned in publications describing the area attractions. Project operation would reduce flows over Pitchfork Falls that could affect the aesthetic quality of the falls. As a mitigative measure the FERC license (Article 105) required that AP&T maintain during twelve daylight hours, in Pitchfork Falls, as measured above the railroad tracks, the following continuous, minimum flows:

May 1 through September 30	13 cfs
October 1 through April 30	0 cfs

The FERC licensee said that AP&T may temporarily modify minimum flows if required by operating emergencies beyond the control of the licensee. AP&T may also modify minimum flows for short periods upon written consent of the Forest Service.

On September 4, 1996, FS issued a special use permit for the project, which also required the above minimum-flow release.

In 2005, AP&T requested that article 105 be amended to: (1) reduce the required minimum flow from 13 to 8.5 cfs; and (2) change the present violation criteria for this minimum flow requirement from “any time flows drop below the required minimum flow” to “flows below the required minimum flow for more than two consecutive hours.” AP&T also requested that such flow-deviation events be considered a reportable violation only if there is more than three such occurrences in any given month.

In its May 27, 2004 letter to FS, AP&T notes that FS’s Visual Quality Objective (VQO) for Pitchfork Falls was changed from “Retention” to “Partial Retention” after issuance of the project’s special use permit. AP&T also notes that a visual impact analysis conducted in 1994 had determined that a 13-cfs flow met the previous VQO for the falls, and an 8.5-cfs flow was the lower limit for meeting this previous objective. Given that the VQO for the falls has been reduced, AP&T requested FS to reduce the permit’s minimum-flow requirement from 13 to 8.5 cfs.

On August 13, 2004 AP&T reduced the required minimum flow over the falls for a short period to photograph the falls with a flow of 8.5 cfs. In a follow-up letter to FS dated September 16, 2004, AP&T requested the agency’s determination as to whether a flow of 8.5 cfs is adequate to maintain the VQO for Pitchfork Falls, based on its evaluation of photographs that were taken of the falls on August 13. Also in its September 16 letter, AP&T requested FS to respond to proposed changes to the present criteria for reporting minor flow deviations below the required minimum flow. As discussed during previous meetings between AP&T and FS, flows are monitored at the falls in 15-minute intervals, but flows released at the project require approximately one hour to reach the downstream gauging site at the falls. Because of this time lapse, and the flow variations that naturally occur within this drainage area, minor deviations from the required minimum flow are occasionally recorded at the project. To obtain relief from reporting these minor recorded events, AP&T requested that it be required to only report low-flow events that are more than 2 cfs below the required minimum for more than two consecutive hours and only after the fourth such occurrence in any given month.

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By letter to AP&T dated December 9, 2004, FS states that it would approve the licensee's proposal to reduce the required minimum flow from 13 cfs to 8.5 cfs because: (1) the reduced flow would meet the Partial-Retention VQO stipulated in the 1997 Forest Plan for Tongass National Forest; and (2) reducing the required flow would increase the project's hydroelectric production, reduce the licensee's dependence on diesel generation, and reduce diesel fuel consumption by thousands of gallons annually. FS also states that it recognizes there is an unavoidable delay from the time a flow less than the required minimum flow is detected and corrected at the project until the corrective action can be seen at the falls. Because of this delay, and the watershed's natural flow variations, FS proposed that a flow below 8.5 cfs for two consecutive hours or more be considered a low-flow threshold and that more than three such occurrences in any given month be considered a violation of the required flow. In offering this counter proposal, FS observed that under AP&T's proposal, a flow as low as 7 cfs would not be considered a minimum-flow violation because it would not be more than 2 cfs below the required 8.5-cfs flow. Also, FS indicated that it considers three low-flow events in a month, instead of four, to be the appropriate frequency beyond which such deviations would constitute a violation.

FS further states in its December 9 letter that provided the Commission agrees with the above proposals, it would work with AP&T to modify the project's special use permit. Finally, FS advised AP&T that if excess hydroelectric generating capacity becomes available within the licensee's customer service area in the future, it could increase the project's flow-release requirement back to 13 cfs to enhance the unique visual characteristics of Pitchfork Falls for public enjoyment.

On February 25, 2005, FERC issued a public notice of AP&T's application to amend article 105. FERC received two responses during the 30-day notice period. By letter filed March 16, 2005, the United States Department of the Interior, Office of Environmental Policy and Compliance, states that it has no comments on the proposal. By letter filed March 16, 2005, FS expresses support for the licensee's amendment application. Specifically, FS indicates that the proposal meets the agency's VQO for Pitchfork Falls, and reflects the agency's proposed criteria for what constitutes a violation of the required minimum flow.

*If YES, go to B.*

**PASS.**

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## **B. Water Quality**

- 1) Is the Facility either:**
    - a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or**
    - b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?**
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**YES.**

Water quality in the proposed project area complies with applicable state standards. AP&T conducted water quality studies during August 1992, March and July 1994, and January and March 1995. Water samples for the study were collected from the surface of Goat Lake, 25 feet below the lake surface, and from the Skagway River above and below the outlet of Pitchfork Falls.

Dissolved oxygen levels ranged from 7.1 milligrams per liter (mg/l) to 12.2 mg/l in Goat Lake and from 8.2 mg/l to 9.8 mg/l in the Skagway River. Turbidity levels ranged from 1.49 nephelometric turbidity units (NTU's) to 9.11 NTU's in Goat Lake and from 0.47 NTU's to 44.2 NTU's in the Skagway River. The pH levels ranged from 6.8 to 7.25 in Goat Lake and from 7.11 to 7.51 in the Skagway River. Conductivity levels ranged from 35 microsiemens per centimeter ( $\mu\text{S}/\text{cm}$ ) to 54.6  $\mu\text{S}/\text{cm}$  in Goat Lake and from 23  $\mu\text{S}/\text{cm}$  to 64.2  $\mu\text{S}/\text{cm}$  in the Skagway River.

Temperature profiles were developed for Goat Lake in August 1992, July 1994, and March 1995. The temperatures in Goat Lake ranged from 0.0° Celsius (C) to 5.5°C with no significant thermal stratification in any single profile.

Although the State has chosen to waive 401 water quality certification, they have been involved in the FERC licensing of Goat Lake and in 1994 sent AP&T a letter which states, "I have reviewed the water quality data from Goat Lake which you forwarded me...I do not see any parameters of concern."

Both state and federal resource agency staffers we spoke with generally felt the water quality met state water quality standards. One agency staffer described the water quality as "Fantastic, it's pristine, the kind of water quality others dream of!"

*If YES, go to B2.*

**2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?**

NO.

*If NO, go to C.*

**PASS.**

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### **C. Fish Passage and Protection**

**1) Is the Facility in Compliance with *Mandatory Fish Passage Prescriptions* for upstream and downstream passage of anadromous and catadromous fish issued by Resource**

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## Agencies after December 31, 1986?

**NOT APPLICABLE.**

*If NOT APPLICABLE, go to C2.*

Anadromous fish do not get closer than several miles downstream of the project tailrace due to natural obstructions or barrier falls.

In April 1994, AP&T and the ADFG conducted a fish survey in the Skagway River upstream and downstream of the Pitchfork Falls outlet. During the survey, no fish were captured or observed. The survey report showed that existing habitat conditions are extremely poor because of the high gradient and lack of overwintering and rearing habitats. The survey results indicate that this section of the Skagway River does not support any significant fish populations.

Goat Lake is a coldwater, nutrient-poor lake that historically has not supported fish populations. The ADFG and the FS recently conducted an experimental stocking of Arctic grayling in Goat Lake in an effort to establish a naturally reproducing fish population that would support a fly-in sport fishery.

In Scoping Document 2, FERC identified one aquatic resource issue for analysis:

"Whether project drawdowns would limit Arctic grayling access to spawning streams entering Goat Lake, should a population become successfully established."

During the scoping process FERC received comments on this issue from the FS, the ADFG, and AP&T. The commenters stated that the effects of a 20- to 30-foot drawdown on the entrances to the spawning streams would not be known until after the areas were exposed.

The ADFG stocked the lake with 1,000 immature Arctic grayling in 1994 and 1995; however, a fishery survey conducted after the 1995 stocking found no surviving population. 1994 was the same year that the applicant filed their license application with FERC. After conducting a population survey in 2001-2002 the applicant monitored the graylings access to their spawning stream to determine if the lake drawdown exposes any barriers to their movement into the stream to spawn. In 2005, the third year of the referenced grayling study, grayling were observed in the spawning stream every year, indicating that there is not a barrier to their movement when the lake is drawn down.

Based on the findings of the ADFG survey conducted after the June 1995 stocking, FERC concluded that no Arctic grayling population has established in Goat Lake, eliminating any potential project effects.

- 2) Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the**
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**fish run is extinct)?**

**NO.**

Anadromous fish do not get closer than several miles downstream of the project tailrace due to natural obstructions or barrier falls.

*If NO, go to C3.*

**3) If, since December 31, 1986:**

- a) **Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C2a above), and**
- b) **The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,**
- c) **Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?**

**NO**

*If NO, go to C5.*

**5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of *Riverine* fish?**

**NOT APPLICABLE.**

*If NOT APPLICABLE, go to C6.*

**6) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?**

**NOT APPLICABLE.**

*If NOT APPLICABLE, go to D*

**PASS.**

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**D. Watershed Protection**

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**1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline?**

Yes, there is a buffer zone. Since the project was licensed, the USFS has wanted to keep access to it limited. They have resisted suggestions to place a trail to the lake and to put a recreation cabin on the lake. Because this project is primarily on USFS lands and they limit development, this provides a buffer to the watershed. The project does not have to provide its own buffer because of the USFS position on keeping the lake a primitive experience.

The FS manages the area to retain its roadless and wildland character. Major recreational facilities would not be developed. The developed recreational facilities that exist outside of the basin consist of FS cabins, dispersed campsites, and picnic areas. The National Park Service operates the Klondike Gold Rush National Historical Park that includes a visitor center in Skagway and a campground in Dyea.

Because of the difficulty in accessing the Goat Lake basin, very little recreational use occurs in the vicinity of the lake. Major recreational activities in the project vicinity are dispersed activities such as hiking, fishing, and sightseeing. The most common activity is sightseeing. Sightseeing tours are provided by the WP&YR RR, several highway tour operators along the Klondike International Highway, and aircraft companies.

Since the licensing of the Goat Lake Project the USFS has wanted to keep access to the project area limited. They have resisted suggestions to place a trail to the lake and to put a recreation cabin on the lake. Because this project is primarily on USFS lands and they limit development, this provides a buffer to the watershed. The project does not have to provide its own buffer because of the USFS position on keeping the lake a primitive experience.

Since the project occupies land of the Tongass National Forest, the FS has authority under Section 4(e) of the FPA, to impose mandatory conditions on any hydropower license the Commission would issue for the project. In its May 9, 1996, letter, the FS filed with the Commission, the following preliminary 4(e) conditions for the license, and stated that the final 4(e) terms and conditions for the license would be provided within 45 days after issuance of the Joint FEA:

- ◆ Condition No. 1 - Requirement to Obtain a FS Special-Use Authorization
  - ◆ Condition No. 2 - FS Approval of Final Design
  - ◆ Condition No. 3 - Approval of Changes After Initial Construction
  - ◆ Condition No. 4 - Consultation
  - ◆ Condition No. 5 - Minimum Steamflow Regime
  - ◆ Condition No. 6 - Guaranteed Priority Flow Bypass Device
  - ◆ Condition No. 7 - Visual Resource Protection Plan
  - ◆ Condition No. 8 - Erosion Control Plan
  - ◆ Condition No. 9 - Solid Waste and Waste Water Plan
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- ◆ Condition No. 10 - Hazardous Substance Plan
- ◆ Condition No. 11 - Cultural Resource Protection
- ◆ Condition No. 12 - Fish and Wildlife Mitigation Plan

**YES**

*YES = Pass, go to E*

**PASS.**

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### **E. Threatened and Endangered Species Protection**

#### **1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?**

**YES**

The Forest Service (FS) conducted an extensive plant survey of the project area on July 27, 1993. The survey area included:

- (1) the proposed penstock corridor from the intake at the lake downgradient to the top of Pitchfork Falls,
- (2) the existing outlet at the lake to the top of Pitchfork Falls,
- (3) the subalpine meadow/montane forest mosaic in the general project area,
- (4) the lower part of the moraine, and
- (5) montane forest in the Pitchfork Falls vicinity.

Only one of the 22 plants designated as sensitive by the FS Regional Forester was located. (FS sensitive plant species are those for which population viability is a concern, as evidenced by (a) significant current or predicted downward trends in populations numbers or density, and (b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution).

This plant, the goose-grass sedge (*Carex lenticularis* var. *dolia*), is also a species of special concern by the US Fish and Wildlife Service (FWS). A FS plant survey of the project area revealed that the goose-grass sedge was found above the east side of Goat Lake at about 4,000 feet msl, outside the project area (letter from Mary Clay Stensvold, Regional Botanist, U.S. Forest Service, Sitka Ranger District, Sitka, Alaska, April 29, 1994).

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There are no other listed plants by the FWS in the project area that are threatened, endangered, candidate or species of special concern.

The FWS states that the following federally-listed animal species may occur in the proposed project area as transients, particularly during seasonal migration: endangered American peregrine falcon and Arctic peregrine falcon (letter from Nevin D. Holmberg, Field Supervisor, U.S. Fish and Wildlife Service, Juneau, Alaska, August 21, 1992; personal communication, John Lindell, Endangered Species Biologist, U.S. Fish and Wildlife Service, Juneau, Alaska, November 21, 1995). Additionally, there are four FWS species of special concern that may occur in the project area: marbled murrelet, northern goshawk, harlequin duck, and spotted frog (U.S. Fish and Wildlife Service 1994). Although the Arctic peregrine falcon was delisted on October 5, 1994 and is no longer protected under the Endangered Species Act, the FWS must monitor this species for 5 years following its delisting. Federal agencies are requested to voluntarily consider the Arctic peregrine falcon in their planning processes.

*If YES, go to E2.*

- 2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?**

**NOT APPLICABLE**

*If NOT APPLICABLE, go to E3.*

- 3) If the Facility has received authority to incidentally *Take* a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authority?**

**NOT APPLICABLE**

*If NOT APPLICABLE, go to E5.*

- 5) If E.2. and E.3. are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?**

**YES**

The Goat Lake Project would not adversely affect the federally endangered American peregrine falcon or delisted Arctic peregrine falcon because: (1) both peregrine falcon species are thought

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to occur in the project area only in small numbers and as occasional migrants; (2) critical habitat for both peregrine species are not known to occur in the project area; (3) preferred prey (shorebirds and waterfowl) are not abundant in the project area, so foraging would not be affected; and (4) the alteration of about 10 acres of forest, shrubland, and muskeg habitats would not affect prey availability for migrating peregrines nor important foraging habitats such as wetlands, ponds, and riparian zones.

FERC concluded and the agencies we spoke with concur that the project would not adversely affect the five species of special concern that could occur in the project area for the following reasons:

- (1) these species have not been found in the project area;
- (2) the goose-grass sedge was found at the 4,000 foot msl elevation, outside the project's impact area;
- (3) the project area does not have preferred old growth and mature coniferous habitat for marbled murrelet nesting nor is such habitat known in the Skagway River Valley;
- (4) populations of the northern goshawk, harlequin duck, and spotted frog that could inhabit the area are likely to be low;
- (5) the project area is not known to support high populations nor provide known critical habitat for the northern goshawk, harlequin duck, and spotted frog;
- (6) project construction is not expected to affect nesting or movements of the northern goshawk, harlequin duck, and spotted frog;
- (7) because Goat Lake is a nutrient-poor lake with low bioproductivity, it is not probable that Pitchfork Falls, which receives water from Goat Lake, sustains a suitable food base (aquatic invertebrate diversity and numbers) for the harlequin duck;
- (8) construction of various project features (intake, siphon house, pumpback valve house, penstock, powerhouse/substation, transmission line) are not likely to be sited in desired nesting habitats of northern goshawk, harlequin duck, and spotted frog; and
- (9) since the project is located about 250 miles north of the known limits of the western spotted frog, it is not likely that this species can be found in the project area.

Therefore, FERC believed and agency staffers we spoke with agree that the project would not affect the endangered American peregrine falcon and that no further action pursuant to Section 7 of the Endangered Species Act of 1973, as amended, is required. By letter dated March 25, 1996, the FWS concurred with FERC's determination (letter from Nevin D. Holmberg, Field Supervisor, U.S. Fish and Wildlife Service, Juneau, Alaska, March 25, 1996). FERC also found that project construction and operation would not affect the delisted Arctic peregrine falcon, and

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the five species of special concern: goose-grass sedge, marbled murrelet, northern goshawk, harlequin duck, and spotted frog.

*If YES, go to F.*

**PASS.**

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## **F. Cultural Resource Protection**

### **1) If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?**

Yes, AP&T is required to implement a cultural resources management plan to protect portions of the Skagway Historic District and White Pass National Historic Landmark (Historic Landmark), which includes the Brackett Wagon Road and White Pass and Yukon Route Railroad (WP&YR RR); and the historic Canadian Oil pipeline affected or potentially affected by the project, pursuant to a memorandum of agreement (MOA) prepared in accordance with the Advisory Council of Historic Preservation's (Advisory Council) regulations (36 CFR 800) for the National Historic Preservation Act.

**YES.**

*If YES, go to G.*

**PASS.**

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## **G. Recreation**

### **1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?**

**YES.**

There are no developed facilities in the Goat Lake basin. The FS manages the area to retain its roadless and wildland character. Major recreational facilities would not be developed. The developed recreational facilities that exist outside of the basin consist of FS cabins, dispersed campsites, and picnic areas. The National Park Service operates the Klondike Gold Rush National Historical Park that includes a visitor center in Skagway and a campground in Dyea.

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Because of the difficulty in accessing the Goat Lake basin, very little recreational use occurs in the vicinity of the lake. Major recreational activities in the project vicinity are dispersed activities such as hiking, fishing, and sightseeing. The most common activity is sightseeing. Sightseeing tours are provided by the WP&YR RR, several highway tour operators along the Klondike International Highway, and aircraft companies.

Skagway and its vicinity, due to the attractions and cruise ship moorage, draws a large number of tourists to the area. The Skagway Convention and Visitor Bureau estimates that in 1993 about 350,000 tourists visited the area. Approximately 80 percent of southeast Alaska visitors come to the area by water.

Based on survey results, the applicant determined that many of these visitors are interested in sightseeing and photography. The applicant conducted a survey of the tour operators and was able to estimate that 23,000 visitors stopped at the viewpoints overlooking Pitchfork Falls during the season. In addition, 24 percent of the vehicles using the Klondike International Highway stopped at the viewpoints.

The project would be in a remote location that is difficult to access. The site receives very little recreational use and the project would not have a significant effect on existing recreational opportunities with the exception of sightseeing activities from the WP&YR RR and the Klondike International Highway. This issue was discussed in the Aesthetic Resources Section.

*If YES, go to G3.*

**3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?**

YES.

*If YES, go to H.*

**PASS.**

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**H. Facilities Recommended for Removal**

**1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?**

NO.

There are no resource agency recommendations to remove the project.

*If NO, facility is low impact.*

**PASS.**

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**FACILITY IS LOW IMPACT**

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## RECORD OF CONTACTS

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Date of Conversation: March 19, 2007  
Application Reviewer: Fred Ayer, Executive Director  
Person Contacted: Mike Driscoll, USFS  
Telephone/email: 907-790-7483  
Areas of Expertise: FS Interests

Mike is in charge of making sure that the conditions of the Forest Service's special use permit are being complied with. He describes the Applicant as being very responsive and easy to work with. While he can't officially verify it, he believes that the project does not negatively impact water quality and that project waters meet state water quality standards. As far as he knows there are no critical fish issues associated with the project operation. He verified that there were down stream barriers that precluded fish from the project area. He reiterated, more than once that the Applicant was very good to work with and overall had a high compliance record with the USFS special use permit conditions.

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Date of Conversation: March 20, 2007  
Application Reviewer: Fred Ayer, Executive Director  
Person Contacted: Sue Walker, National Marine Fisheries Service  
Telephone/email: 907-586-7646  
Areas of Expertise: Anadromous Fish and Hydropower Licensing

I had nice chat with Sue about this project and she confirmed that there were not big problems with this project. She said they spent more time trying to decide the color of the penstock than any other issues. Certainly visual concerns, driven largely by the Forest Service were an important consideration in this proceeding. She described the water quality as fantastic and said this was pristine water---the kind of water quality most dream of in the lower 48. The grayling issue was not very important to NMFS, since the fish were not anadromous and had been stocked in the lake. She saw the issue very similarly to the introduced rainbow trout in the Black Bear Lake Project. She felt the joint EA prepared by FERC and the Forest Service was well done and she agreed with its conclusions. She reiterated her positive comments about working with the applicant.

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Date of Conversation: March 21, 2007  
Person Contacted: Richard Enriquez, USFWS  
Telephone/email: 907-780-1162  
Areas of Expertise: T&E species and other general environmental effects on water quality, threatened and endangered species

Richard was very helpful in our discussion and was able to say that the USFWS concurred with the EA conclusions reached by FERC and the Forest Service as part of the FERC licensing of the

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project. Specifically he was able to say that the project had no effect on threatened and endangered species. He agreed with NMFS, Sue Walker's characterization that the water quality was very good, even pristine. Regarding the grayling study, based on the data that AP&T had developed over the first four years of the monitoring program grayling are spawning under the current operating regime and drawdowns. The monitoring program has identified fish of different age classes. Richard complimented the applicant as being good to work with and folks that responded to agency requests particularly when they were backed by data.

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Date of Conversation            March 20, 2007  
Person Contacted:            Jim Ferguson, PhD, Statewide Hydropower Coordinator  
Telephone/email:            907-267-2312  
Areas of Expertise:            Hydropower Licensing and environmental effects

I spoke with Jim about the Goat Lake project and like other resource agency staff that I had spoken with, he didn't have much to say about the project either positive or negative. He mentioned the grayling in the lake and verified that the project was located above anadromous fish spawning areas. This was because there were significant natural barriers down stream of the project. While Jim discussed the grayling, he explained that he was not sure what the applicant envisions doing in the future regarding the grayling fishery which is stocked. I got the sense from Jim and others that the grayling fishery was not a big issue, and perhaps more than anything was the question of what next. He suggested that I follow-up with the applicant to see what AP&T's sense of what happens after the grayling monitoring is complete.

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Date of Conversation:            March 20, 2007  
Application Reviewer:        Fred Ayer, Executive Director  
Person Contacted:            Jan Konisberg, HRC Alaska  
Telephone/email:            907-248-3014

Jan returned my call and said that while he had read the occasional FERC order concerning the Goat Lake Project, from his standpoint it was a very low profile project with minimum issues. My sense from Jan was that this type of project was common in the south east and as a rule had little or no problems. He mentioned that the federal fishery agencies weren't much involved because there were not anadromous runs in the project area. He also agreed with me when I said that the fact the FERC and the USFS jointly prepared the NEPA document made it very likely that this EA was a serious cut above EAs produced solely by FERC.

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Date of Conversation: March 20, 2007  
Application Reviewer: Fred Ayer, Executive Director  
Person Contacted: Mel Langdon, ADEC  
Telephone/email: 907-269-6283  
Areas of Expertise: Water Quality certification

I was given Mel's name while I was trying to tie down some information on water quality. Mel and I had a good discussion regarding Alaska's decision to waive water quality certification in FERC proceedings. She confirmed what we had heard earlier that the primary reason Alaska had gone the waiver route was budget cuts and the resultant lack of staff. She suggested I speak with fishery agency staffers and in particular Jim Ferguson regarding specifics of the Goat Lake project water quality.

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