

**Agency: Commerce, Community and Economic Development****Grant Recipient: Community & Economic Dev****Project Title:****Project Type:** New Construction and Land Acquisition

# Alaska Energy Authority - Stetson Creek Diversion

**State Funding Requested: \$5,825,440****House District:** Kenai Areawide (33-35)

One-Time Need

**Brief Project Description:**

Construct the infrastructure necessary for the diversion of Stetson Creek into Cooper Lake and the release of water from Cooper Lake into Cooper Creek.

**Funding Plan:**

Total Project Cost:	\$24,228,440
Funding Already Secured:	(\$12,578,000)
FY2013 State Funding Request:	(\$5,825,440)
Project Deficit:	\$5,825,000

*Funding Details:*

*In 2007, Chugach committed to pay up to \$12,000,000 toward the project*

*In the FY 2012 budget, Chugach was authorized \$578,000 from the Renewable Energy Grant Fund*

**Detailed Project Description and Justification:**

When Chugach received a new operating license in 2007 for its Cooper Lake hydroelectric project, it contained a condition requiring Chugach to divert the cold water of Stetson Creek into Cooper Lake, then release water from the reservoir into Cooper Creek. Resource managers wanted this condition to try to improve the habitat for certain species of fish by providing warmer water in the lower reaches of Cooper Creek near where it joins the Kenai River. At the time, it was estimated to be a \$12 million project. As the engineering has moved forward and construction details finalized, the estimate has become more refined. It is now estimated that the final cost of this project could total \$24 million. Chugach agreed to a \$12 million project and is seeking assistance with the balance over and above that amount. The project entails the construction of a small concrete diversion dam on Stetson Creek, 11,910 feet of 36" pipeline to move the creek waters to Cooper Lake, and an outlet works which includes a 30" pipeline from the lake buried 25' deep in the existing hydro project spillway.

Chugach proposes that the requested grant flow through the Alaska Energy Authority. Chugach and AEA would develop a project agreement to manage the distribution of the grant funds in response to project activities. The requested amount includes an anticipated 2 percent AEA administration fee of \$228,440.

**Project Timeline:**

If funding is authorized in the FY 2013 budget, Chugach will complete a project agreement with the Alaska Energy Authority. Design will be completed in 2012, with construction in 2013 and 2014.

**Entity Responsible for the Ongoing Operation and Maintenance of this Project:**

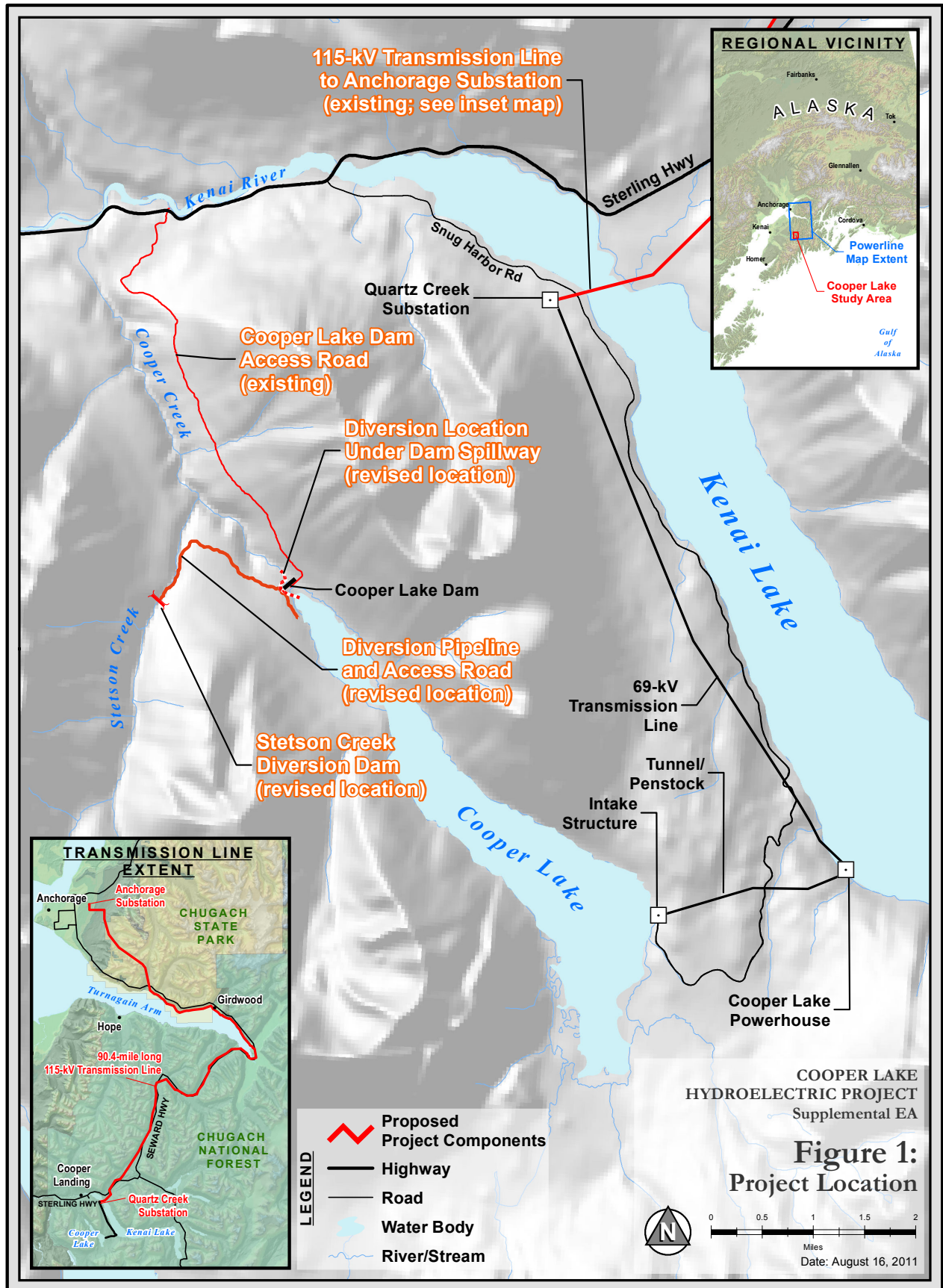
Chugach Electric Association

**Grant Recipient Contact Information:**

Name:	Bradley Evans
Title:	Chief Executive Officer
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Has this project been through a public review process at the local level and is it a community priority? ☒ Yes ☐ No

# Stetson Creek diversion



# The Stetson Creek diversion project

## Background

During the process of relicensing the Cooper Lake hydro project, resource managers expressed a desire to improve the habitat for certain fish in the lower reaches of Cooper Creek by raising the water temperature. Currently Cooper Creek is fed from natural seepage to the drainage plus the inflow of the cold water of Stetson Creek.

## The concept

The parties to the settlement agreement for the new license agreed that Chugach would build structures to divert most of cold Stetson Creek into Cooper Lake, then take water from the reservoir and put it into Cooper Creek. This approach will result in a net increase in water for power generation, and about 10 percent more kilowatt-hours annually from the hydro project

## The diversion dam and pipeline

- A concrete dam about 45' wide and 10' tall at the spillway
- An 11,910' pipeline, 36" in diameter, buried from the diversion dam to the lake
- Will divert 95 percent of the annual flow of Stetson Creek into Cooper Lake
- Estimated annual water diverted into Cooper Lake: 18,255 acre-feet

## The outlet works

- A 30" pipeline from the lake bottom
- Route follows the existing project spillway, buried 25' deep
- Estimated annual water release from the reservoir to Cooper Creek: 10,256 acre-feet

## The cost of the Stetson Creek diversion project

- Estimated cost at the time of relicensing: \$12 million
- Current estimated cost (January 2012): Up to \$24 million

## The Cooper Lake Hydroelectric Project

- Two hydro turbine-generators
  - Commissioned 1960
  - Upgraded 2000-2001
  - Capacity 9.6 MW each
- 920 foot-long rock-and-fill dam
- 10,686-foot-long tunnel and penstock
- Maximum licensed operating level of 1,210 ft. mean sea level
  - General maximum reservoir level to 1,194 ft. msl
  - General minimum reservoir level of 1,170 ft. msl
- Surface area of Cooper Lake 2,910 acres
- Average annual generation of 48,500 mwh
- 6.3 mile long, 69-kv transmission line extending from the powerhouse to the Quartz Creek substation
- 90.4 mile-long 115-kv transmission line from Quartz Creek to Anchorage
- Original license date: May 27, 1957
- Relicensed: August 24, 2007 (50-year license)

## EXECUTIVE SUMMARY

Chugach Electric Association, Inc. (Chugach) is assessing the feasibility of the proposed Stetson Creek Diversion and Cooper Lake Dam Facilities project (Project) as part of the requirements listed in FERC's "Order on Offer of Settlement and Issuing New License" (Settlement Agreement) issued on August 24, 2007. The goal of the Project is to improve fish habitat in Cooper Creek by diverting cold water from Stetson Creek, a tributary of Cooper Creek, to Cooper Lake and releasing warmer surface water from Cooper Lake into Cooper Creek. Several options to meet the goal of providing warmer water to Cooper Creek were examined in the August 2004 "Potential Cooper Creek Protection, Mitigation and Enhancement Measures" (PME) Report developed by MWH for Chugach and one option became the basis of the Settlement Agreement requirements. Based on the results of that report, Chugach asked MWH to assess the feasibility of the selected option – a diversion dam and pipeline, and outlet works at Cooper Lake Dam.

Feasibility of the Project was assessed based on the requirements in the Settlement Agreement, which were somewhat revised from the selection option in the PME Report. Under the terms of the Settlement Agreement, virtually all water in Stetson Creek may be diverted to Cooper Lake. No specified minimum flow was indicated in the Settlement Agreement to be maintained in Stetson Creek. Similarly, per the Settlement Agreement, a range of target flows must be released from the warmer portions of Cooper Lake (variable throughout the year) into Cooper Creek but are subject to change by an Interagency Committee, up to a maximum release of 30 cfs. Maximum annual volumes and maximum instantaneous design flows are specified in the Settlement Agreement for diversion and temperature releases.

The Diversion Dam is planned to be located high on Stetson Creek to take advantage of more favorable geologic conditions and a safer and more constructible pipeline route. Following field investigations conducted in 2009, cost and construction considerations were developed for two options for the outlet works – a Gravity Option and a Siphon Option. The Gravity Option incurs significant cost, risk and construction difficulty because an open cut is required through the FERC-regulated Cooper Lake Dam. The Siphon Option attempts to reduce cost, risk, construction difficulty and dam safety issues by cutting through the rock spillway and installing a siphon pipeline system. Other alternatives were briefly examined to explore the potential for cost savings, though no formal cost estimates were performed for these options.

Estimated total Project costs for the two Cooper Creek release options mentioned previously were developed in early 2010. The Siphon Option was estimated to have the lower total Project cost with an Association for the Advancement of Cost Engineering (AACE) International Class 4 cost range of \$16.4 to \$23.9 million in January 2010. This estimate has an accuracy of -15% to +25%, which is standard for feasibility level studies with project definition less than 15%. The 2010 cost estimates were based on a recommended, two-season, 2012-2013, construction schedule.

The 2010 estimates were compared to those prepared in 2004 to study potential protection, mitigation and enhancement measures (MWH, 2004). The purpose of the 2004 studies, and subsequent updates, was to determine conceptual project layouts and cost estimates for the

purpose of comparison of the various alternatives. The 2004 study examined a range of alternatives, which included several alternatives that were similar to those studied herein, though none were precisely the same. The 2004 report estimates were later used as a basis for the \$11.04 million (in 2004 dollars) target project cost.

Chugach contracted MWH to conduct additional geotechnical investigations for the Siphon Option in 2010. Some design layout changes were made as a result. Updated layouts and geotechnical investigation results were prepared for the Siphon Option based on the 2010 field work and are included in this report. The Siphon Option cost estimate was updated to reflect the 2011 design changes and the latest available cost data. The 2011 Siphon Option project cost estimate indicates no net change from the earlier estimated range of \$16.4 to 23.9 million (December 2010 dollars). A proposed project schedule that reflects a two-season, 2013-2014, construction period has also been prepared.

**Cooper Lake Project (FERC No. 2170)**  
**Relicensing Settlement Agreement**  
**Joint Explanatory Statement**  
**August 2005**

Summary

On April 22, 2005, Chugach Electric Association, Inc. (Chugach) filed a Final License Application for a new 50-year license for its Cooper Lake Hydroelectric Project (Project). As an integral part of the Final License Application, Chugach filed an Agreement in Principle (AIP) reached in March 2005 with a number of State and Federal resource agencies, a Native American tribe, and non-governmental organizations that provided a framework for the comprehensive relicensing Settlement Agreement that was reached in August 2005.

The parties to the AIP have now completed and signed a complete Settlement Agreement and Chugach is filing it with the Federal Energy Regulatory Commission (FERC) as an offer of settlement. Pursuant to Rule 602(c) of the FERC's Rules of Practice and Procedure, this Joint Explanatory Statement accompanies and provides background and rationale for the Settlement Agreement. The Settlement Agreement includes draft license articles and describes protection, mitigation and enhancement (PME) measures to be undertaken by Chugach during the new license term related to the impacts of Project operations, thereby assuring benefit to the public interest under the new license.

The most significant PME measure in the Settlement Agreement is the diversion of colder water from Stetson Creek, a tributary to Cooper Creek, into Cooper Lake and the release of warmer Cooper Lake water into upper Cooper Creek. These new flows will benefit fish habitat by increasing water temperatures in Cooper Creek, which extends from the Project dam at Cooper Lake to the Kenai River. The Settlement Agreement also includes some measures that are outside of FERC's licensing jurisdiction, but which were integral to reaching the comprehensive settlement. The Settlement Agreement also provides certain assurances to Chugach regarding future financial and operational obligations, support for a 50-year license due to its significant commitments, and licensing-related procedural matters.

Background on Relicensing Process and Settlement Negotiations

In May 1957, the Federal Power Commission (FERC's predecessor) issued a 50-year license authorizing Chugach to construct and operate a hydroelectric project on Cooper Lake, near Cooper Landing on the Kenai Peninsula of Alaska. The Project, which became operational in 1961, provides 19.38 MW of electric power to south-central Alaska as part of Chugach's electric and generation system.

Chugach began the process of relicensing the Project in early 2002. The existing federal license for the Project expires at the end of April 2007. To maintain ownership of the Project in accordance with federal regulations, Chugach was required to file its Final License Application with the Federal Energy Regulatory Commission (FERC) on or before April 30, 2005.

As part of the FERC relicensing process, Chugach consulted with State and Federal resource agencies, a Native American tribe, non-governmental organizations, its wholesale power

purchasers, and interested members of the public. These entities have been consulted regarding Project effects on the environment, economic impacts of Project power supply and cost, planning and implementation of studies to develop needed information, and identification and evaluation of potential mitigation measures.

To enhance this dialogue and provide increased opportunity for development of a licensing proposal that would address the interests of all parties, Chugach and other parties agreed to supplement the required consultation process by participating in formal negotiations intended to lead to a Settlement Agreement on the terms of the new license. The participating entities identified the following joint goals for the negotiations:

1. Develop a timely, comprehensive Settlement Agreement that satisfies all applicable legal mandates and contains recommendations of appropriate license terms and conditions for inclusion in the new FERC license and possibly other non-license commitments.
2. Have as many parties as possible join in the Settlement Agreement.
3. Control the costs of the post-filing FERC processing of the license application.
4. Create as much certainty as possible regarding the relicensing outcome for all parties.

Early in the negotiations process, the negotiating parties also identified their respective major interests in the outcome of the relicensing, including:

- Chugach: Retaining the ability to generate cost-effective hydropower from the Project to protect system reliability and control costs for customers.
- Resource agencies: Mitigation of Project impacts to protect public resources, including fulfilling environmental and recreational mandates.
- Kenaitze Indian Tribe: Stewardship and cultural resource protection on traditional lands.
- Non-governmental organizations: Reestablishing fish populations and providing local and regional fishing and other recreational opportunities.

The competing — but not necessarily mutually exclusive — nature of some of the identified interests provided a focus for the negotiations and incentive for the parties to stay engaged in the negotiations process. The studies conducted for the relicensing provided the scientific basis for the agreements that were reached as part of the AIP.

Following months of negotiations, an AIP was reached in March 2005 on the framework for a future comprehensive Settlement Agreement. The AIP, which also formed the basis for Chugach's licensing proposal presented in its Final License Application, was signed by Chugach and the following parties:

- U.S. Department of Agriculture, Forest Service
- U.S. Department of the Interior, Fish and Wildlife Service
- U.S. Department of the Interior, National Park Service
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service
- Kenaitze Indian Tribe
- Alaska Department of Fish and Game



- Alaska Department of Natural Resources
- The Fish for Cooper Creek Coalition
- Alaska Flyfishers Association
- Alaska Center for the Environment

After the AIP and Final License Application were filed, negotiations continued within the parameters established under the AIP and ultimately reached a comprehensive relicensing Settlement Agreement.

### Summary of Settlement Agreement

The PME measures and other fundamental agreements described in the Settlement Agreement are summarized below.

#### **Cooper Creek stream temperatures:**

- Within six years of issuance of the new license for the Project, Chugach will:
  - construct a diversion structure and pipeline to divert water from Stetson Creek (the main tributary to Cooper Creek) into Cooper Lake.
  - construct a screened water bypass structure to allow for the release of warmer water from Cooper Lake into Cooper Creek through the existing Project dam.
- A minimum of 10,256 acre-feet of water will be available each year for release from Cooper Lake into Cooper Creek to provide an agreed-upon instream flow regime in the creek. An interagency committee will meet annually to determine the desired release schedule of Cooper Creek and Stetson Creek flows for that year.
- With the diversion of water from Stetson Creek into Cooper Lake and releases into Cooper Creek, net inflow to the reservoir will increase allowing generation to offset some of the costs of this proposed measure.
- Chugach will monitor stream flows and temperatures in Cooper Creek, and will contribute funding for monitoring of fish and geomorphic conditions in the creek.

#### **Cooper Lake fish resources:**

- Chugach will fund monitoring of the Arctic char population in Cooper Lake.

#### **Porcupine Creek fish resources:**

- Chugach will continue to limit the rate and quantity of discharge into Porcupine Creek, except in case of emergency.
  - Before issuance of the FERC license and upon receiving the necessary permits, Chugach will improve fish passage through the existing Porcupine Creek culvert on the spur road to the Project powerhouse located on State land.
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#### **Reservoir and powerhouse operations:**

- Chugach will continue operating Cooper Lake within the existing license reservoir limitations.
- No new operational restrictions on the reservoir or powerhouse operations are required, except that between January 1 and April 30, Chugach will not shut down the powerhouse for more than three consecutive days when Kenai River flows are low.

#### **Resources along Project powerline rights-of-way (ROWs):**

- Chugach will implement a Transmission Line Right-of-Way (ROW) Corridor and Access Management and Maintenance Plan (ROW Management Plan) describing the methods, timing, access points, and other guidelines for use and maintenance of the Project transmission line ROWs. This plan will include: agreed-to procedures and guidelines for best management practices, emergency access, and access control; and seasonal scheduling of maintenance and vegetation management activities to avoid bird nesting and bear denning.

#### **Roads:**

- The Parties recognize that Chugach uses and maintains the road from the Sterling Highway to the Cooper Lake Dam and the proposed Stetson Creek diversion structure for operational purposes, and agree that this road should be included within the Project boundary. The Forest Service will allow recreational access consistent with the Forest Service land management plans and policies, so long as such recreational use does not interfere with Chugach's maintenance and operation activities.
- The Forest Service and Chugach have reached a new, adaptive arrangement for the long-term maintenance of the Snug Harbor Road. (Snug Harbor Road, however, is and should remain outside the Project boundary.) [Not FERC-Jurisdictional]

#### **Cultural Resources:**

- Chugach will make an annual contribution to the Kenaitze Indian tribe cultural and educational program for the term of the license. [Not FERC-Jurisdictional]
- Chugach will implement a Programmatic Agreement among FERC, the State Historic Preservation Office, and the Advisory Council on Historic Preservation and a Historic Properties Management Plan when the license is issued.

#### **Recreation resources:**

- Chugach will design, seek permits, and construct a winter access parking area on State land off Snug Harbor Road within 18 months after the license is issued, provided that all necessary legal and regulatory permits, rights of way and licenses are obtained. The winter parking area will accommodate approximately fifty vehicles with trailers, and will include two vault toilets, directional signing, and controlled access to allow the area to be closed in the non-winter use period. Chugach will provide all necessary long-term maintenance of the facilities and provide snow removal in the parking area during winter months. [Not FERC-Jurisdictional]

**Visual Resources:**

- Chugach will paint the Project powerhouse and intake structures to reduce visual impact.

**License Term:**

- All parties will support Chugach's application for a license term of 50 year in consideration of the significant financial and operational commitments outlined above.
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Net Benefit to Public Interest Provided by Settlement Agreement Measures

*Cooper Creek Measures*

Ecological Considerations

The cornerstone of the Settlement Agreement is the benefit to fish habitat of increased water temperatures in Cooper Creek, which extends from the Project dam at Cooper Lake to the Kenai River. The portion of the creek upstream of the confluence with Stetson Creek (the main tributary to Cooper Creek) currently has minimal flow, due to diversion of all lake outflows through the powerhouse. Studies have shown that currently low water temperatures in Cooper Creek are a likely limiting factor to the establishment and/or maintenance of salmon or trout populations in the creek. Under the Settlement Agreement, fish habitat will be significantly improved by diverting colder water from Stetson Creek into Cooper Lake and releasing warmer flows from near the surface of Cooper Lake into upper Cooper Creek. The proposed releases from Cooper Lake will accomplish two main objectives: (1) restoring flows in Cooper Creek upstream of Stetson Creek and (2) increasing stream temperatures into a range more beneficial for salmon and trout spawning and incubation, by exchanging input of Stetson Creek's cold water for input of Cooper Lake's warmer water to Cooper Creek.

Based on field and modeling studies, the proposed measures will benefit and maintain Cooper Creek fish habitat as follows:

- Stream temperatures in most of Cooper Creek will be increased during the late May through October period, potentially extending into late November.
- Flow will be reestablished in Cooper Creek from the dam to the Stetson Creek confluence, where little flow currently exists.
- Annual flow fluctuations in lower Cooper Creek (downstream from the mouth of Stetson Creek) will be reduced with lower flow in the spring and early summer, and higher flow in late summer through early spring.
- "Flushing flows" consistent with the hydrologic record for Cooper Creek, occurring either through natural high flow events or through supplemental releases from the Stetson Creek diversion structure, will help maintain habitat values of the stream channel.
- Winter water temperatures in Cooper Creek might be higher, especially in its upper reaches.
- Productivity in Cooper Creek may increase due to input of nutrients from Cooper Lake and salmon carcasses.

Species most likely to benefit from Cooper Creek flow and temperature changes include chinook, coho, sockeye, and pink salmon, and rainbow trout. The mitigated conditions will provide habitat that could restore significant spawning use of the creek up to the barrier falls by salmon. Increased temperatures will result in significantly earlier fry emergence, thereby increasing fry survival and potentially increasing the number of returning adults. Wildlife will benefit from increased numbers of salmon in Cooper Creek.

In designing the Settlement Agreement, the negotiating parties also identified the potential adverse environmental effects that could arise from the proposed measures. These effects were evaluated in the Final License Application and a supplemental program of studies to evaluate the proposed Stetson Creek diversion, the reports of which are being filed with the Settlement Agreement. Potential impacts (and corresponding mitigation, where appropriate) include:

- Diversion of water from Stetson Creek — Studies of Stetson Creek found no fish; however, diversion of water from the creek will substantially reduce flow in the creek downstream of the diversion point. In addition, the Settlement Agreement provides that instream flows may be established in Stetson Creek, if deemed necessary.
- Decreased flow in Cooper Creek — On average, a greater amount of water will be diverted from Stetson Creek than will be released from Cooper Lake, resulting in less annual flow in Cooper Creek downstream from the confluence with Stetson Creek; however, habitat quality in Cooper Creek will be improved.
- Annual fluctuation of Cooper Lake — The reservoir will continue to be operated within the existing licensed operating range, but to accommodate the additional net inflow to the reservoir from the Stetson Creek diversion, the average annual fluctuation range of the reservoir will likely increase slightly, which could potentially increase nest inundation for gulls and other water birds in some years.
- Stetson diversion pipeline corridor — The proposed diversion pipeline/access corridor from Stetson Creek to Cooper Lake will be a non-natural landscape feature. However, the corridor will be visible from only a few locations.

The negotiating parties concluded that these potential impacts are minimal and have been mitigated where necessary and feasible. After considering these impacts, the parties determined that the anticipated benefits of the proposed measures for Cooper Creek far outweigh any potential impacts, resulting in a significant net benefit to the public resource.

#### Economic and Power Considerations

The Settlement Agreement includes provisions to benefit the regional power supply and Chugach member-ratepayers. As noted above, although flows will be released from Cooper Lake into Cooper Creek, diversion of water from Stetson Creek into Cooper Lake will result in a net increase in average annual inflow to Cooper Lake. This net increase will:

- Increase the average annual power production from the Project.
- Help offset some of the costs associated with implementing the proposed measures for Cooper Creek.
- Help maintain the Project as an economic source of renewable energy.

### *Other Project and Non-Project Measures*

In addition to the measures for Cooper Creek, the Settlement Agreement describes several other Project and non-Project enhancement measures that will be undertaken by Chugach during the new license term and that also benefit the public interest:

- *Cooper Lake fish* — Periodic monitoring will ensure that any potential significant declines in the Arctic char population are identified so that potential causes and solutions can be identified.
- *Porcupine Creek fish resources* — Fish and aquatic resources in Porcupine Creek will be protected through the penstock dewatering protocol. Fish will further benefit by modification of the stream channel downstream of the culvert to improve fish passage.
- *Resources along Project powerline rights-of-way (ROWs)* — Wetlands along the Project transmission lines will be protected through formalized best management practices established and implemented under the proposed ROW Management Plan. With implementation of the ROW Management Plan, wetlands in the Project area will be protected by the avoidance or minimization of potential impacts associated with any future projects such as development of proposed access routes. Chugach's proposed ROW Management Plan also includes provisions that will address other potential impacts; these provisions include conducting bear denning surveys before scheduled vegetation clearing or equipment maintenance to avoid disturbance of active dens, seasonal windows on scheduled activities to avoid disturbance of bird nesting and bear denning, access control to reduce unauthorized vehicle use of powerline access routes, and surveys for cultural resources prior to any ground-disturbing activities.
- *Cultural resources* — With implementation of the Historic Properties Management Plan (HPMP) as proposed, the potential for any future Project-related adverse impacts to cultural resources will be minimized. In addition to implementation of the HPMP under the new license, Chugach is proposing to make an annual contribution of \$6,000 (escalating annually) to the Kenaitze Indian Tribe cultural and educational program for the term of the license, to assist the Tribe in its efforts to help preserve knowledge of the area's native culture and traditions. This cultural and educational program focuses on teaching traditional knowledge about Kenaitze subsistence practices, traditional values, and culture. This enhancement measure will be separate from the terms of the new license, as consistent with the Settlement Agreement.
- *Recreation resources* — The addition of an area that will provide off-road parking associated with fall and winter recreation use in the Cooper Lake area will both facilitate access into the area for these recreation uses and help to alleviate traffic problems that are caused by the numerous vehicles parked along the margins of the narrow roadway during peak use periods. This enhancement measure will also be separate from the terms of the new license, as consistent with the Settlement Agreement.
- *Visual resources* — Painting the Project powerhouse and intake structures as proposed in the Settlement Agreement will reduce the visibility of the powerhouse and intake structure, thereby creating a more natural-appearing landscape.

### Support for 50-Year License Term

In recognition of the mutual advantages offered by the Settlement Agreement, and the significant costs to Chugach of implementing the proposed PME measures to benefit the environment, the agencies and other signatories to the Settlement Agreement are supporting Chugach in its request to FERC for a 50-year term for the new Project license.

### Fulfillment of Agency Legal Obligations

The Settlement Agreement will satisfy the legal obligations of signatory governmental agencies with jurisdiction and legal authority over the Project and related activities. The parties also recognize that many permits and authorizations need to be secured before the proposed measures can be undertaken, and the parties have committed to working together to process the required permits and authorizations to allow timely implementation of the proposed measures.

### Conclusion

This Offer of Settlement is clearly in the public interest. The Parties to the Settlement Agreement jointly request the Commission approve the Offer of Settlement and include the proposed license articles attached to the Settlement Agreement, without material modification, into a new license for the continued operation of the Project for another 50 years pursuant to the terms of the Settlement Agreement.

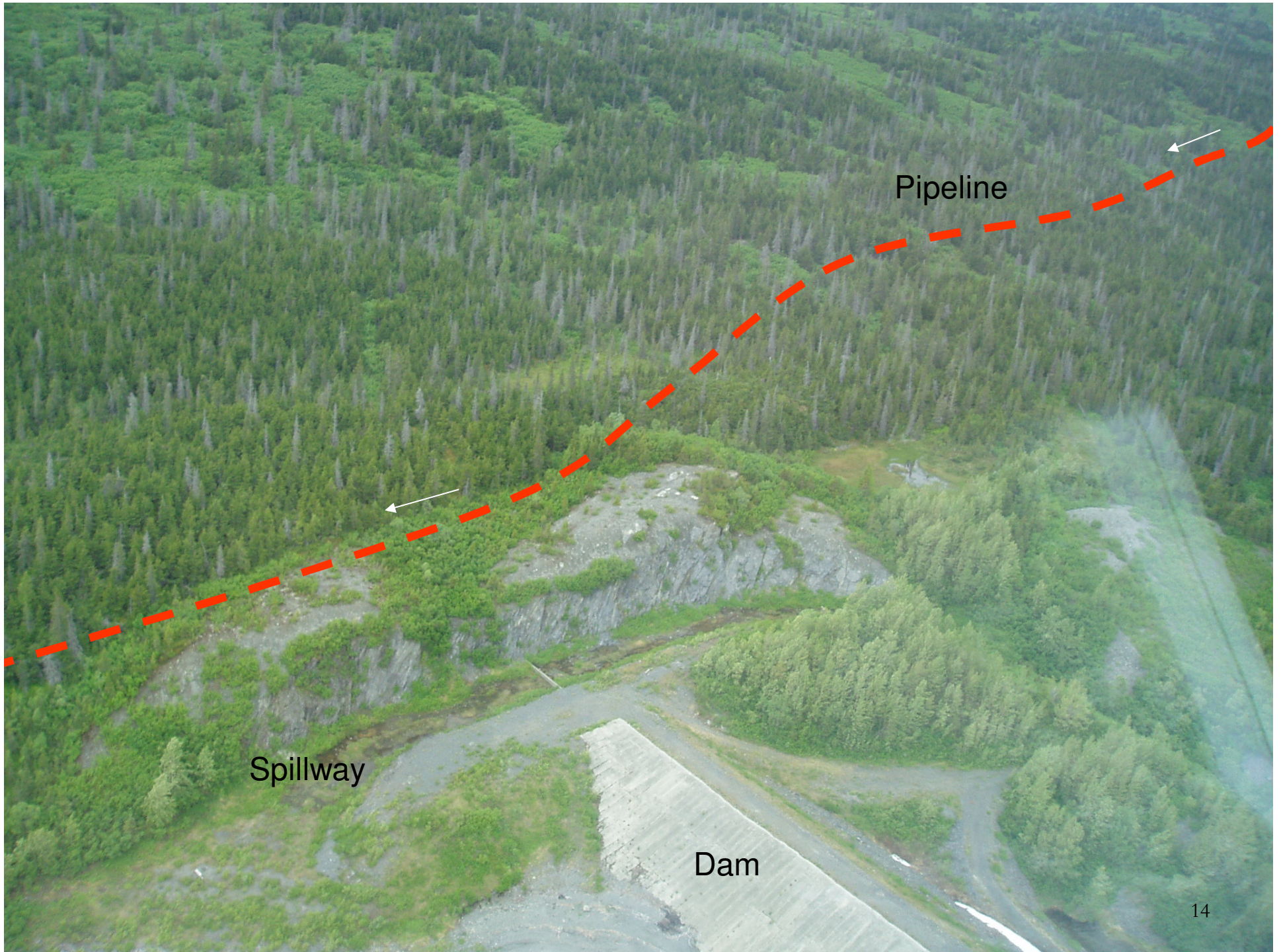
### Signatories to the Settlement Agreement and this Joint Explanatory Statement:

Chugach Electric Association, Inc.  
US Department Of Agriculture, Forest Service, Alaska Region  
US Department Of Interior, Fish And Wildlife Service  
US Department Of Commerce, National Marine Fisheries Service  
US Department Of Interior, National Park Service  
State Of Alaska, Department Of Natural Resources  
State Of Alaska, Department Of Fish And Game  
Kenaitze Indian Tribe,  
Alaska Center For The Environment,  
Fish For Cooper Creek Coalition, and  
Alaska Fly Fishers









Pipeline

Spillway

Dam