KPU
Your Community, Your Utility

Electric Division
1065 Fair Street
Ketchikan, AK 99901

Phone (907) 225-5505
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November 1, 2019

VIA E-FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Beaver Falls Hydroelectric Project (FERC No. 1922)
Joint Agency and Public Meeting

Dear Secretary Bose:

On October 3, 2019, the City of Ketchikan, Alaska d/b/a Ketchikan Public Utilities (KPU) hosted a Joint Agency & Public Meeting and site visit to discuss relicensing of the Beaver Falls Hydroelectric Project (FERC No. 1922) (Project). KPU published notice of the Joint Agency & Public Meeting in the Ketchikan Daily News on September 14, 2019. Notice of the meeting was distributed to interested parties listed on the Project Distribution List on September 16, 2019 and September 17, 2019 via both email and certified mail, as appropriate. KPU additionally filed notice of the meeting with FERC on September 17, 2019.

Copies of the meeting attendance list, meeting summary, meeting audio recording, and meeting presentation are enclosed for FERC and public reference.

If you have any questions pertaining to this filing, please contact me at jenniferh@ktn-ak.us or at 907-228-4733.

Sincerely,

Jennifer Holstrom, P.E.
Senior Project Engineer
Ketchikan Public Utilities

cc: Andrew Donato, KPU
Finlay Anderson, Kleinschmidt
Katie Sellers, Kleinschmidt
Julia Kolberg, FERC

Enclosures:
Attachment A Attendance List
Attachment B Meeting Summary
Attachment C Meeting Audio Recording
Attachment D Meeting Presentation

ATTACHMENT A

ATTENDANCE LIST

Beaver Falls Hydroelectric Project (FERC No. 1922)
Joint Agency & Public Meeting
October 3, 2019

Meeting Sign In

Name	Organization	Position/Title	Email
Katie Sellers	Kleinschmidt	Licensing Coordinator	katie.sellers@kleinschmidtgrp.com
Finlay Anderson	Kleinschmidt	Project Manager	finlay.anderson@kleinschmidtgrp.com
Aaron Steuerwald	USFS	Special Uses	asteuerwald@usda.gov
SUSAN HOWLE	USFS	DISTRICT RANGER	susan.howle@usda.gov
Jennie Holstrom	KPU	Sr. Project Engineer	jenniferh@ktn-ak.us
Tony Gallegos	KIC	Cultural Resource Dre	tgallegos@kictribe.org
SAM NAUJOKAS	KIC	ENVIRONMENTAL SPECIALIST	SNAUJOKAS@KICTRIBE.org
Julia Kolberg (call-in)	FERC	Project Manager	Julia.Kolberg@ferc.gov
Sean Egan (call-in)	NMFS	Hydrologist	sean.egan@noaa.gov
Carl Reese (call-in)	AK DNR	Hydroelectric Specialist	carl.reese@alaska.gov
Kevin Keith (call-in)	AK F&G	Fish, Wildlife Biologist	kevin.keith@alaska.gov
Sean McDermott (call-in)	NMFS	Hydropower Program Coordinator	sean.mcdermott@noaa.gov
Peter McBride (call-in)	FERC	Special Resources, Listed Species	peter.mcbride@ferc.gov

ATTACHMENT B

MEETING SUMMARY

BEAVER FALLS HYDROELECTRIC PROJECT (FERC NO. 1922)
CITY OF KETCHIKAN, ALASKA D/B/A KETCHIKAN PUBLIC UTILITIES
JOINT AGENCY & PUBLIC MEETING
OCTOBER 3, 2019
KETCHIKAN, AK

MEETING SUMMARY

- **Meeting Attendance**

Name	Organization	Position/Title
In-Person		
Finlay Anderson	Kleinschmidt Associates	Relicensing Project Manager
Jennifer Holstrom, P.E.	Ketchikan Public Utilities	Senior Project Engineer
Katie Sellers	Kleinschmidt Associates	Licensing Coordinator
Aaron Steuerwald	U.S. Forest Service	Special Uses
Susan Howle	U.S. Forest Service	District Ranger
Tony Gallegos	Ketchikan Indian Community	Cultural Resources Director
Sam Naujokas	Ketchikan Indian Community	Environmental Specialist
Call-In		
Julia Kolberg	Federal Energy Regulatory Commission	Project Manager
Peter McBride	Federal Energy Regulatory Commission	Special Resources & Listed Species
Sean Egan	National Marine Fisheries Service	Hydrologist
Carl Reese	Alaska Department of Natural Resources	Hydroelectric Specialist
Kevin Keith	Alaska Department of Fish and Game	Fish and Wildlife Biologist
Sean McDermott	National Marine Fisheries Service	Hydropower Program Coordinator

- **Meeting Purpose**
  - Provide information about the Federal Energy Regulatory Commission (FERC) relicensing process.
  - Solicit information regarding the existing environmental resources associated with the Beaver Falls Project and data that may need to be obtained.
  - Obtain agency and stakeholder feedback on potential Project effects on existing resources.

- **Review of Federal Energy Regulatory Commission (FERC) Relicensing Process**
  - Finlay Anderson (Kleinschmidt) provided an overview of the FERC relicensing process. To view detailed information on the relicensing process, please refer to the attached PowerPoint presentation or the Project Pre-Application Document.
  - The Beaver Falls Project operates under a 30-year FERC license issued on November 7, 1994. The license expires on October 31, 2024.

- Ketchikan Public Utilities (KPU) proposes to relicense the Beaver Falls Project and does not propose any changes to Project facilities or operations under the new license.
- KPU has elected and has been approved by FERC to utilize FERC's Traditional Licensing Process (TLP) for the Beaver Falls Project relicensing.
- The TLP is ideal for smaller projects with limited resource issues. The TLP is split into three stages: Initial Consultation; Studies and Draft Application; Final Application.
- Under the TLP, KPU will be taking extra steps to reach out to stakeholders to finalize study plans. KPU asks that stakeholders still respond to review timelines even if the TLP isn't as stringent with timelines as FERC's Integrated License Process (ILP).
- Potential parallel processes include:
    - Acquiring Water Quality Certification – though the State of Alaska has a recent history of waiving that process for relicensing of existing hydroelectric facilities
    - Acquiring U.S. Forest Service (USFS) Special Use Authorization - though the Project does not have an existing Special Use Authorization and it is not uncommon for hydroelectric projects to have USFS conditions umbrellaed under a FERC license.
- Questions/Answers:

- Ketchikan Indian Community (KIC): Is KPU applying for another 30-year license?

  Kleinschmidt: Yes, KPU is applying for another FERC license. The typical term of a FERC license is now about 40 years (can be more or less depending on the Project).

- KIC: Are there re-openers or times for re-opening a license? If having drought conditions, can those conditions trigger new operations/conditions?

  Kleinschmidt: The outcome of a license will have conditions and to some extent re-openers. Re-openers or reservations of authorities are often put in to place in a license to protect listed species.

  FERC: If major change to project operating conditions were to occur, then that is when an amendment process takes place and a re-opener situation can occur then. In some cases, an amendment may not affect the term or conditions within a license.

- USFS: Will the new license take environmental/climatic trends into consideration?

  Kleinschmidt: This could be a product of this process.

- KIC: At what point in the process should stakeholders start getting involved?

  Kleinschmidt: We are always looking for stakeholders/stakeholder involvement. We have assembled a fairly comprehensive stakeholder list in accordance with FERC sources, client sources, and in accordance with a PAD Information

Questionnaire that was sent out prior to filing the PAD. KPU also reached out to local tribes to gain correct contact information. Stakeholders can get involved at any stage in the process. We encourage that interested stakeholders get involved sooner than later.

- **Review of Project Layout and Operations**
  - Jennifer Holstrom (KPU) provided an overview of Beaver Falls Project facilities and operations. To view detailed information on Project facilities, please refer to the attached PowerPoint presentation or the Project Pre-Application Document.
  - In an average year, about 96% of KPU's generated power is hydroelectric power. Given local drought conditions, this year has not been an average year.
  - KPU owns 3 hydroelectric projects. Of the hydroelectric projects, Beaver Falls is the most important generating asset – it provides about 30% of KPU's total generation.
  - Questions/Answers:
    - KIC: Is this the first license and when was the Project first established?

      KPU: This is the third project license and the Project was first constructed and licensed by KPU in the 1940s. The project's Beaver Falls Development was expanded in the mid-1950s and then the Upper Silvis Development was expanded in the 1960s and the Silvis Powerhouse was rebuilt in the 1970s.
    - USFS: How many acres of Project lands reside on USFS lands?

      KPU/Kleinschmidt: Close to 500 acres of Project lands reside on USFS owned lands. We have a slide in the presentation that will give us the exact number.
    - KIC: How often does the Upper Silvis Dam Spillway spill water? And has any erosion occurred when it happens?

      KPU: The most recent spill occurred about 3 years ago. Spills occur every few years. No erosion apparent. Spills they have had recently are a foot or less of water. KPU does a good job and is careful about fully utilizing the water for generation.
    - USFS: Is Beaver Falls Creek anadromous?

      KPU: No, there is a waterfall barrier right at tidewater.
    - KIC: Based on population needs and energy growth needs and drinking water needs, could the dam or dams be raised to allow for additional water storage capacity? KIC considers this along the lines of greater climate change planning.

      KPU/Kleinschmidt: KPU would love more storage in the system. Raising a dam is not a proposal for relicensing because they already use all the water in the system. They could raise the dam, but KPU ultimately wouldn't have the water to fill the bigger area with.

This is an interesting point and one that's probably more of a regional discussion. Southeast Alaska Power Agency (SEAPA) recently raised the nearby Swan Lake Hydroelectric Facility pool for added storage capacity.

- **Review of Pertinent Information Identified in the Pre-Application Document (PAD)**
  - Katie Sellers (Kleinschmidt) provided a high-level overview of existing environmental information identified in the PAD. For more detailed information, please refer to the attached PowerPoint presentation or the Project PAD.
  - KIC asked to be referred to as the Ketchikan Indian Community instead of the Ketchikan Indian Corporation as depicted in the Federal Register/the Beaver Falls PAD.
  - Questions/Answers:
    - Alaska Department of Natural resources (Alaska DNR): How are the inflows depicted in the PAD calculated? What do the inflows describe?

      Kleinschmidt: Flows were estimated using an average of gaged flow data from 1921-1932 and 1956-1965 combined with back-calculated flow data (combination of generation data and pond level data) from 1989-2003. These flows represent what is coming out of the Beaver Falls Project, not Beaver Falls Creek specifically.
    - USFS: When was the last flow analysis conducted? Would that be updated as part of the relicensing? There's obviously changes going on in the area.

      Kleinschmidt/KPU: The last flow analysis was completed in 2007. The last analysis was completed using calculations from the reservoir level and generation data and without gaging data (back calculated) as there is not a gage located in the immediate project area. Not sure if an update will be required, but Beaver Falls has been developed for over 70 years now and we have a lot of historic data to rely on.
    - Alaska DNR: On the table of monthly flows there's a lot of monthly flow in May and June, is that a product of snowmelt?

      Kleinschmidt/KPU: Yes, that is a product of snowmelt.
    - KIC: Would be really interesting to see flows from the last few years. Weather patterns are dynamic right now. Important to gather projections for next 30-100 years for weather/climatic data.

      Kleinschmidt/KPU: Project has been operating since the 1940s, so there is a lot of historic data to look back on. Part of water resources section of the license application will need to take a look at regional data and regional projections.
    - Kleinschmidt: Question for Alaska Department of Fish and Game (ADFG), given the classification of Beaver Falls Creek as anadromous in the Alaska Anadromous Waters Catalogue, does that require any specific treatment/consultation on your part, even though it's not anadromous past the mouth/tidewater falls?

      ADFG: Nothing special should be required beyond normal consultation.

KIC: Can people access the lakes for canoeing?

KPU: Yes, if they would like.

- **Review of Proposed Studies and Mitigation Measures**
  - Katie Sellers (Kleinschmidt) provided a high-level overview of KPU's proposed studies and mitigation measures. For more detailed information, please refer to the attached PowerPoint presentation or the Project PAD.
  - Proposed Studies:
    - Rare and Invasive Plant Species Survey
    - Historic Structures Survey
  - Proposed Mitigation Measures
    - Rare and Invasive Plant Species Management Plan
    - Historic Properties Management Plan
    - Replace 3 picnic tables at Lower Silvis Dam Picnic Area
  - KIC (Tribal Conservation District) asked to be consulted with in regard to the rare and invasive plant survey and management plan. Tony Gallegos will be the point of contact for that.
  - USFS noted that they are currently conducting internal review of the PAD. Initial environmental issues identified so far include rare, threatened, and endangered botanical species, heritage, and hydrology.
  - Questions/Answers:
    - USFS: Will anything be addressed about potential landslides? How often do they occur?
    - KPU/Kleinschmidt: One slide occurred about 5 years ago and another about 13-14 years ago. Just a fact of the terrain is that it is really steep. Not a lot KPU can do about it.

      A Protection Mitigation and Enhancement Measure implemented as part of the Salmon Creek Project relicensing (Alaska Light and Power), a Project with similar issues, was to make the FERC boundary wide enough to include the road so that they didn't have to go through special use permitting needs after every landslide. It didn't fix the issue, but at least made it easier to respond to landslides. Could possibly be an option for Beaver Falls. Seemed like a practical way to deal with the issue at that Project.
    - KIC: Are there any aquatic invasive species present in the lakes?

      Kleinschmidt/USFS: None identified in literature review. USFS staff know the Project area pretty well and have not identified any aquatic invasive species in the Project area. Jon Hyde (USFS) may be able to provide additional information on the topic.

- **Next Steps/Conclusion**
    - Stakeholder study requests and PAD comments due on or before December 2, 2019.
    - Study requests and/or comments may be submitted to FERC in electronic format or in hardcopy format.
    - Study requests must meet the requirements as outlined by FERC's Traditional Licensing Process (18 CFR§16.8(b)(5)).

ATTACHMENT C

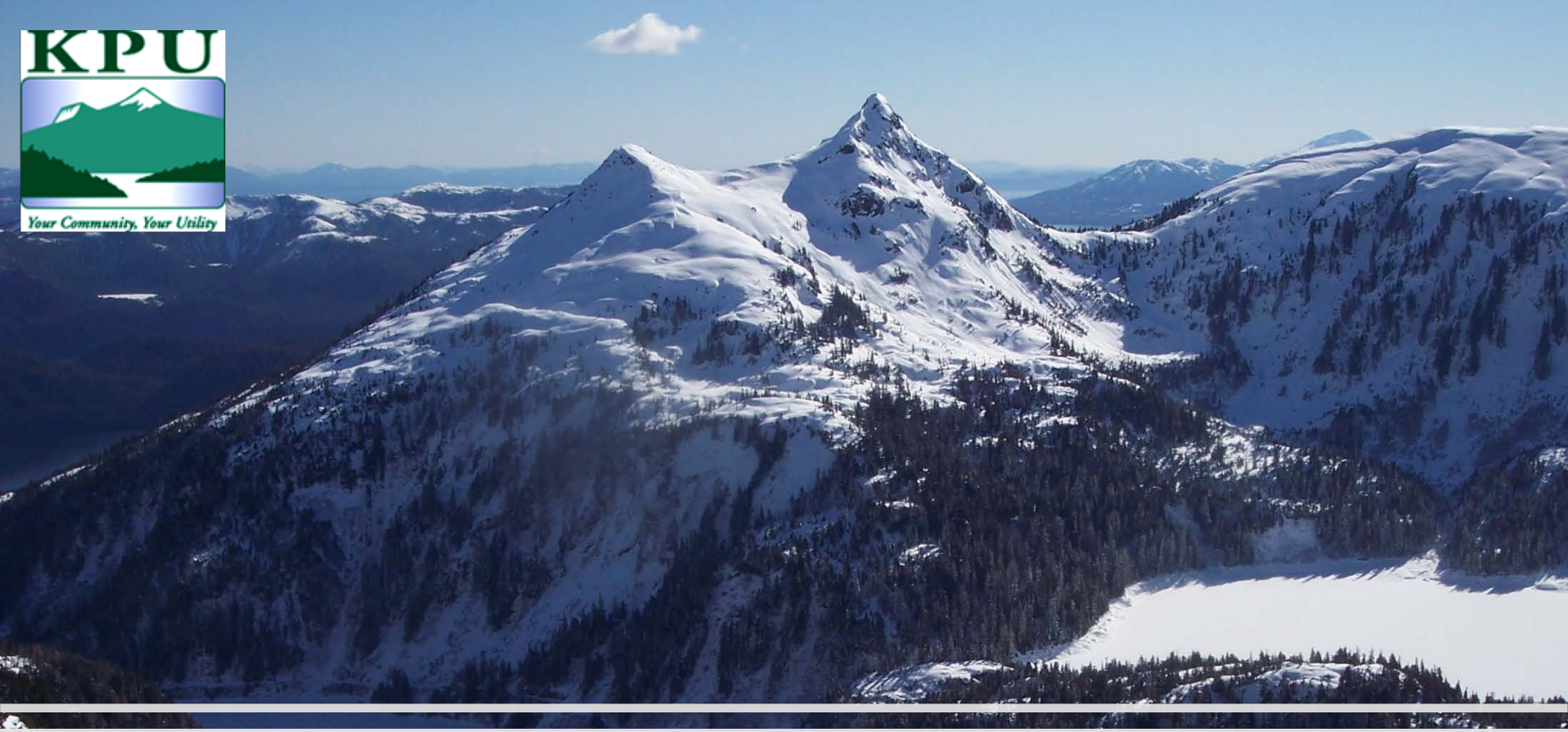
MEETING AUDIO RECORDING

(FILED SEPARATELY)

on CD via US Mail

ATTACHMENT D

MEETING PRESENTATION



Beaver Falls Hydroelectric Project (FERC No. 1922)
City of Ketchikan d/b/a Ketchikan Public Utilities

Joint Agency & Public Meeting

October 3, 2019

Agenda

- Meeting Purpose
- Review of Federal Energy Regulatory Commission (FERC) Relicensing Process
- Review of Project Layout and Operations
- Review of Pertinent Information Identified in the Pre-Application Document
- Review of Proposed Studies and Mitigation Measures
- Next Steps
- Site Visit Logistics

Meeting Purpose

- Provide information about the FERC licensing process and the Beaver Falls Project;

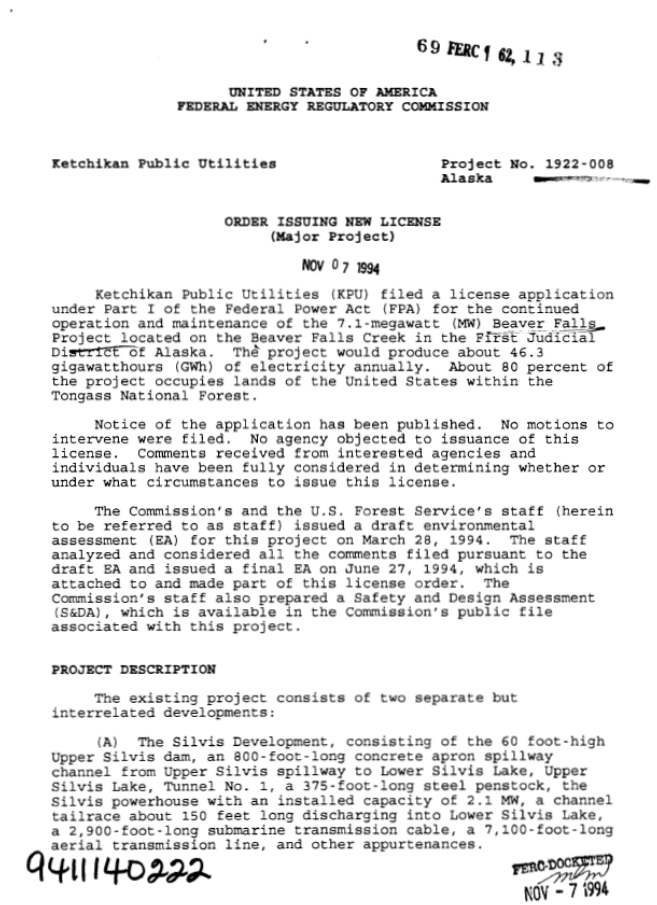
- Solicit information regarding the existing environmental resources associated with the Project and data that may need to be obtained; and

- Obtain agency and stakeholder opinions regarding the Project and its potential effect on existing resources.

FERC Relicensing Process

Beaver Falls Project License

- 30-year FERC license issued to City of Ketchikan, Alaska d/b/a Ketchikan Public Utilities (KPU) on November 7, 1994.
- FERC license expires October 31, 2024



69 FERC ¶ 62,113

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Ketchikan Public Utilities — Project No. 1922-008
Alaska

ORDER ISSUING NEW LICENSE
(Major Project)

NOV 07 1994

Ketchikan Public Utilities (KPU) filed a license application under Part I of the Federal Power Act (FPA) for the continued operation and maintenance of the 7.1-megawatt (MW) Beaver Falls Project located on the Beaver Falls Creek in the First Judicial District of Alaska. The project would produce about 46.3 gigawatthours (GWh) of electricity annually. About 80 percent of the project occupies lands of the United States within the Tongass National Forest.

Notice of the application has been published. No motions to intervene were filed. No agency objected to issuance of this license. Comments received from interested agencies and individuals have been fully considered in determining whether or under what circumstances to issue this license.

The Commission's and the U.S. Forest Service's staff (herein to be referred to as staff) issued a draft environmental assessment (EA) for this project on March 28, 1994. The staff analyzed and considered all the comments filed pursuant to the draft EA and issued a final EA on June 27, 1994, which is attached to and made part of this license order. The Commission's staff also prepared a Safety and Design Assessment (S&DA), which is available in the Commission's public file associated with this project.

PROJECT DESCRIPTION

The existing project consists of two separate but interrelated developments:

(A) The Silvis Development, consisting of the 60 foot-high Upper Silvis dam, an 800-foot-long concrete apron spillway channel from Upper Silvis spillway to Lower Silvis Lake, Upper Silvis Lake, Tunnel No. 1, a 375-foot-long steel penstock, the Silvis powerhouse with an installed capacity of 2.1 MW, a channel tailrace about 150 feet long discharging into Lower Silvis Lake, a 2,900-foot-long submarine transmission cable, a 7,100-foot-long aerial transmission line, and other appurtenances.

9411140222

FERC-DOCKETED
NOV - 7 1994

DC-A-5

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Process Choice

- KPU has elected to use FERC's Traditional Licensing Process (TLP) for relicensing
- FERC approved of KPU's use of the TLP on August 19, 2019
- TLP is split into three stages

TLP – Stage 1

Action	Timeline	Date
Stage 1: Initial Consultation		
Filing of NOI and PAD	5 Years Prior to License Expiration	July 16, 2019
FERC Approval of TLP and Notice of Intent to File a License Application	60 Days After NOI, PAD, TLP Request	August 19, 2019
Joint Agency Meeting	30-60 Days After TLP Approval	October 3, 2019
PAD Comments/Study Requests Due	60 Days After Joint Agency Meeting	December 2, 2019

TLP - Stage 1 Continued

Action	Timeline	Date
Stage 1: Initial Consultation		
Issue Draft Study Plan for Stakeholder Review	Prior to Study Start	February 2020
Provide Study Plan Comments/ Hold Study Plan Review Meeting	At least 30 days after Issuing Draft Study Plan	March 2020
Issue Final Study Plan	Prior to Study Start	April 2020

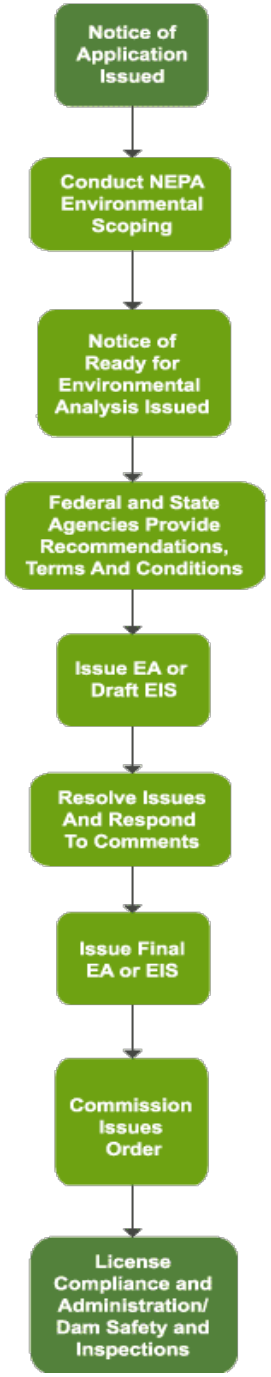
TLP Stage 2

Action	Timeline	Date
Stage 2: Studies and Draft Application		
Conduct First Season Studies	Begin after finalizing Study Plan	2020 Field Season
Conduct Second Season Studies (If Necessary)	Begin when field season opens	2021 Field Season
Submit Draft License Application (DLA)	Approximately 150 Days Before Submittal of Final License Application	June 3, 2022
Comments on DLA Due	90 Days After DLA Submittal	September 1, 2022

TLP Stage 3

Action	Timeline	Date
Stage 3: Final Application		
Submit Final License Application (FLA)	2 Years Prior to License Expiration	October 31, 2022

FERC Application Processing
October 2022 - October 2024



Basic Steps of Relicensing

1. Describe Project and identify key questions
   - Applicant describes existing project, potential future operations, identify potential issues (PAD)
   - Stakeholders ask questions and request studies
2. Answer questions and develop license application
   - Studies
   - Identify protection, mitigation and enhancement (PME) measures for new license
   - Submit license application
3. FERC conducts a review and issues license with conditions
   - Solicits comments from stakeholders
   - Receives terms and conditions from resources agencies (state, federal, tribal)
   - Adjudicates conflicts (if any)
   - Issue license

Potential Parallel Processes

- Water Quality Certification
  - In accordance with Section 401 of the Clean Water Act, FERC may not issue a license for a hydroelectric project unless the state certifying agency has either issued a water quality certification or has waived certification.
  - KPU will consult with ADEC regarding need for Water Quality Certification Application.

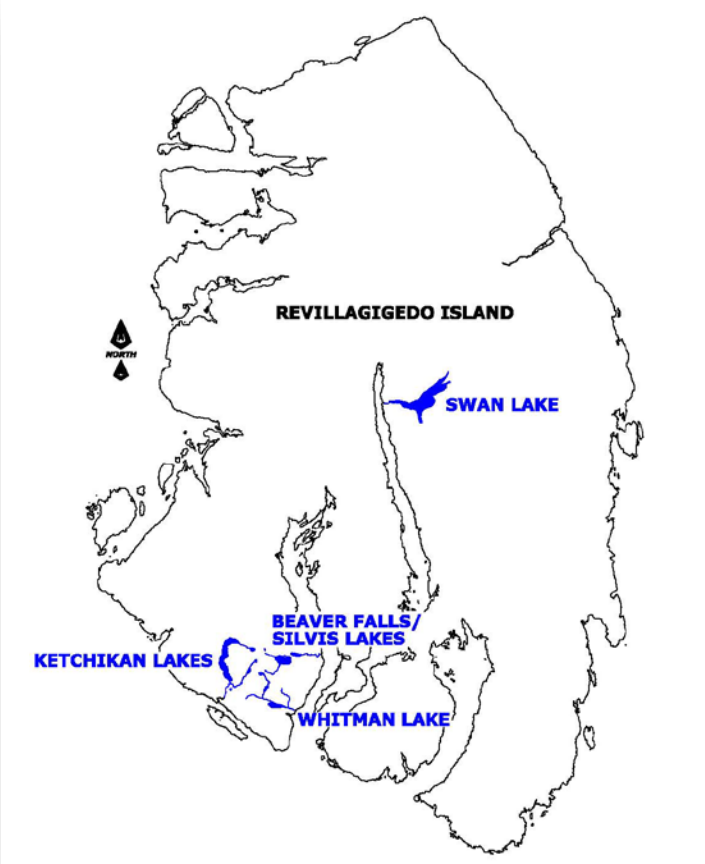
Potential Parallel Processes

- USFS Special Use Authorization (SUA)
  - No existing SUA for Project
    - USFS conditions pursuant to Federal Power Act included in existing FERC License (Articles 101 – 110)
  - Under certain circumstances, the Federal Land Policy and Management Act authorizes the USFS to issue, renew, or grant special use authorizations to occupy, use, or traverse National Forest System lands for the generation, transmission, and distribution of electric energy.
  - KPU will consult with USFS regarding need for SUA

Questions?

Overview of KPU
&
Beaver Falls Project

KPU Electrical System Generation Resources



KPU Hydro Generation	
Beaver Falls	7.1 MW
Ketchikan Lakes	4.2 MW
Whitman Lake	4.6 MW
SEAPA Hydro Generation	
Swan Lake	25 MW
Tyee Lake (Wrangell & Petersburg)	25 MW
KPU Diesel Generation	26 MW

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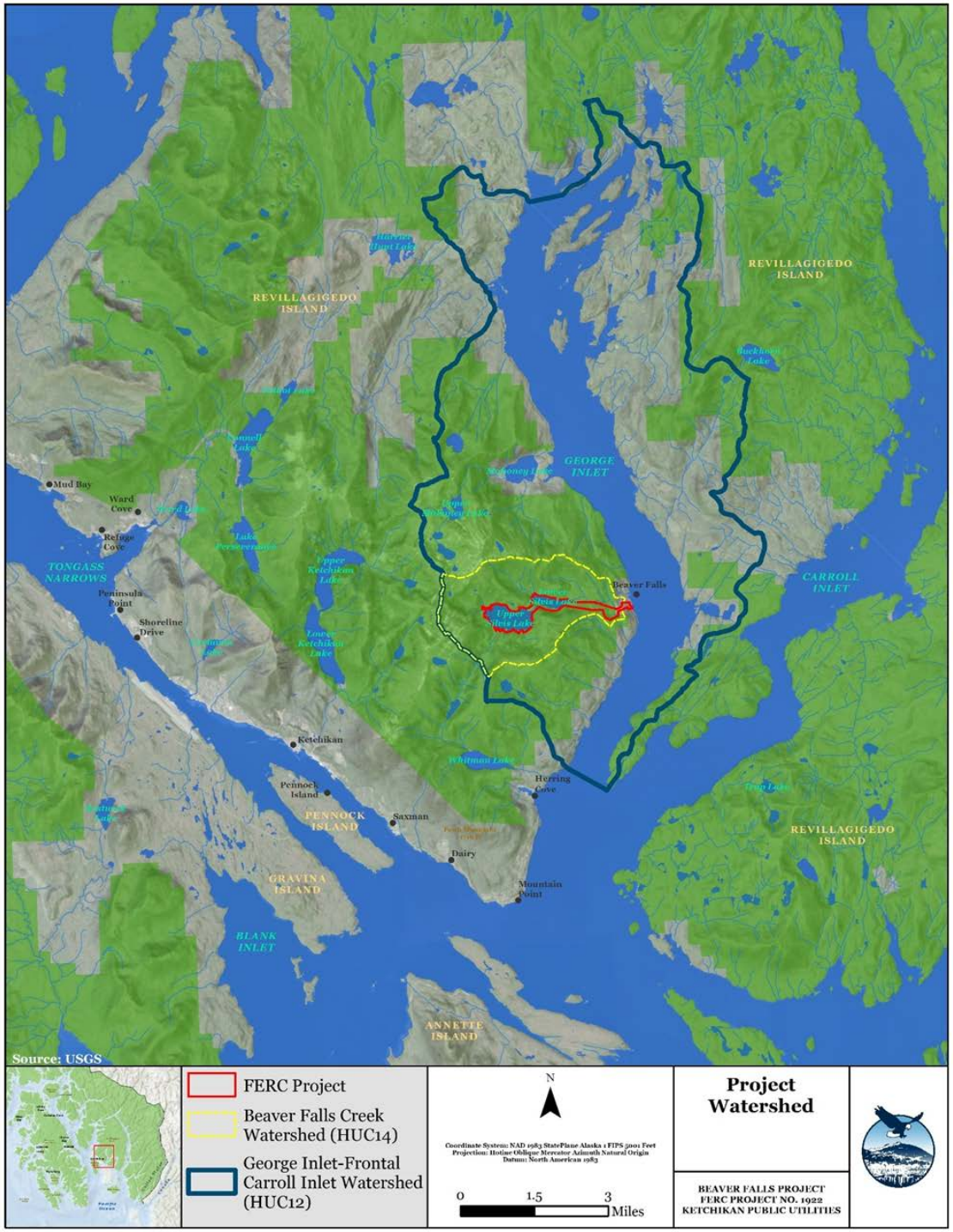
Beaver Falls Project Location

- Southeastern end of Revillagigedo Island on Beaver Falls Creek
- Beaver Falls Creek is located within the George Inlet-Frontal Carroll Inlet Watershed
- Drainage area for the Project primarily consists of several small mountain streams, Beaver Falls Creek, Upper Silvis Lake, and Lower Silvis Lake
  - Upper Silvis Lake Drainage: 3.4 sq mi
  - Lower Silvis Lake Drainage: 4.6 sq mi
  - Beaver Falls Creek Drainage: 7.2 sq mi


REVILLAGIGEDO ISLAND
REVILLAGIGEDO ISLAND
REVILLAGIGEDO ISLAND
GEORGE INLET
CARROLL INLET
TONGASS NARROWS
PENNOCK ISLAND
GRAVINA ISLAND
BLANK INLET
ANNETTE ISLAND
Mud Bay
Ward Cove
Refuge Cove
Peninsula Point
Shoreline Drive
Ketchikan
Pennock Island
Saxman
Dairy
Mountain Point
Herring Cove
Beaver Falls
Upper Beaver Lake
Upper Ketchikan Lake
Lower Ketchikan Lake
Lake Perseverance
Whitman Lake
Buckhorn Lake
Source: USGS
FERC Project
Beaver Falls Creek Watershed (HUC14)
George Inlet-Frontal Carroll Inlet Watershed (HUC12)
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Coordinate System: NAD 1983 StatePlane Alaska 1 FIPS 5001 Feet
Projection: Hotine Oblique Mercator Azimuth Natural Origin
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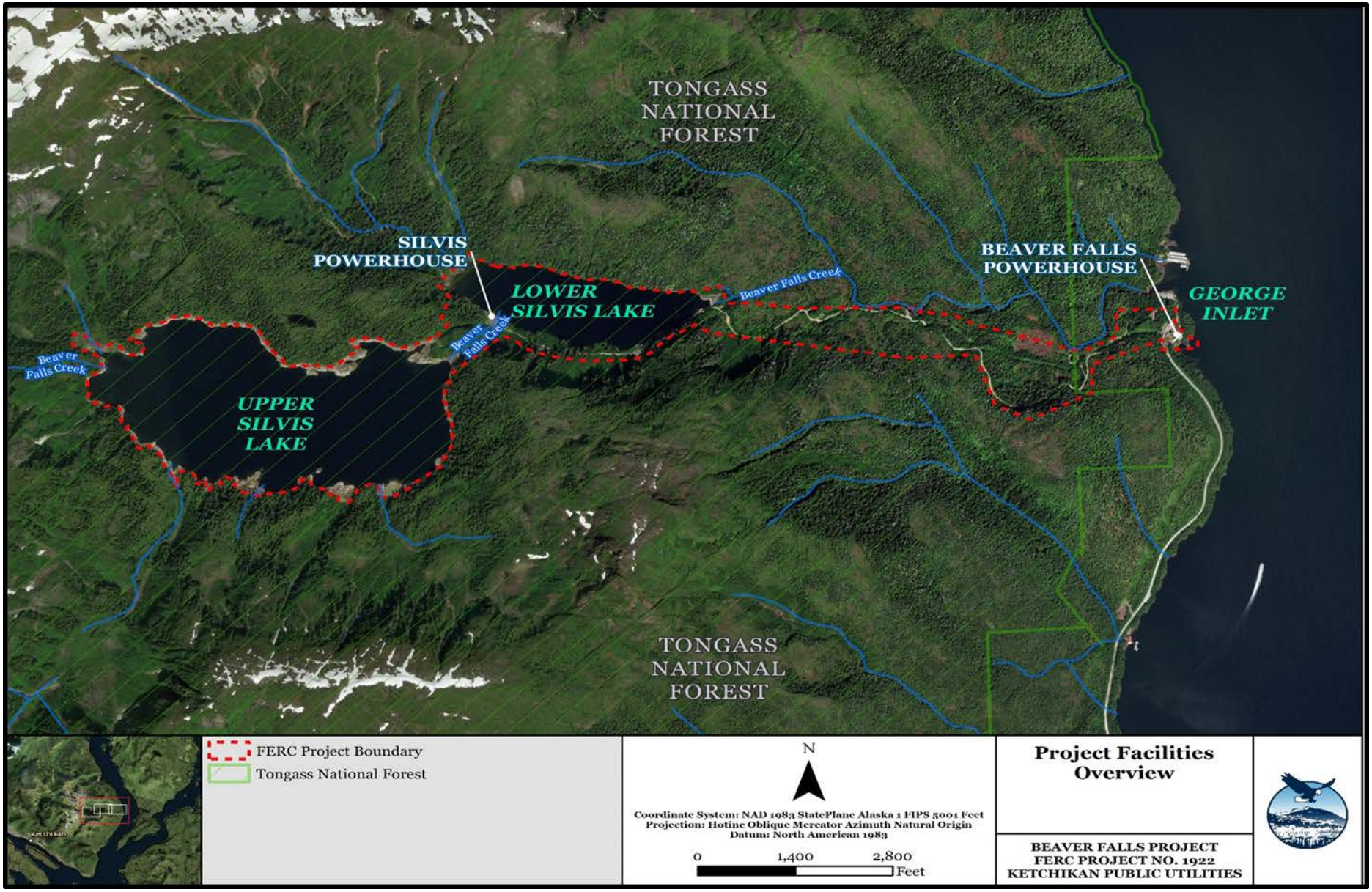
Project Watershed
REAVER FALLS PROJECT
FERC PROJECT NO. 1922
KETCHIKAN PUBLIC UTILITIES


TONGASS
NATIONAL
FOREST
SILVIS
POWERHOUSE
LOWER
SILVIS LAKE
Beaver Falls Creek
BEAVER FALLS
POWERHOUSE
GEORGE
INLET
Beaver
Falls Creek
Beaver
Falls Creek
UPPER
SILVIS
LAKE
TONGASS
NATIONAL
FOREST
FERC Project Boundary
Tongass National Forest
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Coordinate System: NAD 1983 StatePlane Alaska 1 FIPS 5001 Feet
Projection: Hotine Oblique Mercator Azimuth Natural Origin
Datum: North American 1983
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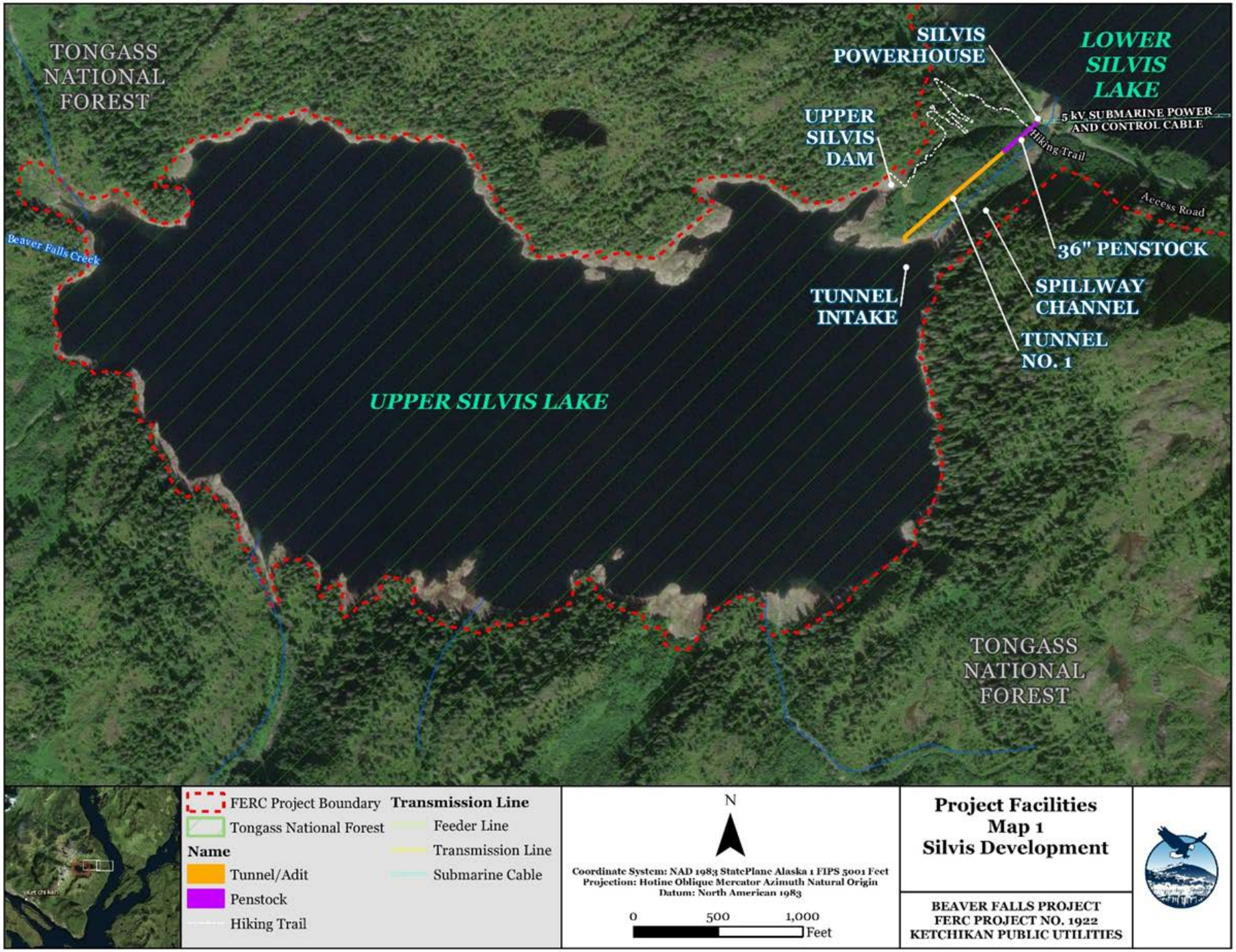
Feet
Project Facilities
Overview
BEAVER FALLS PROJECT
FERC PROJECT NO. 1922
KETCHIKAN PUBLIC UTILITIES



Project Facilities Map 1 Silvis Development

BEAVER FALLS PROJECT
FERC PROJECT NO. 1922
KETCHIKAN PUBLIC UTILITIES

Upper Silvis Lake

- 300 acre surface area (max)
- Normal maximum water surface elevation 1,154 ft.
- Minimum water surface elevation 1,055 ft.
- 22,000 acre-ft usable storage capacity

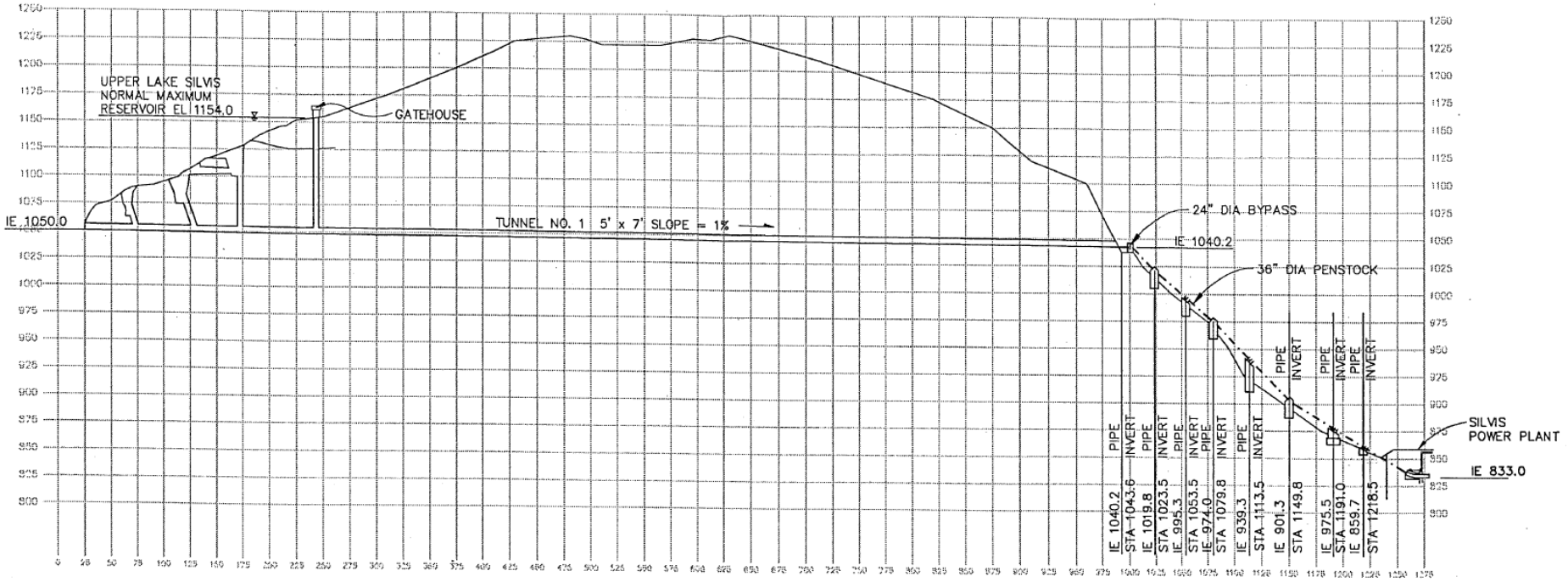
Upper Silvis Dam

- Concrete-faced rock-filled dam
- 60 ft-high by 135 ft-long
- Dam crest El. 1,164 ft
- Spillway crest El. 1,154 ft

Upper Silvis Spillway

- Spillway is ungated concrete weir
- Rock channel 20 ft-wide by 800 ft-long

Upper Silvis Intake and Power Conduit



POWER CONDUIT PROFILE
UPPER LAKE SILVIS TO SILVIS POWERHOUSE
NO SCALE

NOTE:
BASED ON UNSURVEYED INFORMATION.

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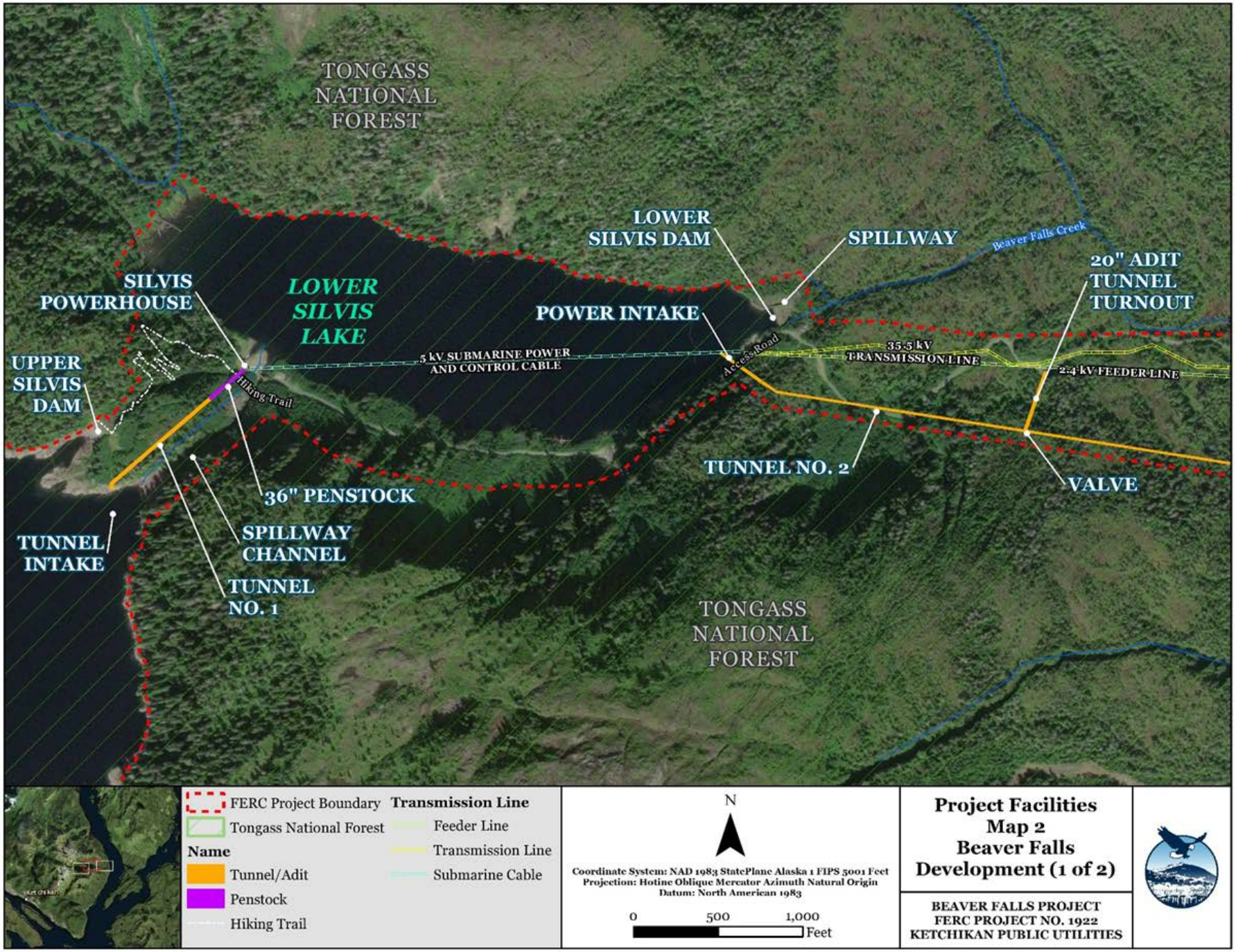
Upper Silvis Penstock

Silvis Powerhouse

- 1970s era reinforced concrete structure, 30-ft by 40-ft by 20-ft high
- Single 2.1 MW Francis-type, turbine-generator unit
- Water is discharged via a rip rap tailrace channel 150-ft long
- Remote monitoring and controls enabled at powerhouse

Silvis Transmission

- 2,900-foot-long, 5 kV, 250 MCM submarine power cable through Lower Silvis Lake. Transmits generation to a 2,500 kVA, 34.5-4.16 kV transformer located near Lower Silvis Dam.
- 7,000-foot-long, 34.5 kV aerial transmission line transmits the generation from the transformer to the Beaver Falls Switchyard.


TONGASS NATIONAL FOREST
LOWER SILVIS DAM
SPILLWAY
Beaver Falls Creek
20" ADIT TUNNEL TURNOUT
SILVIS POWERHOUSE
LOWER SILVIS LAKE
POWER INTAKE
UPPER SILVIS DAM
5 kV SUBMARINE POWER AND CONTROL CABLE
Access Road
35.5 kV TRANSMISSION LINE
2.4 kV FEEDER LINE
Hiking Trail
TUNNEL NO. 2
VALVE
36" PENSTOCK
SPILLWAY CHANNEL
TUNNEL INTAKE
TUNNEL NO. 1
TONGASS NATIONAL FOREST
FERC Project Boundary
Tongass National Forest
Name
Tunnel/Adit
Penstock
Hiking Trail
Transmission Line
Feeder Line
Transmission Line
Submarine Cable
N
Coordinate System: NAD 1983 StatePlane Alaska 1 FIPS 5001 Feet
Projection: Hotine Oblique Mercator Azimuth Natural Origin
Datum: North American 1983
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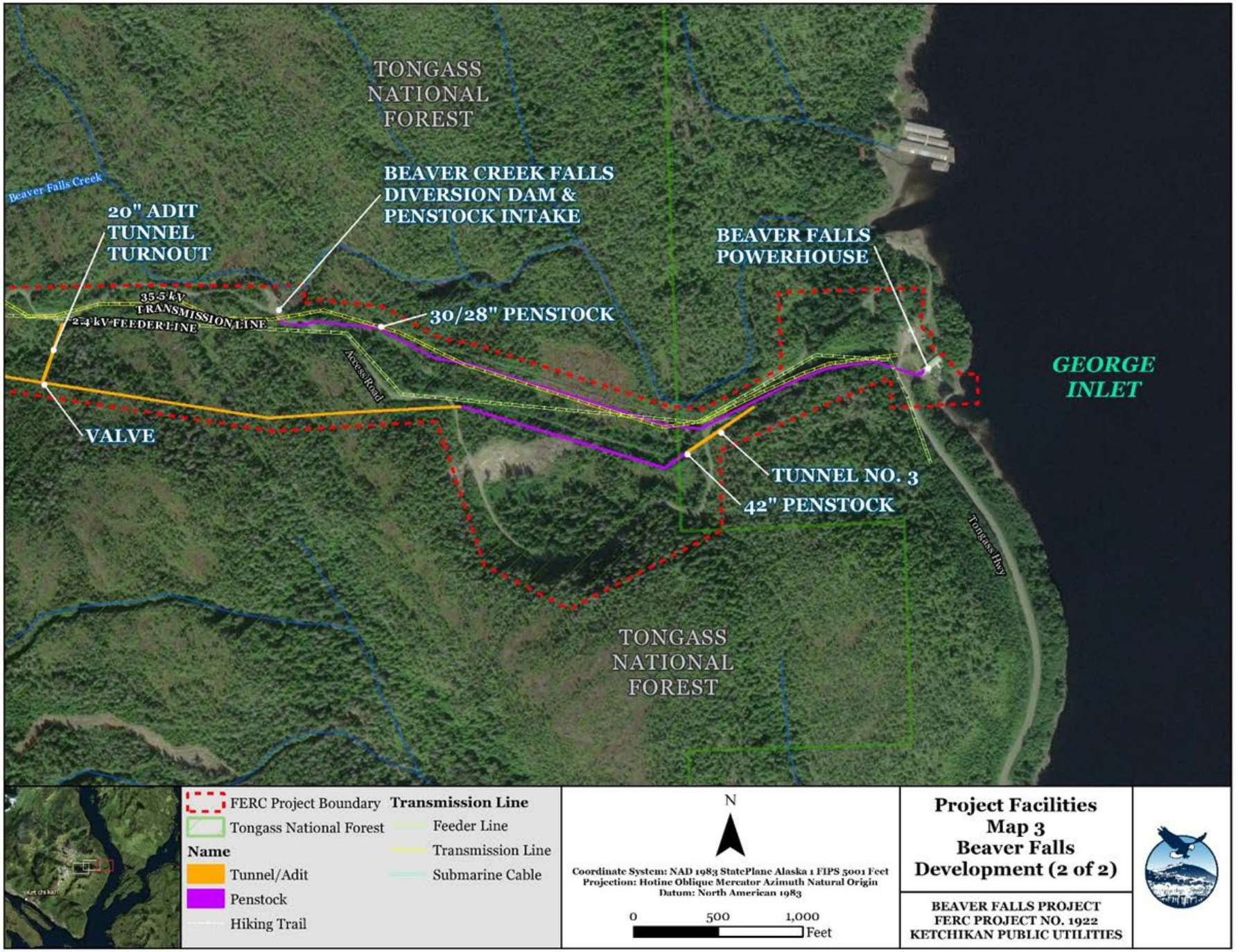
Feet
Project Facilities Map 2 Beaver Falls Development (1 of 2)
BEAVER FALLS PROJECT
FERC PROJECT NO. 1922
KETCHIKAN PUBLIC UTILITIES



Project Facilities Map 3 Beaver Falls Development (2 of 2)

BEAVER FALLS PROJECT
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Lower Silvis Lake

- 67.5 acre surface area at normal maximum water surface elevation of 827 ft msl.
- Minimum water surface elevation is 802 ft msl.
- 1,600 acre-ft useable storage capacity

Lower Silvis Dam & Spillway

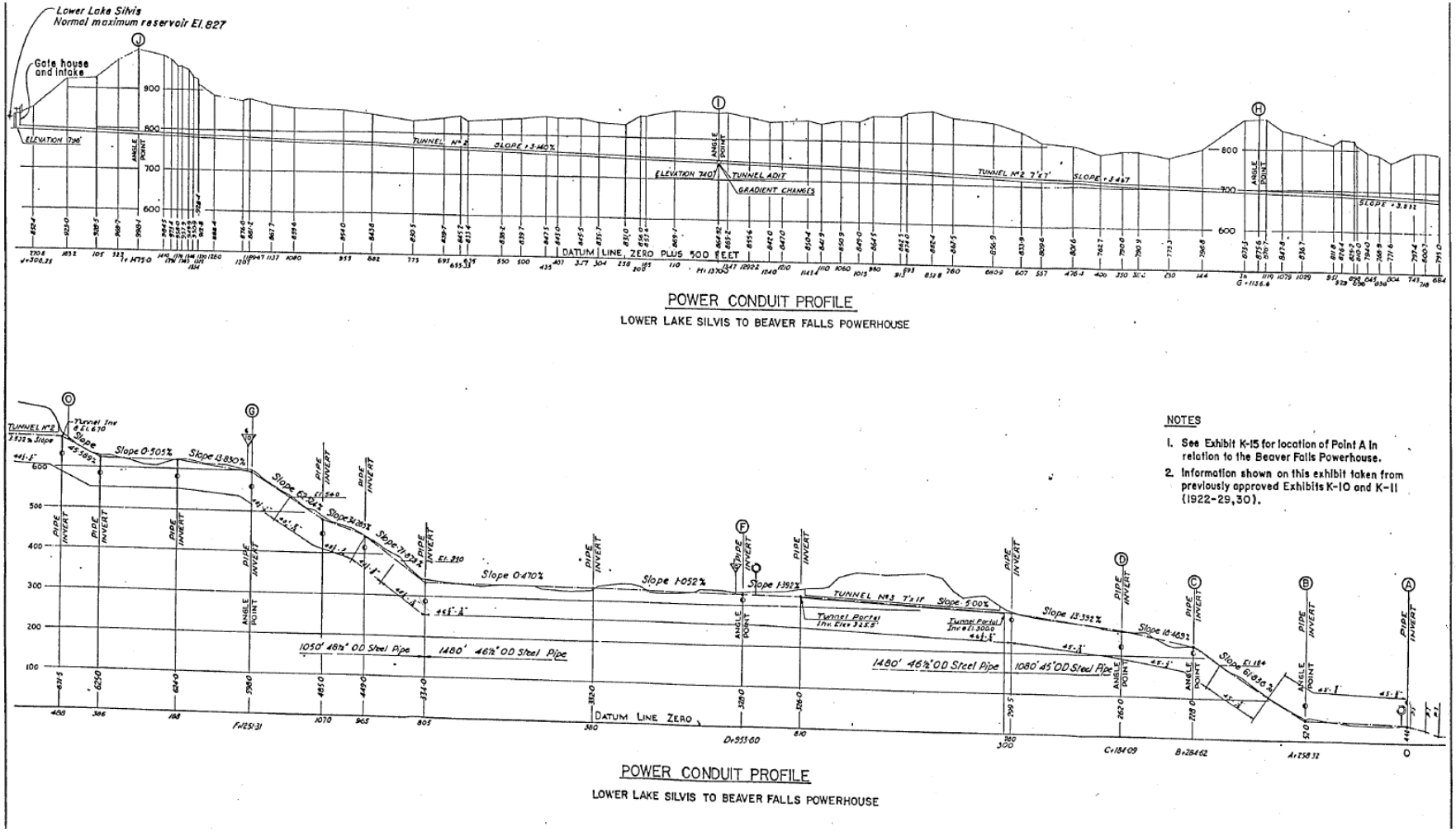
- Concrete-faced rock-filled structure
- 32-ft high by 140-ft long
- Dam crest El. 835 ft
- Ungated control weir and unlined rock discharge channel on the left abutment of Lower Silvis Dam.

Lower Silvis Intake & Power Conduit

- Intake with coarse trash racks and sluice gate.
- 3,800-ft-long Tunnel to 3,600 ft-long above-ground 42” steel penstock that conveys water to Beaver Falls Powerhouse
- Adit taps the tunnel and discharges water into Beaver Falls Creek, 500 feet upstream of the Beaver Falls Creek Diversion Dam and Intake.

KPU
Your Community, Your Utility

Power Conduit Elevation Profile



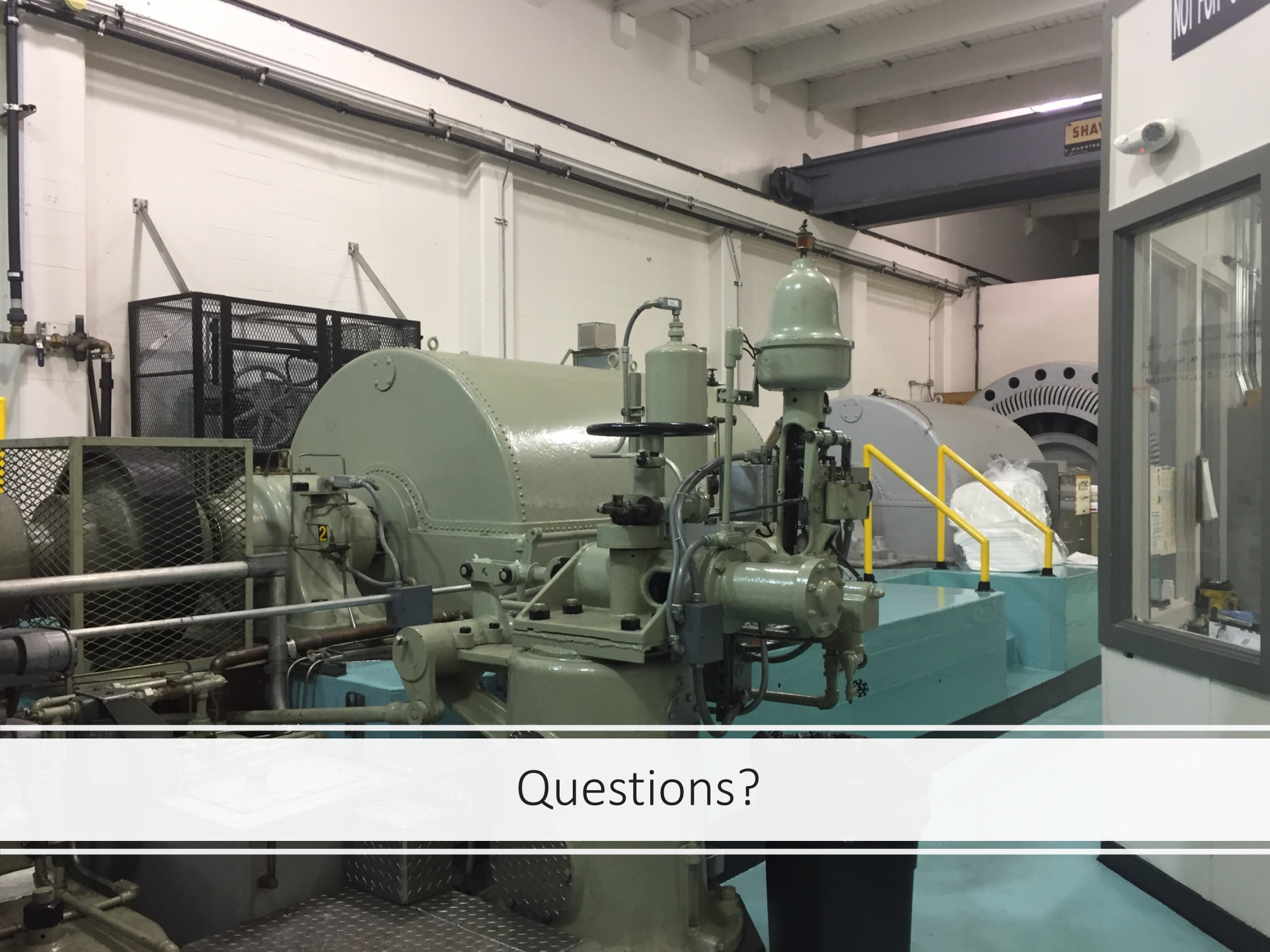
Beaver Falls Creek Diversion Dam

- Located on Beaver Falls Creek 2/3 mile downstream of Lower Silvis Lake.
- Mass concrete overflow structure 3 ft high by 40 ft long
- A 4,170-ft-long 30”/28” steel penstock conveys water from the Diversion to Beaver Falls Powerhouse.


Phone
phone

Existing Operations

- Upper Silvis Lake provides primary storage for entire Project.
  - Upper Silvis Lake managed between 1,154 - 1,055 ft msl to maintain Lower Silvis Lake's elevation.
  - Lower Silvis Lake maintained near 827 ft msl to maximize head.
  - No fixed rule curves for Project operations.
- Except during spring runoff, most water is used for generation.
- Adit provides added flexibility to operations. Used for peaking in winter or when excess water is present.
- Minimum flows are not released at the Project. Beaver Falls Creek generally remains watered throughout the year.



Questions?

Review of Pertinent Information Identified in the PAD

Geology

- Coastal Foothills physiographic province characterized by high mountains separated by level valley bottoms.
- Project area has steep talus covered slopes with soils primarily composed of sand and loam.
- Debris avalanches common in southeast Alaska
  - A debris avalanche destroyed the original Silvis Powerhouse in 1969.
  - A debris avalanche occurred approximately 5 years ago below the Lower Silvis Dam and across the access road
- Ketchikan is classified as a Seismic Zone 2 area

Water Quantity

- River gage is not present within the local Project area.
- River flow data for the Project is estimated using an average of the hydrology calculations previously completed in 1992 (last relicensing) and 2007 (plant upgrade analysis).
  - 1992 Relicensing effort analyzed flows from 1921-1932 and 1956-1965 (data directly from gage)
  - 2007 Upgrade Analysis analyzed flows from 1989-2003 (back-calculated data that utilized reservoir elevations and generation data)

Calculated Inflows

Month	Upper Silvis Lake Mean Inflow (cfs)	Lower Silvis Lake Mean Inflow (cfs)	Beaver Falls Powerhouse Mean Inflow (cfs)
January	48.8	18.2	14.5
February	43.7	16.1	13.6
March	42.1	18.6	13.7
April	51.4	17.8	14.0
May	94.35	25.6	18.6
June	95.9	24.6	15.2
July	65.8	21.9	12.9
August	55.8	26.1	16.7
September	67.9	26.2	17.9
October	85.05	25.65	18.9
November	68.95	24.55	17.8
December	56.45	19.1	13.9
Annual	64.7	22.05	15.7

Previous Relicensing – Flow Duration Curve

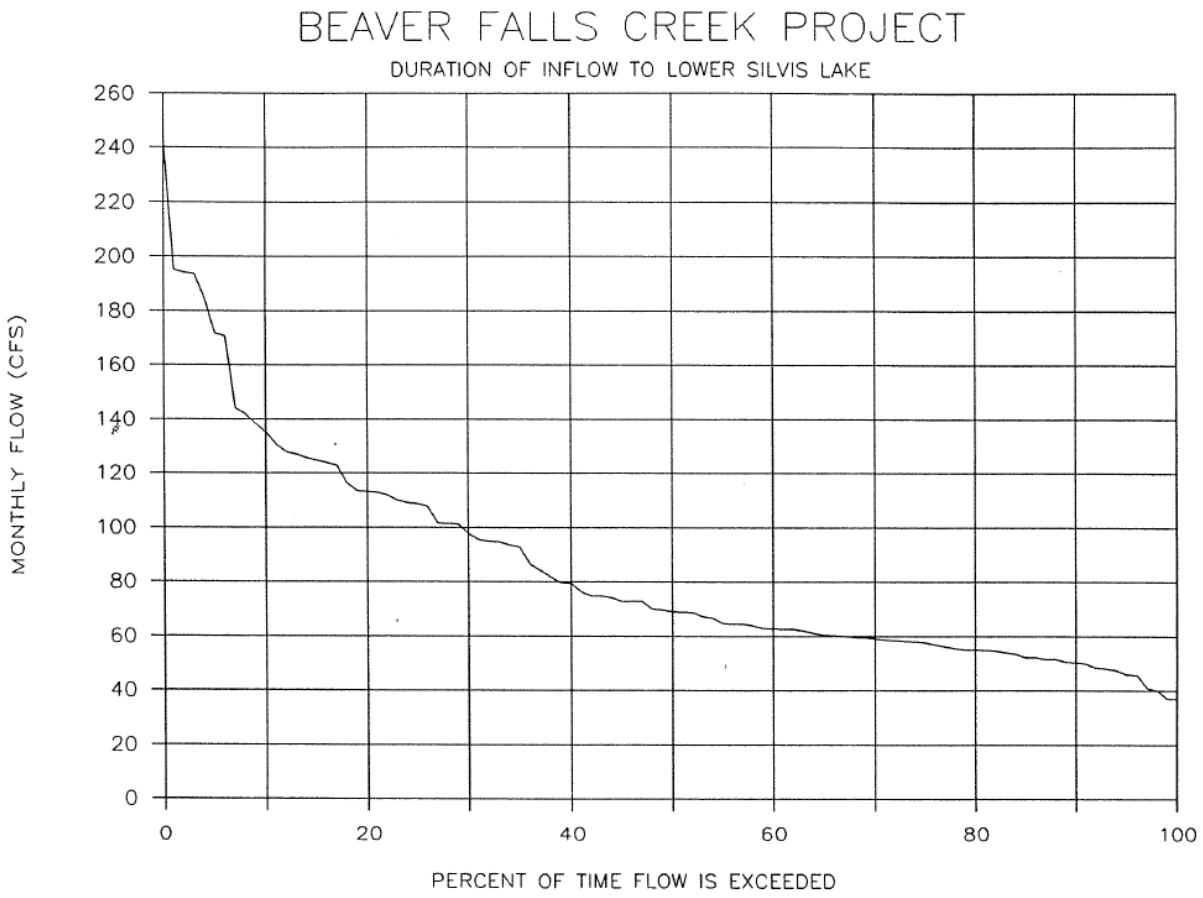


FIGURE II-1

Water Quality

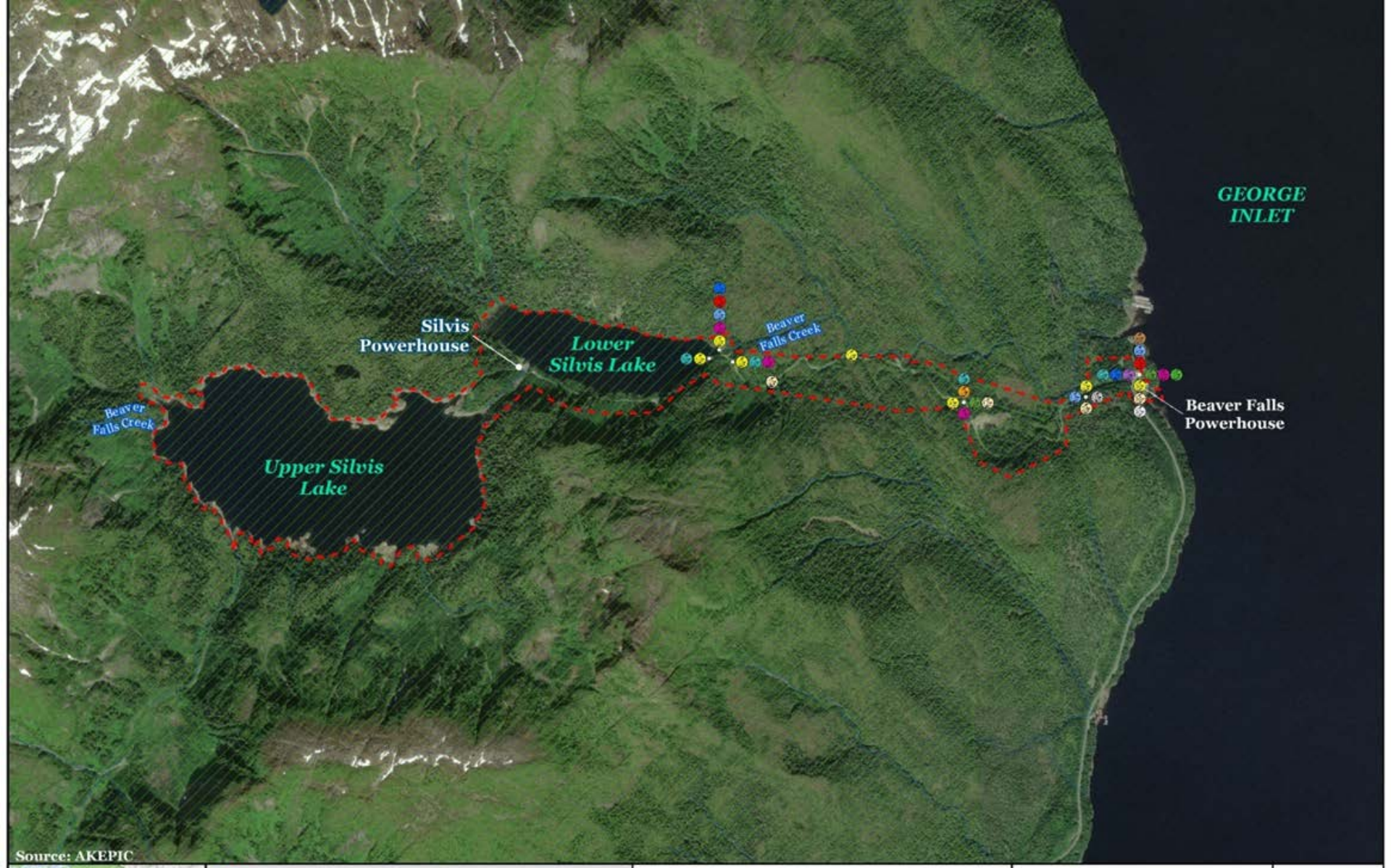
- Water Quality in Upper and Lower Silvis Lakes and Beaver Falls Creek has historically been excellent.
- Historical data obtained during the 1992 relicensing effort indicated that the Project's water quality parameters generally met or exceeded state standards for (1)(C) waters.

Aquatic Resources

- The falls at tidewater on Beaver Falls Creek have precluded the establishment of any natural run of anadromous salmonids in the system.
  - Alaska Anadromous Waters Catalogue classifies the stream as anadromous because of chum and pink salmon presence at the stream mouth below the falls.
- Upper and Lower Silvis Lakes were stocked with rainbow and possibly cutthroat trout in the 1950s by ADFG.
  - Population of rainbow trout naturally reproducing in Lakes (1988, 1990, 1992 surveys)
  - No reports of cutthroat presence in Project area
- George Inlet is designated Essential Fish Habitat for chum, pink, coho, sockeye, and chinook salmon.

Wildlife & Botanical Resources

- Large Mammal Species
  - Sitka black-tail deer
  - Black bear
  - Mountain goats
  - Alexander Archipelago wolves
  - Hunting for deer, black bear, and mountain goats occurs in the Project vicinity
- Coastal Western Hemlock-Sitka Spruce Forests Ecoregion
  - Freshwater forested/shrub wetland, freshwater pond, and lake habitats within the Project area
- Non-native & invasive botanical species identified along Project access road/foot trail by the Alaska Exotic Plant Information Clearinghouse in 2004 & 2006.



FERC Project Boundary Tongass National Forest

AKEPIC Species Inventory

- Kentucky bluegrass (*Poa pratensis*)
- Annual bluegrass (*Poa annua*)
- Big chickweed (*Cerastium fontanum*)
- Colonial bentgrass (*Agrostis capillaris*)
- Common dandelion (*Taraxacum officinale*)
- Common plantain (*Plantago major*)
- Common sheep sorrel (*Rumex acetosella*)
- Creeping buttercup (*Ranunculus repens*)
- Curly dock (*Rumex crispus*)
- Orange hawkweed (*Hieracium aurantiacum*)
- Oxeye daisy (*Leucanthemum vulgare*)
- Purple foxglove (*Digitalis purpurea*)
- Sweet vernal grass (*Anthoxanthum odoratum*)
- White clover (*Trifolium repens*)

N

Coordinate System: NAD 1983 StatePlane Alaska 1 FIPS 5001 Feet
Projection: Hotine Oblique Mercator Azimuth Natural Origin
Datum: North American 1983

0 1,000 2,000 Feet

Non-native, Invasive, and Noxious Weed Species Observed in the Project Boundary

BEAVER FALLS PROJECT
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Rare, Threatened, and Endangered Species

- U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Consultation (IPaC) Report identifies no federally listed threatened, endangered, or candidate species within the Project area.
- 2016 Tongass National Forest Plan identifies:
  - Western distinct population segment (DPS) of the Steller sea lion (federal endangered species)
  - Mexico DPS of the Humpback Whale (federal threatened and state endangered species)
- 2009 Forest Service Alaska Region Sensitive Species List identifies 16 plant and 4 wildlife species.
- 2019 Consultation with Alaska Natural Heritage Program identifies 4 rare species on Revillagigedo Island

Forest Service Alaska Region Sensitive Species List (2009)

Common Name	Scientific Name	Status
Plants		
Eschscholtz's little nightmare*	Aphragmus eschscholtzianus	FS Sensitive
Moosewort fern	Botrychium tunux	FS Sensitive
Moonwort fern, no common name	Botrychium yaaxudakeit	FS Sensitive
Edible thistle	Cirsium edule var. macounii	FS Sensitive
Calder's loveage	Ligusticum calderi	FS Sensitive
Pale poppy*	Papaver alboroseum	FS Sensitive
Unalaska mist-maid	Romanzoffia unalaschcensis	FS Sensitive
Spatulate moonwort	Botrychium spathulatum	FS Sensitive
Mountain lady's slipper	Cypripedium montanum	FS Sensitive
Large yellow lady's slipper	Cypripedium parviflorum var. pubescens	FS Sensitive
Lichen, no common name	Lobaria amplissima	FS Sensitive
Alaska rein orchid	Piperia unalascensis	FS Sensitive
Lesser round-leaved orchid	Platanthera orbiculata	FS Sensitive
Kruckeberg's swordfern	Polystichum kruckebergii	FS Sensitive
Henderson's checkermallow	Sidalcea hendersonii	FS Sensitive
Dune tansy	Tanacetum bipinnatum subsp. huronense	FS Sensitive
Wildlife		
Kittlitz's Murrelet	Brachyramphus brevirostris	FS Sensitive*
Queen Charlotte goshawk	Accipiter gentilis laingi	FS Sensitive
Aleutian Tern	Sterna aleutica	FS Sensitive
Black oystercatcher	Haematopus bachmani	FS Sensitive

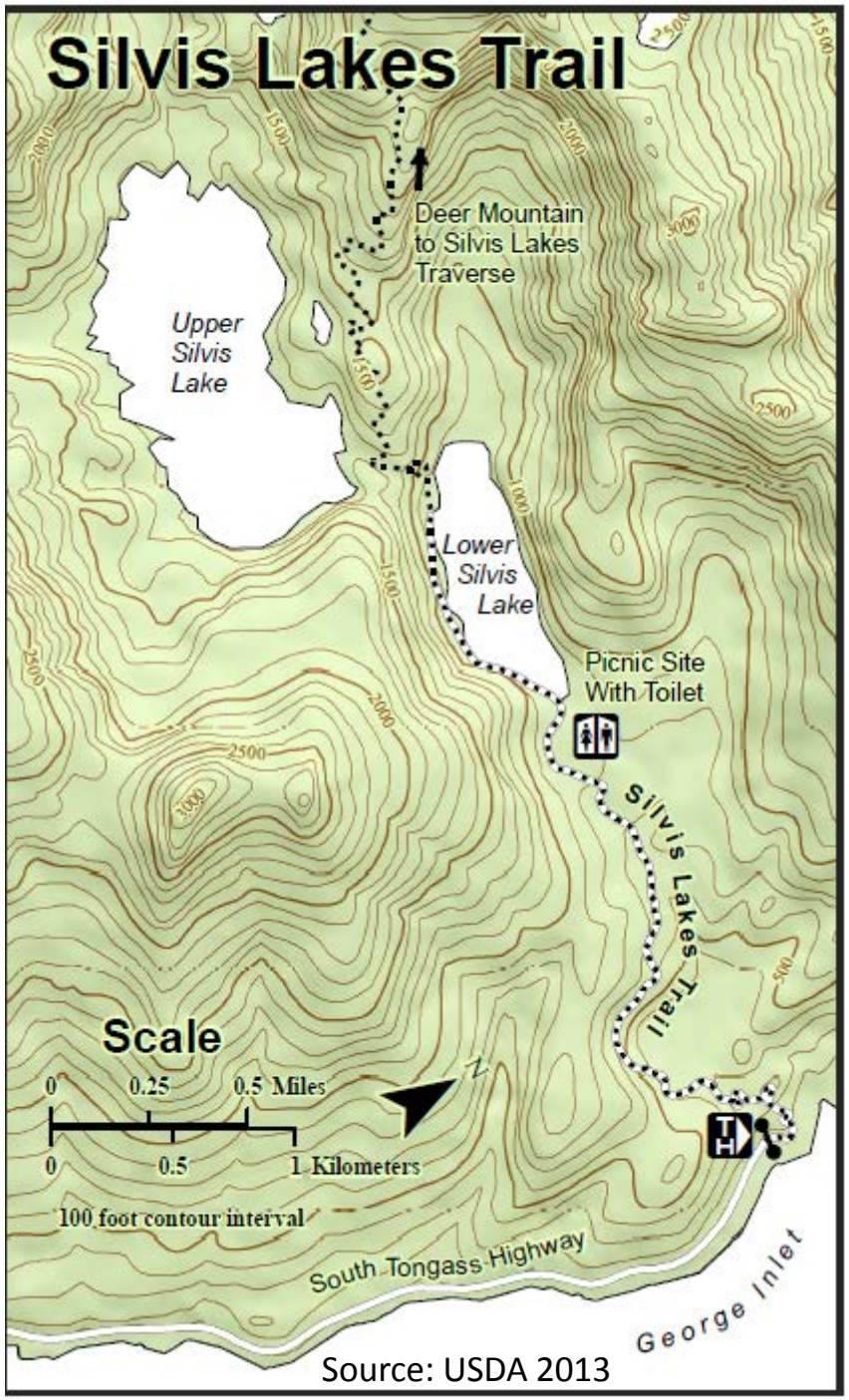
Alaska Natural Heritage Program Revillagigedo Island Rare Species List

Common Name	Scientific Name	Status
Western Screech Owl	Megascops kennicottii	S2
Revillagigedo Island Red-backed Vole	Myodes gapperi soleus	S3
Alexander Archipelago Wolf	Canis lupus ligoni	S3
Olive-sided flycatcher	Contopus cooperi	S4; S5B

Recreation

- Project traversed by a primitive access road that doubles as a recreation trail (Silvis Lakes Trail).
  - Parking area, informational kiosk, Project information board, and hiker sign-in located at the base of the trail.
  - KPU seasonally maintains three picnic tables, trash receptacles, fire rings, and a toilet at the eastern end of Lower Silvis Lake.
  - Access road is owned and maintained by KPU. KPU funds the U.S. Forest Service (USFS) for annual foot trail maintenance activities between Lower Silvis and Upper Silvis Lakes.
  - The Silvis Lakes Trail joins with the USFS Deer Mountain-John Mountain trail system that takes hikers into the City of Ketchikan


LOWER SILVIS LAKE 2 1/2
UPPER SILVIS LAKE 3
DEER MTN TRAILHEAD 13 3/4



Source: USDA 2013

Land Use

- Beaver Falls Project FERC boundary contains 478.4 acres of Tongass National Forest lands; balance is KPU (Cape Fox lands abut)
- Primary USFS Land Use Designations within Project boundary: Semi-Remote Recreation & Old Growth Habitat
- Cape Fox Corporation owns lands adjacent to the Beaver Falls Project

Historic Resources

- Project initially developed by the City of Ketchikan in 1946
- Second phase of development occurred in 1954
- Third phase of development in 1967-1968
- 1976 Re-construction of Silvis Powerhouse
- Cultural Resources Survey and Archaeological Survey (1991) conducted during the last relicensing effort.
- Project's 1992 relicensing effort determined no archaeological or historic sites eligible for inclusion in the National Register of Historic Places

Tribal Resources

- Tribes or tribal corporations having potential interest in the Beaver Falls Project relicensing include:
  - Metlakatla Indian Community
  - Cape Fox Corporation
  - SEALASKA Corporation
  - Ketchikan Indian Corporation
  - Central Council of the Tlingit and Haida Indian Tribes

Proposed Studies

Rare and Invasive Plant Species Survey

- Identify and map locations of the lesser round-leaved orchid, other rare plant species, and invasive/noxious plant species located within Project boundary.
- Targeted surveys along the perimeter of the access road, and around Upper Silvis Dam, Lower Silvis Dam, and Beaver Falls Powerhouse.
- Spatial data generated by surveys will provide framework for a rare plant species and invasive/noxious species management plan.
- Consult with USFS, USFWS, and ADFG in development of study.

Historic Structures Survey

- Conduct a Historic Structures Survey for Project structures older than 50-years of age.
- Complete National Register of Historic Places Nomination Form.
- Consult with Alaska State Historic Preservation Office in development of study plan.

Proposed Protection Mitigation and Enhancement (PM&E) Measures

PM&E Measures

- Rare and Invasive Plant Species Management Plan
  - Utilize spatial information gained in study to develop a management plan for maintenance activities in the Project area.
  - Consult with USFS, USFWS, ADFG in development of plan
- Historic Properties Management Plan (HPMP)
  - Incorporate information gained in Historic Structures Survey into an HPMP. Identify historic structures within Project boundary and outline consultation needs for Project maintenance and construction activities.
  - Consult with Alaska SHPO in development of plan
- Replace 3 picnic tables at Lower Silvis Dam picnic area

Review of Additional Information Sources and/or Information Gaps

Next Steps

Comments and Study Requests

- Stakeholders may submit PAD comments, additional relevant information, and study requests to KPU/FERC within 60 Days – by **December 2, 2019**
- Written Correspondence:

  Kimberly Bose, Secretary
  Federal Energy Regulatory Commission
  888 First Street, N.E.
  Washington, DC 20426
- Electronic Correspondence:
  http://www.ferc.gov/docs-filing/efiling.asp

Study Request Requirements

- Identify the determination of necessary studies to be performed or information to be provided by the applicant;
- Identify the basis for its determination;
- Discuss its understanding of the resource issues and its goals objectives for these resources;
- Explain why each study methodology recommended by it is more appropriate than any other available methodology alternatives, including those identified by the potential applicant;
- Document that the use of each study methodology recommended by it is a generally accepted practice;
- Explain how the studies and information requested will be useful to the agency, Indian tribe, or member of the public in furthering its resource goals and objectives.

Relicensing Resources

- Part of the Project Distribution List
- Project Website: https://www.beaverfallsrelicensing.com/
- E-Subscribe to P-1922: http://www.ferc.gov/docs-filing/esubscription.asp

KPU Relicensing Contacts

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2930 Tongass Avenue
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Katie Sellers
Kleinschmidt Associates
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Falmouth, ME 04105
Phone: 207-416-1218
Email: katie.sellers@kleinschmidtgroup.com

Site Visit

Logistics

- Location/Time
  - Address: 12868 S Tongass Hwy., Ketchikan, AK
  - Immediately following this meeting
  - KPU providing packed lunches
- Safety
  - Parking/Meeting Area
  - Personal Protective Equipment (PPE)

Thank You!
Additional Questions?