ALASKA ENERGY AUTHORITY

BRADLEY LAKE + DIXON OVERVIEW

Bryan Carey, PE
Director of Owned Assets

Joint Agency and Public Meeting
June 14, 2022

ALASKA ENERGY AUTHORITY

Bradley Lake Hydro Project

- Located 25 miles northeast of Homer and serves Railbelt
- Completed in 1991
- Funding by State of Alaska and Railbelt utilities
- Owned by AEA and managed to maximum extent by Railbelt utilities
- Largest hydroelectric Project in Alaska

Battle Creek Project

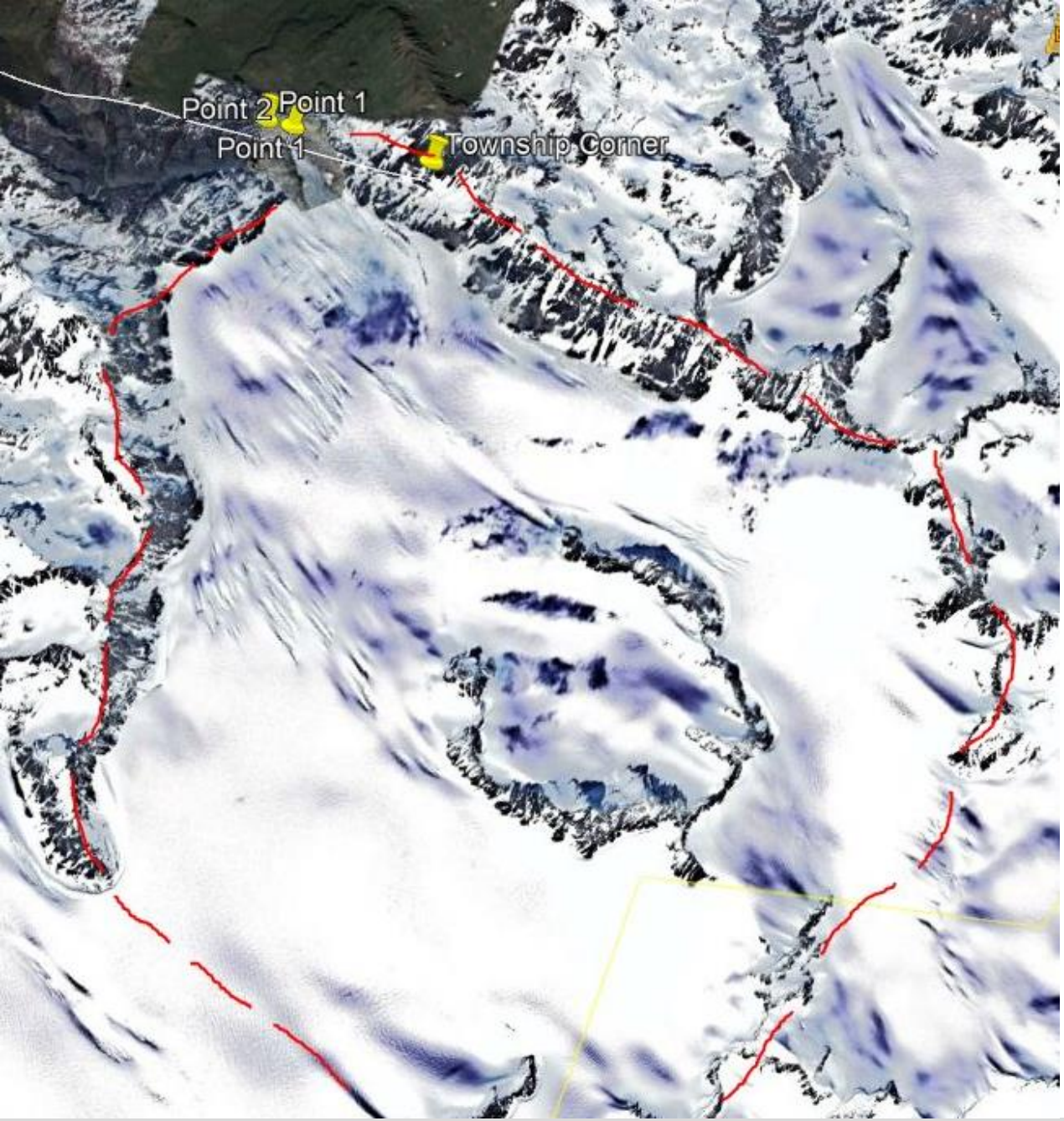
- Located 2 miles southwest of Bradley Lake; serves Railbelt
- Completed in 2020
- Funding by State of Alaska and Railbelt utilities
- Diversion of upper Battle Creek to Bradley Lake by two-mile pipe
- Monitoring of salmon population

Dixon Diversion Project

- AEA is investigating generating energy from the outflow of Dixon Glacier five miles southwest of the Bradley Lake Hydroelectric Project
- The Dixon Diversion Project would be largest renewable energy project in Alaska since the Bradley Lake was completed in 1991

Dixon Diversion Project

- August 2021 Dixon Glacier terminus
- United States Geological Survey gage installed November 2021

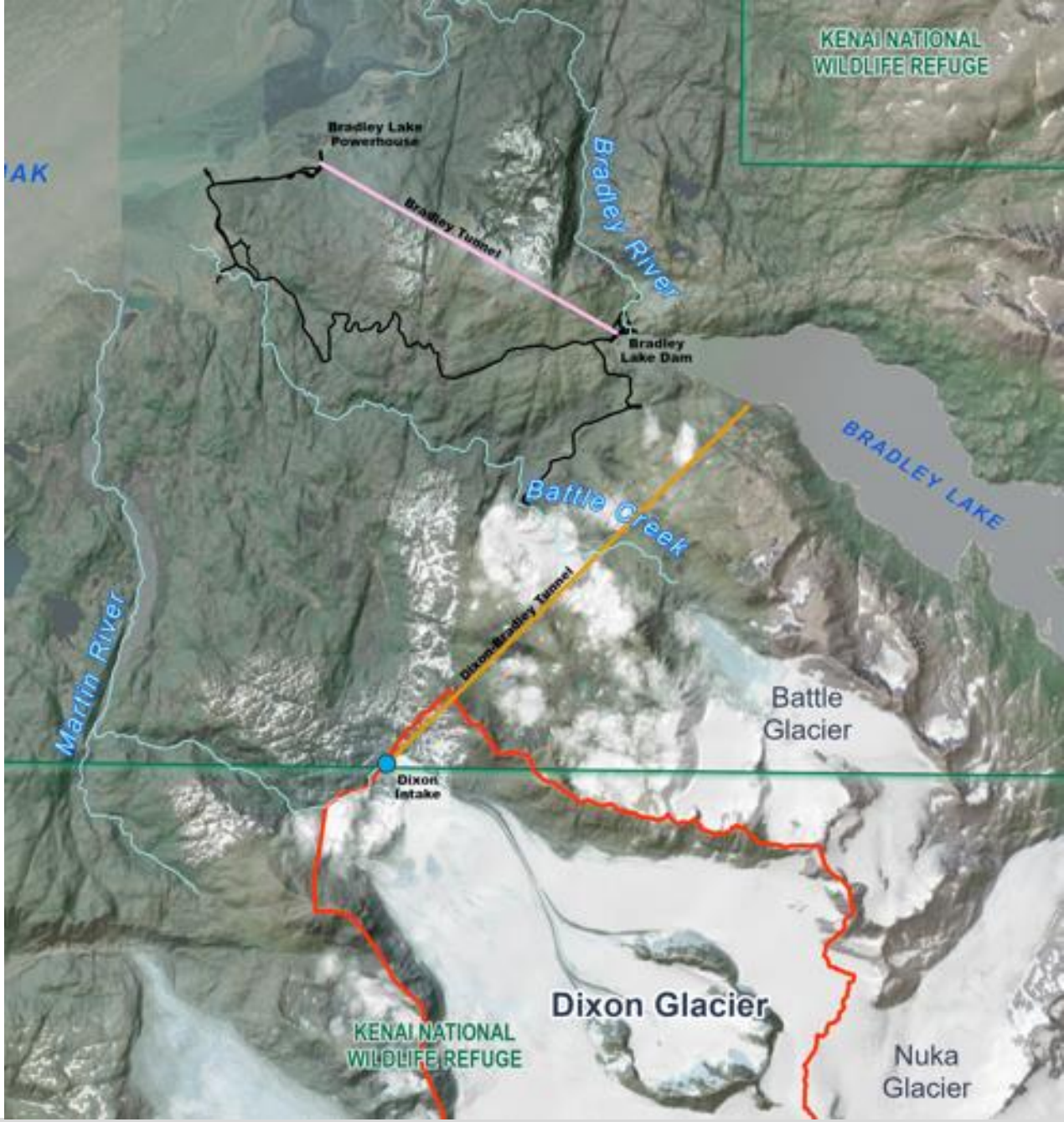


Dixon Diversion Project

- Glacier has a watershed area about 18-20 square miles
- About three times Nuka Glacier area
- Higher elevation so higher precipitation
- Battle Glacier upper right

Bradley Lake Alternative

- Alternative 1 – Tunnel from intake to Bradley Lake
- Water goes through Bradley Lake Powerhouse
- Entire project on State land



Bradley Lake Alternative

- Tunnel with water emerges at lower lake

Bradley Lake Potential Impacts

- If Bradley Lake Alternative portion of water diverted from canyon and lower Martin River to Bradley River basin
- Minimal wildlife impacts
- Canyon not believed to have fish
- In-stream flow for lower Martin River to ensure fish access to Red Lake

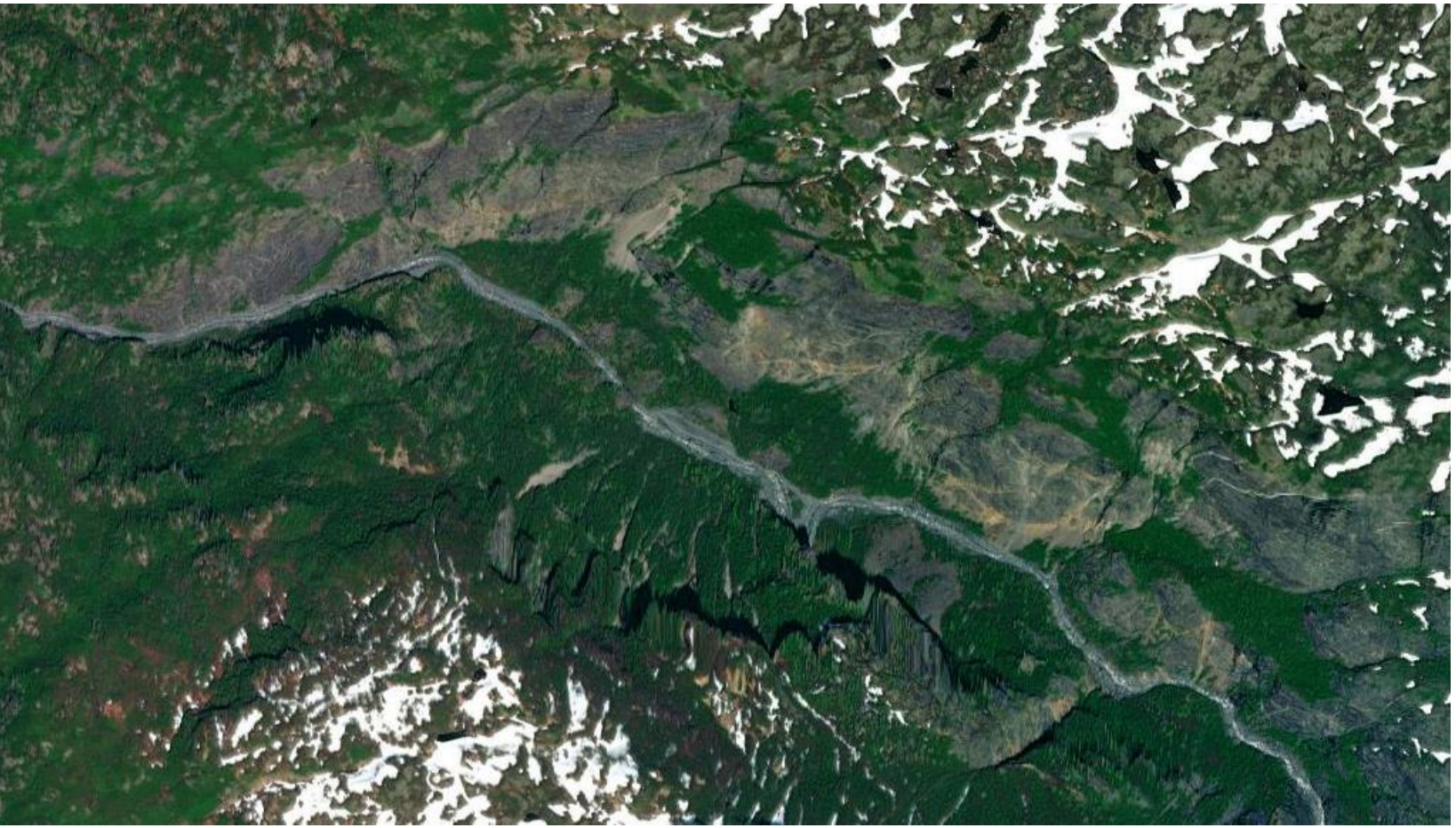
Martin River Alternative

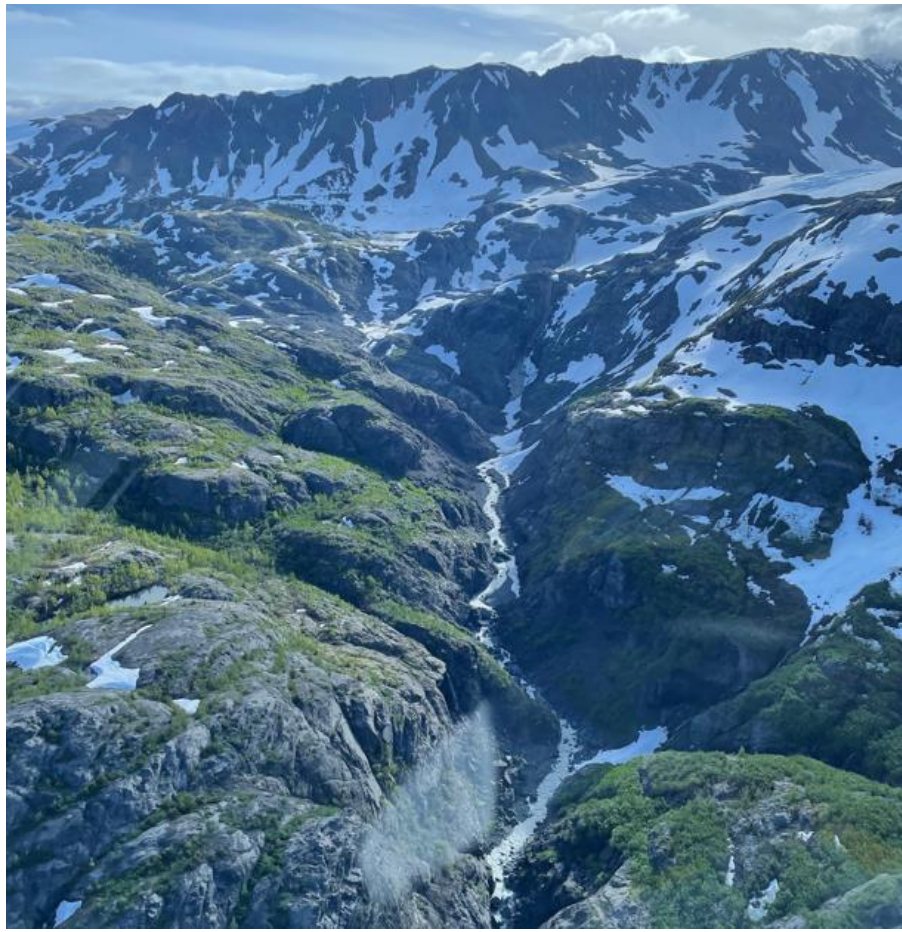
- Alternative 2 – Power tunnel from intake to Martin River
- Power plant at Martin River at assumed upper limit of anadromous fish extent
- Transmission lines to connect with Bradley Lake transmission
- Entire project on State land

Martin River Alternative

- Glacier flow intersects at base of canyon with flow from small lake (left side of photo)
- Anadromous Waters Catalog indicates salmon present in lake and in river below
- Fish not thought to be present in canyon (steep and no habitat)

Martin River Alternative





Canyon (Upper Martin River)

Red Lake

- Just south of canyon exit
- Flow merges with canyon flow
- Contains Sockeye and Coho

Martin River Potential Impacts

- If Martin River Alternative run of river with partial de-watering of steep canyon
- Minimal wildlife impacts
- Canyon not believed to have fish
- Full flow for lower Martin River to ensure fish access to Red Lake

Federal Energy Regulatory Commission (FERC)

WHAT IS FERC?

A federal, independent agency (formally the Federal Power Commission)

WHAT DOES FERC REGULATE?

Electrical transmission, ***hydroelectric dam licensing*** *and safety, natural gas and oil pipelines*

HOW ARE LICENSES AMENDED?

Licensee submits application to FERC for authorization of proposed action; FERC conducts environmental assessment .

HOW DOES FERC IMPACT YOU?

The FERC amendment process provides multiple agency and public involvement opportunities

Three Stages of License Amendment

1. Initial Consultation

2022

Describe existing conditions and proposed action; initiate stakeholder consultation (Initial Consultation Document)

2. Studies and Application

2022-2025

Collect relevant resource data, refine proposed action, and submit license amendment application; ongoing stakeholder consultation

3. FERC Review

2025-2027

Opportunity for stakeholder comment on application; FERC conducts environmental review

Preliminary Dixon Diversion Amendment Process Schedule

Stakeholder Comment Periods

- **August 15, 2022 Initial Consultation Document (ICD) and Study Requests**
- December 2022 Draft Study Plan
- December 2023 Draft Study Report
- January 2025 Draft Amendment Application
- October 2025 Amendment Application
- Summer 2026 FERC EA/EIS

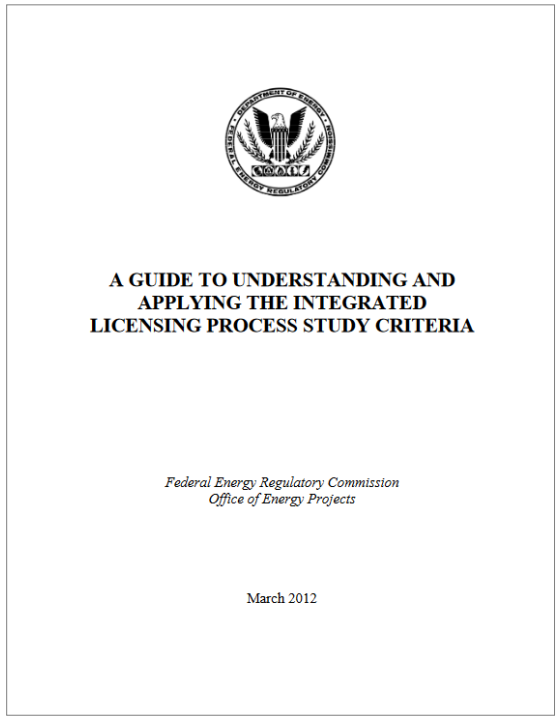
Responsible Party	Activity	Dates
AEA/Stakeholders	Initial Agency Consultation	January - March 2022
AEA	Conduct 2022 Preliminary Studies	Summer 2022
Stage 1		
AEA	File and Distribute ICD, Request for Non-federal Representative, and Newspaper Notice	April 2022
FERC	FERC Issues Notice of Amendment Accepted	May 2022
AEA	Provide Agencies/Public with Notification of Joint Meeting Location and Timing	May 2022
AEA/Stakeholders	Hold Joint Agency/Public Meeting and Site Visit	June 14-15, 2022
FERC/Stakeholders	Comments on ICD/ Proposed Studies Due	August 14, 2022
Stage 2		
AEA	Distribute Study Plans	October 2022
Stakeholders	Comments on Study Plans	December 2022
AEA	Conduct 2023 Season Studies	Spring/Summer 2023
AEA	Issue Study Reports	October 2023
Stakeholders	Comments on Study Report	December 2023
AEA	Conduct 2024 Season Studies (if needed)	Spring/Summer 2024
AEA	Submit Draft Amendment Application	October 2024
FERC/Stakeholders	Comments on Draft Amendment Application	January 2025
Stage 3		
AEA	Submit Final Amendment Application	May 2025
FERC	FERC Notice of Amendment	July 2025
FERC	Comments on Amendment Application	October 2025
FERC	FERC EA/EIS* (subject to change)	July 2026
AEA	FERC Amendment Order (subject to change)	January 2027

Information Gathering

- Limited early studies (2022)
  - Red Lake gage
  - Limited fish surveys
  - Water Quality measures
- Critical early studies/information?
- Resources?

Study Requests

FERC study request criteria (18 CFR § 16.8(b)(5))



A GUIDE TO UNDERSTANDING AND APPLYING THE INTEGRATED LICENSING PROCESS STUDY CRITERIA

Federal Energy Regulatory Commission
Office of Energy Projects

March 2012

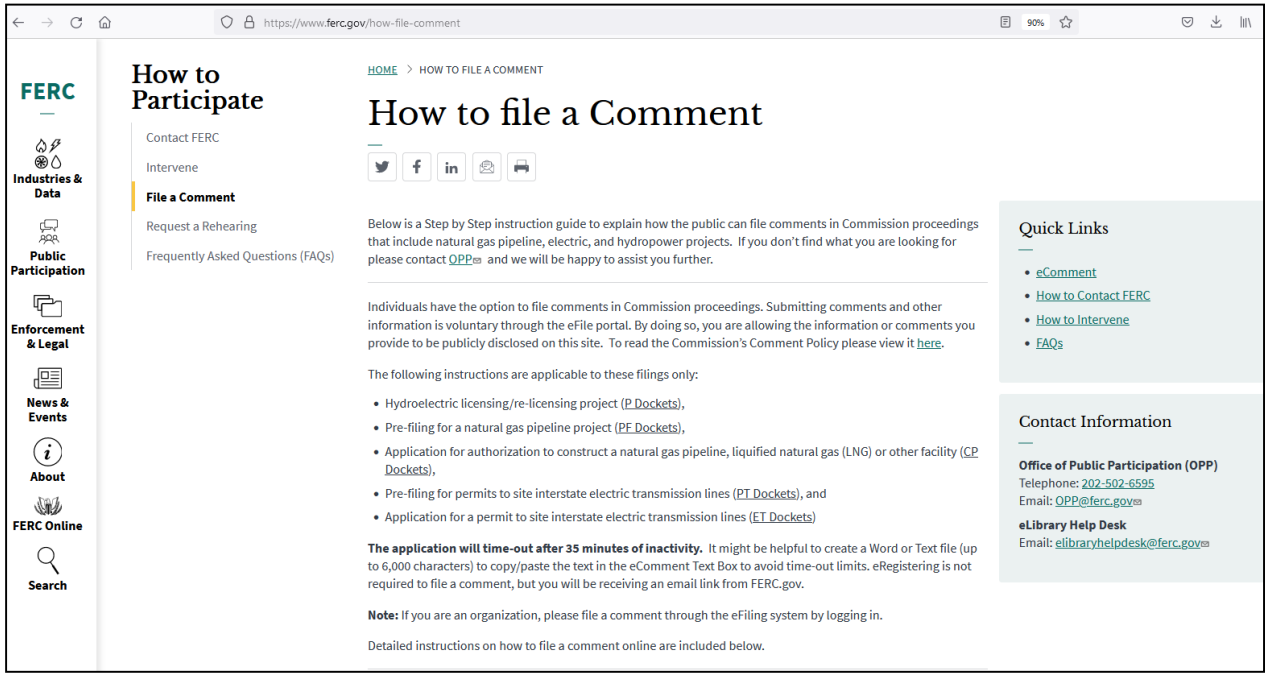
https://www.ferc.gov/sites/default/files/2020-04/AGuidetoUnderstandingandApplyingtheIntegratedLicensingProcessStudyCriteria.pdf

- Study goals and objectives
- Relevant resource management goals
- Relevant public interest considerations
- Existing information
- Nexus between Project operations and effects (direct, indirect, and/or cumulative. How study results would inform license requirements.
- How study methodology is consistent with generally accepted practice in the scientific community and/or considers relevant tribal values and knowledge.
- Level of effort and cost, and why any proposed alternative studies would not be sufficient

FERC Stakeholder Involvement

- FERC's website (www.ferc.gov) hosts a public database (eLibrary) with all FERC issuances and all submissions from other parties
- Dixon Diversion project is amendment to Bradley Lake Hydroelectric Project (P-8221)
- Project documents are also available on AEA webpage at:

https://www.ferc.gov/how-file-comment



https://www.akenergyauthority.org/What-We-Do/Railbelt-Energy/Bradley-Lake-Hydroelectric-Project/Dixon-Diversion-Project

AEA provides **energy solutions** to meet the unique needs and of Alaska's rural and urban communities.

ALASKA ENERGY AUTHORITY

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