ALASKA ENERGY AUTHORITY

DIXON OVERVIEW

Bryan Carey, P.E.
Owned Assets/
Hydro Group Manager

Multi-Agency Partners
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Dixon Diversion Project

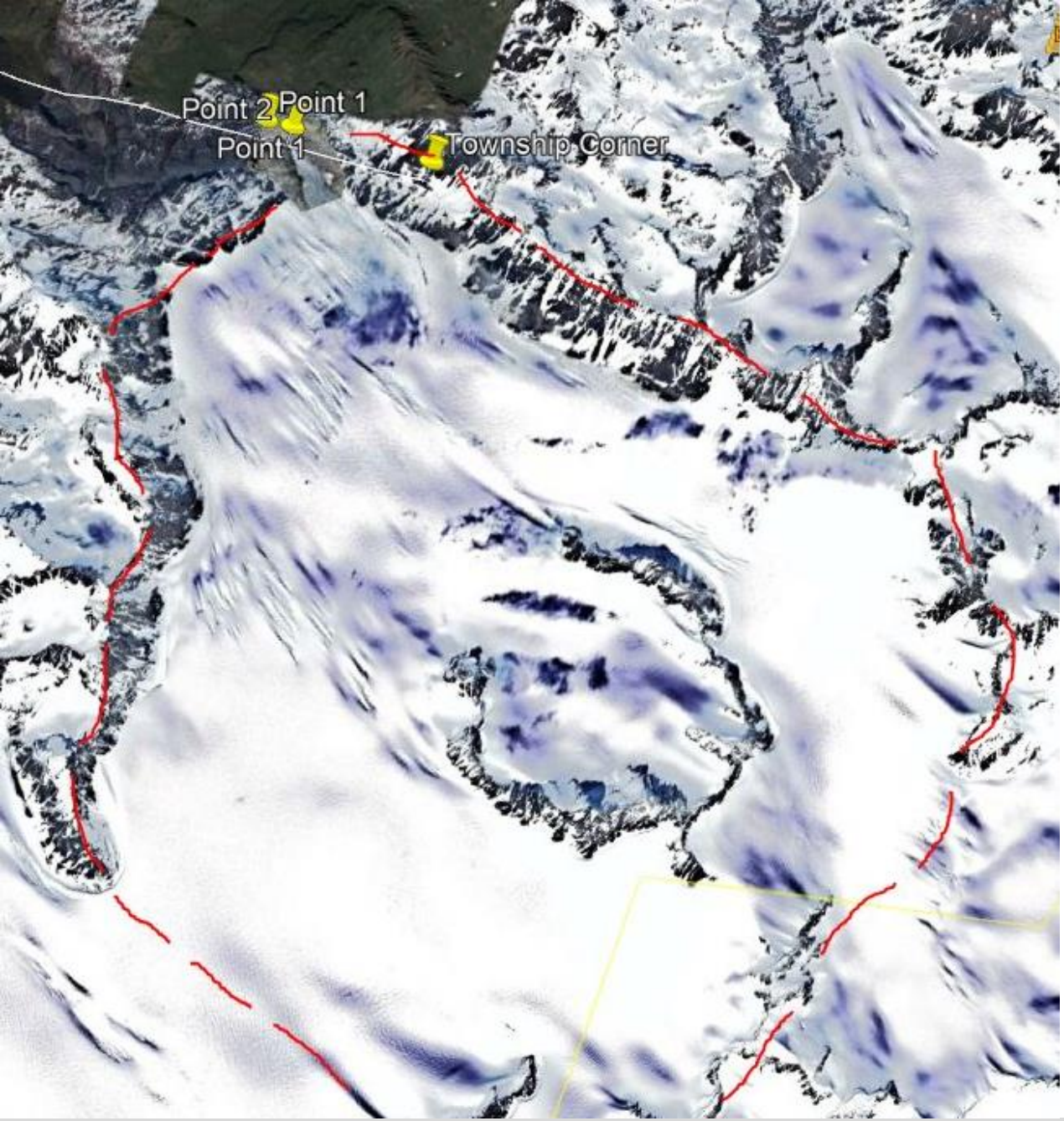
- AEA is investigating generating energy from the outflow of Dixon Glacier five miles southwest of the Bradley Lake Hydroelectric Project
- The Dixon Diversion Project would be largest renewable energy project in Alaska since Bradley Lake was completed in 1991

Dixon Diversion Project

- Dixon Glacier has retreated (melted) to below the red line
- State land above the red line
- Kenai National Wildlife Refuge land below the red line

Dixon Diversion Project

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

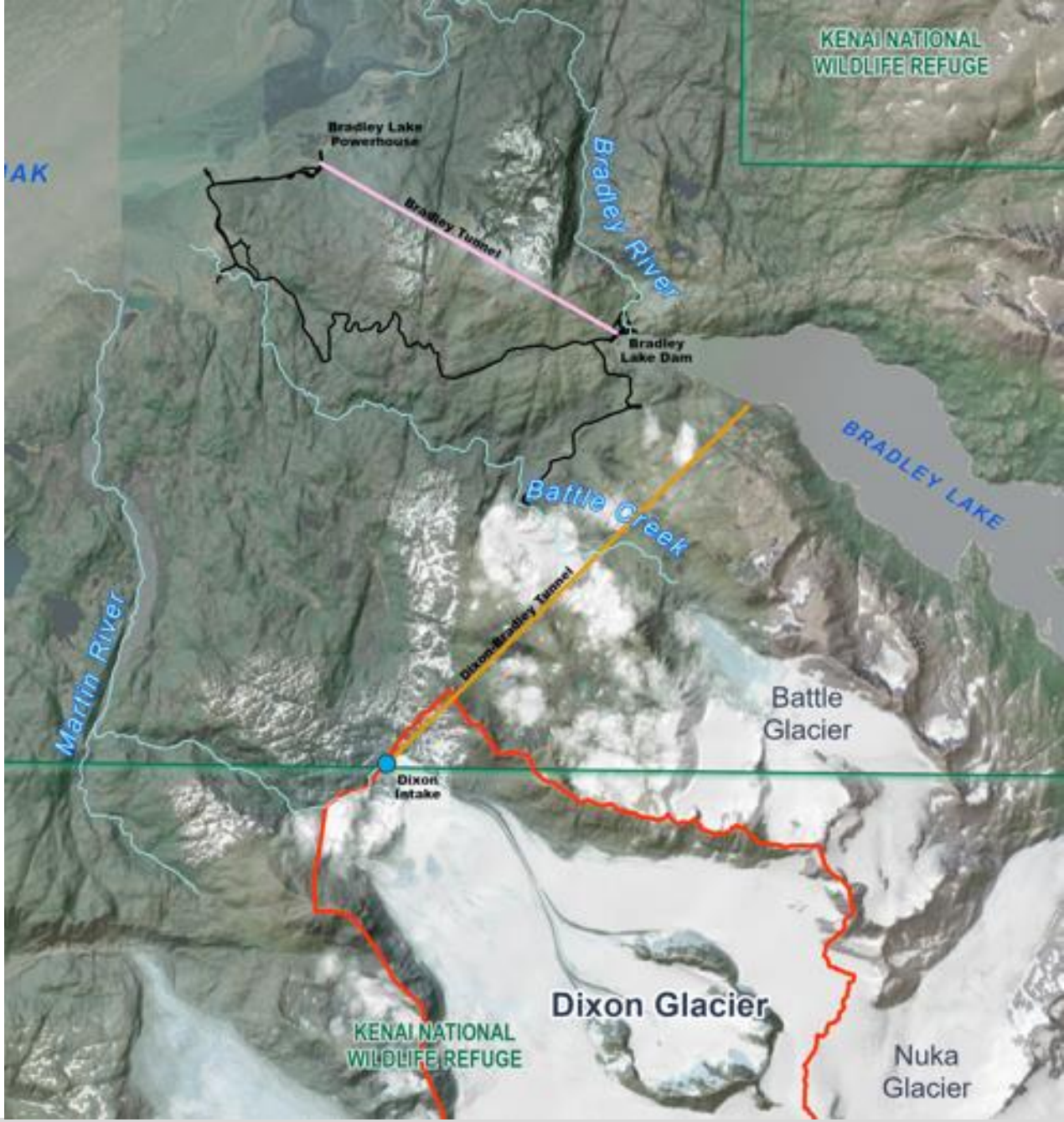


Dixon Diversion Project

- 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

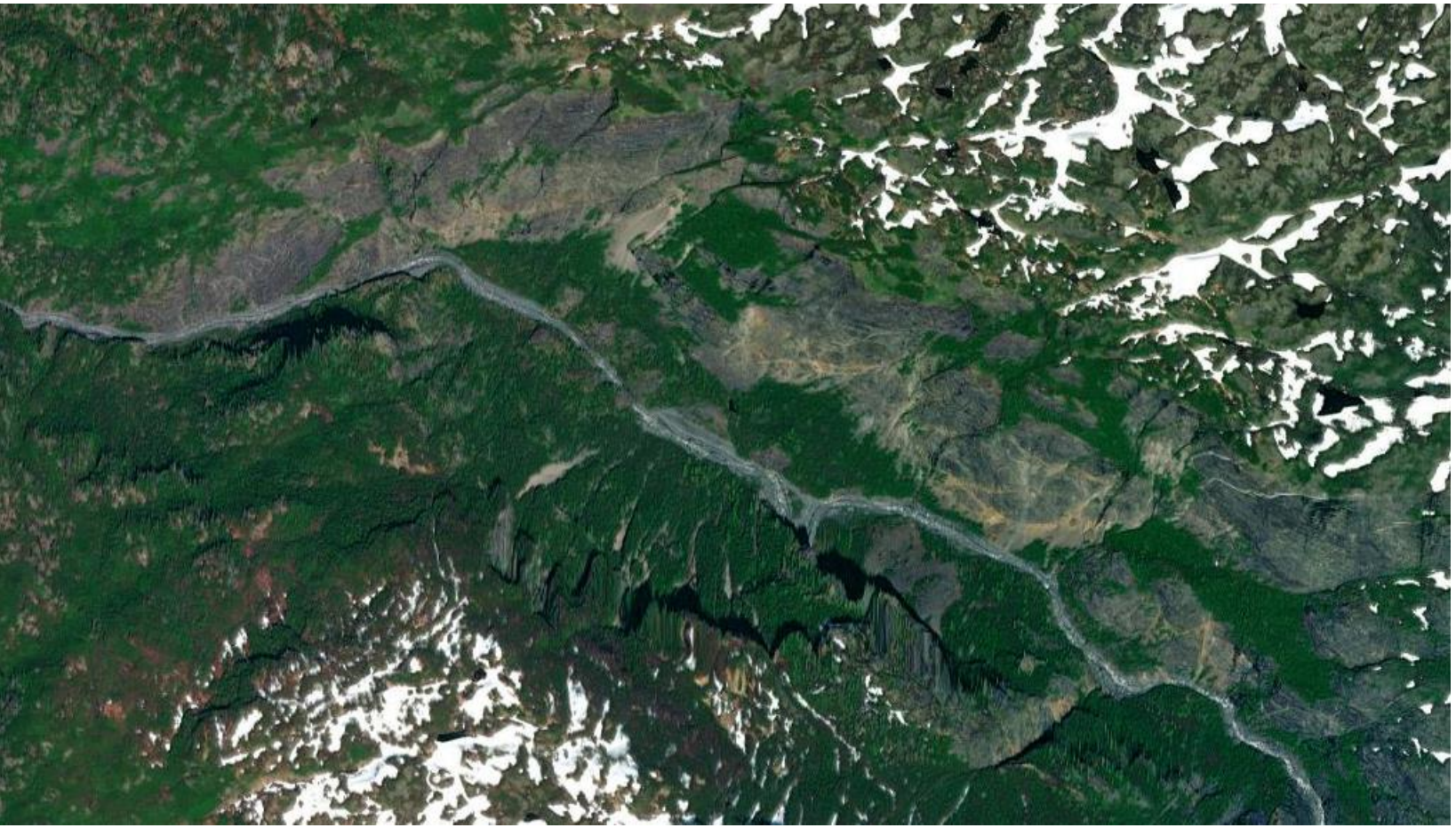
Martin River Alternative

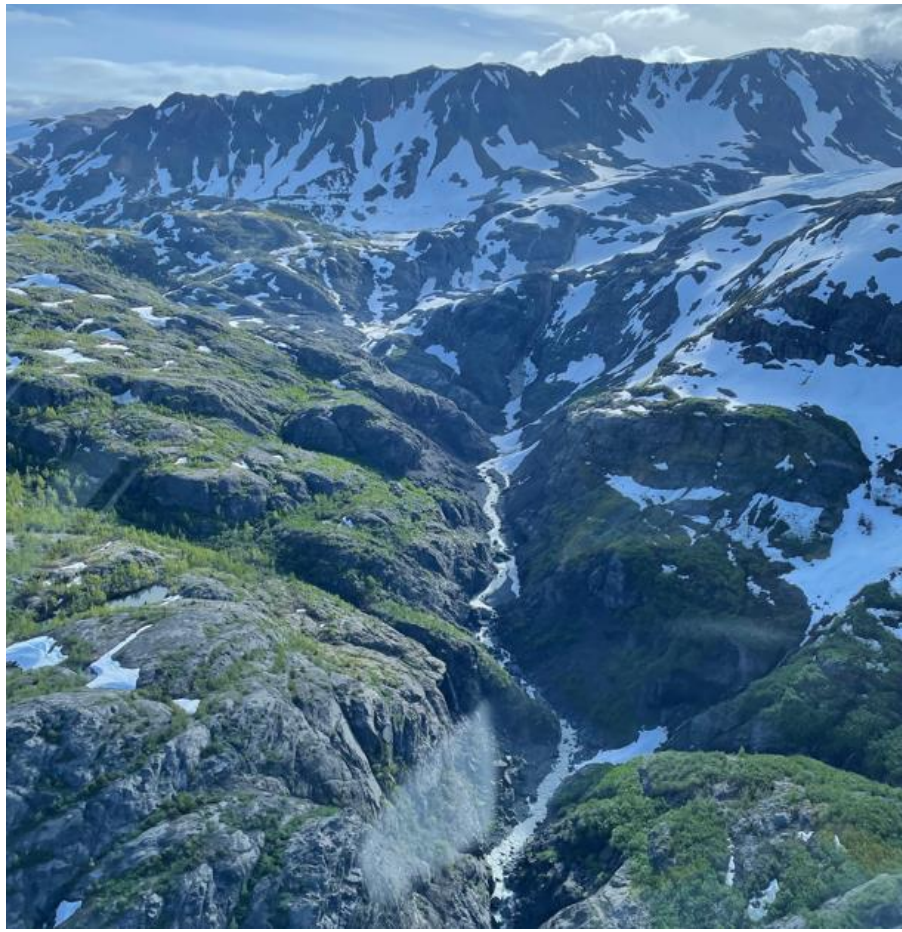
- Alternative 2 – Power tunnel from intake to Martin River
- Power plant at Martin River at assumed upper limit of anadromous fish extent
- Transmission lines to connect with Bradley Lake transmission
- Entire project on State land

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 exist
- Flow merges with canyon flow
- Contains Sockeye and Coho

Hydrology

- Late 2021 USGS water gage installed
- Comparison of similar areas yields about 150,000 — 200,000 ac-ft of flow from Dixon Glacier

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
- Minimum In-stream flow for lower Martin River to ensure fish access to Red Lake

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

Information Gathering

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

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

ALASKA ENERGY AUTHORITY

Alaska Energy Authority

813 W Northern Lights Blvd.
Anchorage, AK 99503

Main: (907) 771-3000
Fax: (907) 771-3044

akenergyauthority.org

@alaskaenergyauthority

@alaskaenergyauthority