

Mayor

David Allison

Council Members

Tom Bailer

Cathy Sherman

Kasey Kinsman

Wendy Ranney

Dave Zastrow

Kristin Carpenter

Ken Jones

City Manager

Samantha Greenwood

City Clerk

Susan Bourgeois

Deputy Clerk

Tina Hammer

**City Council Work Session
April 25, 2024 @ 6:00 pm
Cordova Center Community Rooms
Agenda**

A. Call to order

B. Roll call

Mayor David Allison, Council members Tom Bailer, Cathy Sherman, Kasey Kinsman, Wendy Ranney, Dave Zastrow, Kristin Carpenter, and Ken Jones

C. Work Session topics

1. Eyak Lake Weir..... (page 1)

D. Adjournment

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COPPER RIVER WATERSHED PROJECT

≈Upriver and down, salmon are common ground≈

April 25, 2024

Cordova City Council Members
City of Cordova
P.O. Box 1210
Cordova, AK 99574

Re: Eyak Lake Ownership Work Session

The following topics are proposed for the Eyak Lake Weir ownership discussion:

- Introduction to project and participants (Kate Morse, CRWP)
- Overview of new structure and the approach to make it “low to no maintenance” (Euan Angus-MacCleod, DOWL)
- Update on State conversations regarding ownership (Jeff Stutzke, DOT & PF)
- City update (Sam Greenwood)
 - legal counsel
 - insurance
- Other partner updates
- Next steps

Thanks for the opportunity to further discuss this.

Kate Morse, Program Director
907-253-4735
kate@copperriver.org.

Project materials available here:





COPPER RIVER WATERSHED PROJECT

≈Upriver and down, salmon are common ground≈

March 24, 2024

RE: Eyak Lake Weir Ownership Assessment

To Whom It May Concern:

The Copper River Watershed Project is facilitating a diverse partnership of over 16 organizations in order to address the failing Eyak Lake outlet structure. While partners have expressed an intent to identify a pathway forward for long-term ownership and maintenance of the new structure, we are unable to find traction on identifying an owner. The following is a summary of agencies with the potential to play a role in ownership, as well as a memo and links to appendices on the history of the project and references to similar ownership questions from the late 1970s. Background materials on the project, design and implementation timeline, and current design plans are available on CRWP's [website linked here](#).

As outlined in the attached memo, the weir was installed in 1972 in a contract issued by the State of Alaska Department of Public Works, Division of Water & Harbors, a department that no longer exists. The State is the initial responsible party identified given it was a state agency who originally oversaw its construction, and the following is a summary of various agencies connections to the project and responses to date:

Alaska Department of Fish & Game (ADFG): ADFG was a proponent of the initial weir in order to protect near-shore sockeye spawning habitat, and has participated in design reviews to date with an interest in improving connectivity between Eyak Lake and River for the benefit of all life stages of salmon, trout, and other fish species. ADFG staff have been told they cannot participate in any further efforts to determine ownership and they are not involved in ownership of structures like this. However, there has been an interest expressed by ADFG in using the weir for long-term monitoring of the high-value fisheries supported by Eyak Lake, and they do have a history of managing weirs used for fisheries monitoring.

Alaska Department of Natural Resources (DNR): It is believed that the actual structure is on DNR lands, if they claim the bottom of navigable waterways. The memo lines out DNR's role prior to 2012 when the weir was considered a dam, and it seems like they could be held responsible as the underlying landowner on an abandoned structure, if the transition of the state agency to a new department qualifies as an abandonment of this structure. Initial discussions with DNR have expressed a strong likelihood they will NOT take on ownership as they don't own infrastructure like this.

Alaska Department of Transportation & Public Facilities (DOT&PF): It has been stated by DOT&PF partners in past weir planning meetings that DOT&PF has a precedence of taking on maintenance of projects originating with Division of Water & Harbors. However, Eyak Lake weir is outside the scope of DOT&PF because it is not transportation infrastructure. Approximately 20% of the structure is in DOT&PF's Right of Way, and a key highway bridge that they maintain is just downstream of the outlet structure, so it's possible that monitoring activities for the bridge and weir could occur simultaneously.

Additionally, there is a complicated history of landownership adjacent to the weir opposite of the Copper River Highway. Our engineer's current assessment is that The Eyak Corporation owns Tract A in plat 2015-1 (attached) and the surrounding lands are U.S. Forest Service.

The Eyak Corporation: The Eyak Corporation has very limited staff and equipment capacity in Cordova and is unlikely to take on ownership of the weir. As neighboring landowners, they are agreeable to access for maintenance as needed.

Board of Directors

Matt Piché, President, Cordova
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U.S. Forest Service / Chugach National Forest: The U.S. Forest Service is helping to design and oversee restoration monitoring to ensure the project improves fish passage as intended. They have limited infrastructure for maintaining a structure like this and are unlikely to take on an ownership role.

We seek assistance in evaluating these claims and identifying a responsible party for the structure today and moving forward. So far key questions that have been raised include:

- Is the weir an abandoned structure as described in Section 14.2 of the Alaska Dam Safety Program?
- If we were to do nothing because of no ownership, and the weir continues to fail and lower lake levels, who is liable for the changes to property values? Loss of fish spawning and rearing habitat? Loss of navigability?
- Are there examples of other ownership agreements that designate joint ownership and funding for maintenance between multiple agencies? If a main limitation is lack of funding, we do have agency partners like USFWS, NOAA, and USFS who can assist with funding for maintenance activities but who are not ideally suited to take ownership.

Thanks for your assistance evaluating these materials.

Sincerely,

Kate Morse, Program Director

Project materials available here:



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TO: Eyak Weir Stakeholders
THROUGH: Kate Morse, Program Director, Copper River Watershed Project (CRWP)
FROM: Euan-Angus MacLeod, PE, CFM
DATE: 03/11/2024
SUBJECT: Eyak Weir Replacement

Project Description and Need

The Eyak Lake weir is located approximately at milepost 5.5 on the Copper River Highway, east of the City of Cordova, AK. The weir is upstream of the Copper River Highway bridge over the Eyak River (Figure 1). The weir was constructed in 1972 by the State of Alaska Department of Public Works, Division of Water and Harbors to reestablish the water surface elevation in Eyak Lake after the 1964 'Good Friday' earthquake. The weir is composed of two linear sections of sheet pile, forming a wide 'V' shape in the center of Eyak Lake outlet. Emergency repair work to install riprap along the downstream face of the sheet piling was conducted in 1978 by the Alaska Department of Transportation and Public Facilities (ADOT&PF), Division of Harbor Design & Construction. The weir has deteriorated significantly since its initial construction in 1972. The degradation observed includes rotation of sheet pile, splitting of sheet pile joints, leaking, and corrosion/spalling of material (Appendix A). The damaged weir poses a hazard to recreational users and impedes upstream passage of juvenile fish at most flows.

Before the project can proceed to implementation, an owner/permittee must be established. There is currently no consensus among stakeholders as to the likely owner who will be responsible for maintenance of the project in the future. This memo outlines the proposed project and the anticipated (minimal) maintenance burden with the intent of identifying and informing the parties who will assume ownership over the project.

The No Action Alternative

As indicated in the Alaska Department of Natural Resources (ADNR) Alaska Dam Safety Program 2012 Deregulation Report (Appendix B), the weir is likely to experience a "*progressive failure of discrete segments of the structure,*" and the risk to life and property downstream is low. It is anticipated that the progressive failure of the weir will lower the water elevation of Eyak Lake. This would limit float plane and boat access, negatively impact property values and fish habitat, remove a secondary water source for the City of Cordova, and expose the weir structure creating a barrier to fish passage and navigability. As the weir continues to deteriorate, near-shore sockeye salmon spawning habitat will be negatively impacted by lowering lake levels and movement of fish between Eyak River and Eyak Lake will be further limited as the weir becomes a barrier at most flows. The potential cost related to loss of productivity in Eyak Lake habitat that supports Sockeye and Coho salmon is estimated at \$1.7-\$2.9 million ex-vessel value.

The State and City will likely receive pressure to conduct costly, emergency repairs if the anticipated failure begins to lower the lake level and impact fish passage.

Proposed Project and Anticipated Maintenance Burden

The effort to replace the current weir and address the issues outlined above has been facilitated by CRWP, a local nonprofit, with participation of upwards of 16 public, private and community partners. Representatives from local, state, federal, and Tribal organizations have been working cooperatively to seek out funding and provide input on the project. The proposed

replacement weir is designed to closely match the existing range of water elevations in Eyak Lake and create a 'nature-like fishway; a gradually sloping, open channel with a streambed consisting of gravel and boulders immediately downstream of the weir.

The proposed replacement structure is a sheet pile weir stiffened with a reinforced concrete crest and designed to the most recent seismic and structural codes. The weir structure is protected upstream by a riprap ramp with material placed downstream designed to mimic a natural channel that provides fish passage and improves recreational access for boating and sport fishing.

The project has been designed to reduce the maintenance burden to the maximum extent practicable. Design features enabling this are riprap upstream of the weir structure to mitigate impacts from boaters or ice, sheet pile driven to a stable soil layer, and grade control structures to keep the constructed channel in place. The 'nature-like fishway' channel material is designed to be stable in the highest calculated velocities modeled to occur at the weir. Additional information can be obtained in the design documentation and is available on request.

Based on the structure's geometry and the low hazard associated with a structural failure, the proposed replacement weir will likely maintain its current status and *not* be classified as a jurisdictional dam by Alaska Dam Safety Program. The anticipated maintenance burden is low, with an inspection recommended after an extraordinary event, such as an earthquake. As with all natural channels, there is some adjustment as the river finds equilibrium. Once the channel has adjusted to the flow conditions, the anticipated maintenance associated with the downstream channel is low and only associated with fish passage and habitat features.

Current Status and Ownership

After completing hydrologic and geotechnical studies, DOWL has worked with CRWP and project stakeholders to progress the proposed design to 65% completion. The partnership (federal and state agencies, Tribal organizations, City government, and local NGOs) have secured over \$11 million dollars to address the infrastructure, however a lack of clear ownership is stalling progress on this project.

According to the State of Alaska policy on navigability, AS 38.05.125, waters must be navigable in their 'natural and ordinary condition'. Despite the weir being a 'substantial man-made improvement' to provide sufficient water surface elevation to navigate the waterbody, it is assumed that the weir that intersects the Eyak River (GNIS ID: 01421825) and Eyak Lake (GNIS ID 01421824) is determined to be a navigable structure by ADNR.

The ADNR Dam Safety Program Periodic Safety Inspection Report No. 1 for Eyak Lake Dam (1985 – Appendix C) lists the owner of the structure as ADOT&PF. However, if the weir is considered abandoned by the State of Alaska Department of Public Works, Division of Water and Harbors or ADOTPF, Section 14.2 of the Alaska Dam Safety Program guide states, "*ADNR Dam Safety assumes that a dam that is abandoned without approval is the property of the underlying landowner*". As the weir maintains the Eyak Lake Ordinary High Water (OHW) mark, it is assumed that the weir falls under state ownership pursuant to AS 38.05.126. Memos and reports available from 1970 to present are attached in Appendices and may be helpful in determining ownership of the current weir structure (Appendix D).

Appendices B - D available for download: <https://copperiver.org/programs/fish-habitat-restoration/restoration/eyak-lake/eyak-lake-weir/>.



APPENDIX A: EYAK WEIR: CURRENT CONDITION PHOTO LOG

PROJECT NAME: Eyak Weir Replacement

PROJECT NUMBER: 1136.63341.04 APPENDIX A, Photo Log DATE: 3/11/2024

NOTES: Photos documenting current condition of Eyak Weir to accompany Eyak Weir Replacement memo.



FIGURE: Location of Eyak Weir (Yellow Pin)



FIGURE: Aerial Image of the Existing Eyak Weir



FIGURE: Crest of Eyak Weir



FIGURE: Material Degradation and Leaking



FIGURE: Sheet Pile Joint Burst



FIGURE: Leaking of Sheet Pile Joints



FIGURE: Sheet Pile Failure Lowering Crest of Weir



FIGURE: Failed Section of Crest