

EVOSTC FY 22-26 GENERAL RESTORATION and HABITAT PROJECT PROPOSAL FORM

Proposals requesting FY22 - 26 funding are due to shiwai.wang@alaska.gov and linda.kilbourne@alaska.gov by March 29, 2021. Please note that the information in your proposal and budget form will be used for funding review. Please refer to the FY22-26 General Restoration Invitation for Proposals, posted on the EVOSTC web site (evostc.state.ak.us) for specific proposal requirements. The information requested in this form is in addition to the information requested by the General Restoration Invitation. We may make inquiries regarding the project and proposer(s), including consulting with subject matter experts, government agencies or other parties. Project proposals may be submitted in response to only one current Invitation (FY 22-31 or FY 22-26). A project that is submitted under both Invitations may be disqualified from consideration. Please indicate below if your proposal contains confidential information.

Does this proposal contain confidential information? Yes No

Segregate any confidential information on separate pages of the proposal, with each page marked "CONFIDENTIAL".

Project Number and Title

22220612 Eyak Lake Weir Restoration

Primary Proposer(s)/Project Manager and Affiliation(s)

Kate Morse, Project Manager, Copper River Watershed Project

Steve Namitz, District Ranger, US Forest Service, Chugach National Forest

Jeff Stutzke, Alaska Department of Transportation

Date Proposal Submitted

March 29, 2021 (revised August 13, 2021)

Brief Project Description (maximum 300 words)

The Project Description should provide a brief and concise summary of the proposal, its budgeted costs and its benefits for oil spill recovery and restoration. The Project Description should provide sufficient information for a summary review as this is the text that will be reproduced in the public work plan and may be relied upon by staff, the EVOSTC Public Advisory Committee and other reviewers.

Eyak Lake is within the Exxon Valdez Oil Spill (EVOS) affected geographic area of concern, situated in the north east corner of the EVOS Area Boundary (Figure 1). It is recognized as ecologically significant by the Alaska Coastal Policy Council as an "Area Meriting Special Attention." The streambanks at the project site and about 17 miles of upstream lake shore are EVOS acquired lands managed by the Forest Service. The habitat of Eyak Lake and its watershed are used by injured resources that include, but are not limited to, Sockeye Salmon, Cutthroat Trout, Dolly Varden, and Pink Salmon. A fifth species, Coho Salmon also uses the habitat offered by the Eyak watershed and all five of these species are targeted by subsistence, commercial and/or recreational harvesters.

Resultant of the 1964 Good Friday earthquake, the surrounding area uplifted by approximately six feet and the lake-level subsided. In 1972 a sheet pile weir was installed at the outlet of Eyak Lake to re-establish the water surface to pre-earthquake levels. The weir is located at the head of the Eyak River, just upstream of the Copper River Highway (Figure 2 and 3). The weir impedes upstream passage of juvenile salmon and other aquatic organisms and has structural concerns with the potential for further adverse effects on the ecosystem if not addressed.

Since the weir was installed, damage to the integrity of the structure has occurred from environmental elements including freeze-thaw events. Additionally, there have been advances in understanding the importance of restoring ecological connectivity and aquatic restoration practices have evolved since the weir was installed. This proposal seeks to restore upstream aquatic organism passage into the lake, and to preserve and improve the productivity of the salmon and Cutthroat Trout spawning and rearing that the Eyak Lake watershed supports.

EVOSTC Funding Requested* (round to the nearest hundred, including 9% GA, where applicable*):

FY22	FY23	FY24	FY25	FY26	FY22-26 Total
\$768,889	\$4,718,016	\$113,745	\$106,848		\$5,707,498

** GA is a General Administration cost that applies to all EVOSTC projects except for purchase prices of habitat parcels. Please indicate if funds will be requested to be released on other than an annual basis. If the amount requested here does not match the amount on the budget form, the request on the budget form will be considered to be correct.*

Non-EVOSTC Funds to be used for this project, please include source and amount per source:

FY22	FY23	FY24	FY25	FY26	FY22-26 Total
\$8,700.00 USFWS In-kind	\$8,700.00 USFWS In-kind	\$8,700.00 USFWS In-kind			\$26,100
\$1,920.00 Eyak Corporation In-kind	\$2,240.00 Eyak Corporation In-kind	\$640.00 Eyak Corporation In-kind			\$4,800
\$5,760 City of Cordova in-kind	\$2,240 City of Cordova in-kind	\$640 City of Cordova in-kind			\$8,640
\$3,840 Native Village of Eyak in-kind	\$2,240 Native Village of Eyak in-kind	\$640 Native Village of Eyak in-kind			\$6,720
\$960 PWSSC in-kind	\$960 PWSSC in-kind	\$960 PWSSC in-kind			\$2,880

1. EXECUTIVE SUMMARY (maximum ~1500 words, not including figures and tables)

Please provide a summary of the project including key objectives and overall goals. Describe the background and history of the problem. Include which injured resources and services the project supports and describe how those resources and services will benefit from this project.

The Copper River Watershed Project (CRWP) and their project partners seek funding to improve fish and other aquatic organism passage in to Eyak Lake basin and 25.92 miles of upstream habitat, including 17 miles of EVOS lands managed by the U.S. Forest Service (USFS). The project elements in this proposal build from a recently awarded National Fish and Wildlife Foundation grant and investments from USFS and Alaska Department of Transportation & Public Facilities (ADOT&PF) that will begin the work. This project seeks to finalize designs and implement the restoration of fish passage, maximize habitat available to subsistence resources, and improve damaged resources in the Eyak Lake basin.

Eyak Lake lies within the developed community of Cordova. The Eyak watershed provides habitat for ten fish species, five of which provide both subsistence, commercial, and recreational revenue to the community. Of those five species, four were deemed injured resources by the EVOS Trustee Council (EVOSTC 2014). The four species include Sockeye Salmon, Pink Salmon, Cutthroat Trout and Dolly Varden. The fifth species is Coho Salmon. Alaska Department of Fish & Game (ADF&G) biologists have estimated Eyak Lake provides an annual ex-

vessel value for commercial harvests of Sockeye and Coho Salmon between \$1,742,050 to \$2,917,210 (J. Botz, personal communication, based on escapement peak counts and commercial harvest data, 2010-2020) making Eyak Lake a multi- million-dollar lake from commercial revenue alone.

The 1964 Good Friday earthquake uplifted the lake and surrounding area by 6-8 feet (USFS 2002). As a result of the uplifting, the lake was drained leaving behind mudflats (Crawford 2016). In 1972, a sheet pile weir was installed and nearly restored the lake to its pre-earthquake size of 2400-acres. In 1981 the Alaska Coastal Policy Council recommended Eyak Lake for designation as an Area Meriting Special Attention. Under this designation, a plan was developed to prioritize the ecological health of Eyak Lake including water quality, fisheries production, wildlife habitat values, and the use of the lake and associated infrastructure by residents and recreational users.

The weir is located at the outlet of Eyak Lake and head of Eyak River, just upstream from the Copper River Highway (Figures 2 and 3). Eyak Lake is one of five primary sockeye spawning lakes on the Copper River Delta. A 1982 report estimated there was about 15 acres of sockeye spawning habitat along the shoreline of the lake (Crawford 2016). Approximately 17 miles of upstream lakeshore at and above the project site are EVOS acquired lands managed by the Forest Service. Anadromous Sockeye Salmon, Dolly Varden, and Cutthroat Trout were specifically noted to use the lake and its upstream tributaries for spawning, rearing, and overwintering.

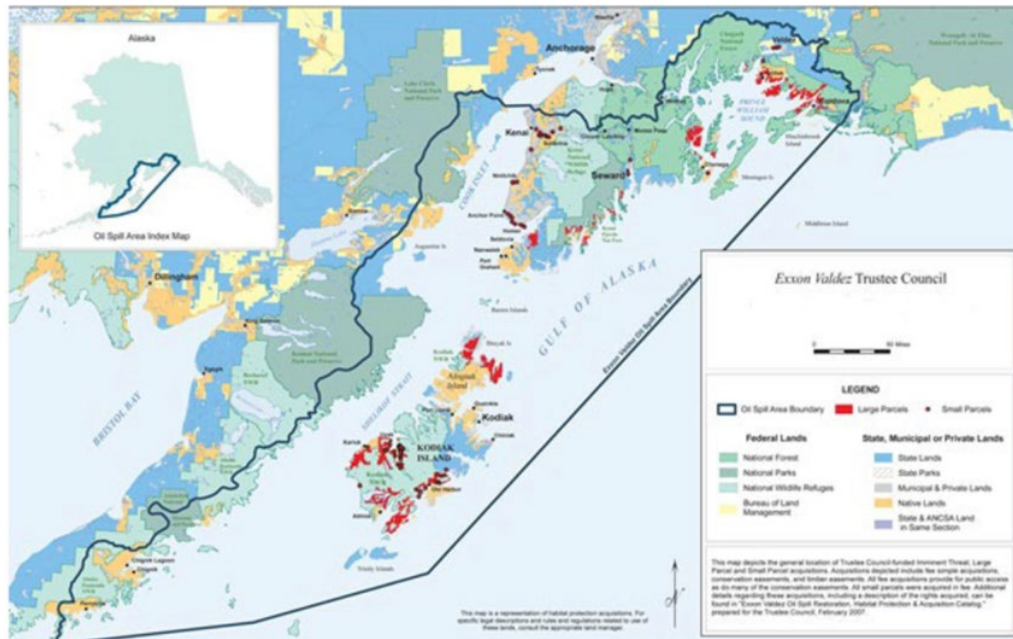


Figure 1. The Eyak Lake lies in the northeastern portion of the geographic boundary of the EVOTS affected area.

Upstream juvenile migration is deemed unpassable when there is a greater than 4-inch water surface drop. Depending on the lake level, the outlet can have a water surface drop of up to 2.5 feet, inhibiting upstream fish passage. There is a section of the weir called the boat slot, which is currently critical for adult salmon passage over the weir. Recent events have altered the timbers that frame the boat slot and there is concern that adult fish passage could be compromised (USFS Assessment 2020). A summary of concerns regarding the structure include:

- The weir is deteriorating with age. Floods, ice, and debris have damaged the structure, lowering its crest elevation. Base water levels in the lake have fallen and are anticipated to continue to fall, reducing the volume of the lake and diminishing habitat quality and quantity for salmon.

- The design of the structure is insufficient for effective upstream passage of juvenile salmon and other weak swimming fishes, reducing connectivity between Eyak Lake and nearby spawning and rearing habitat in Eyak River, Ibeck Creek, and Scott River.
- The structure was originally designed to provide passage to small motorized vessels. In its current state, the weir is largely impassable, reducing recreational opportunities.
- A platform on the weir that is a popular perch for anglers is in disrepair and is unsafe.
- Weir failure would be detrimental to the loss of fish habitat in terms of species vitality and revenue.

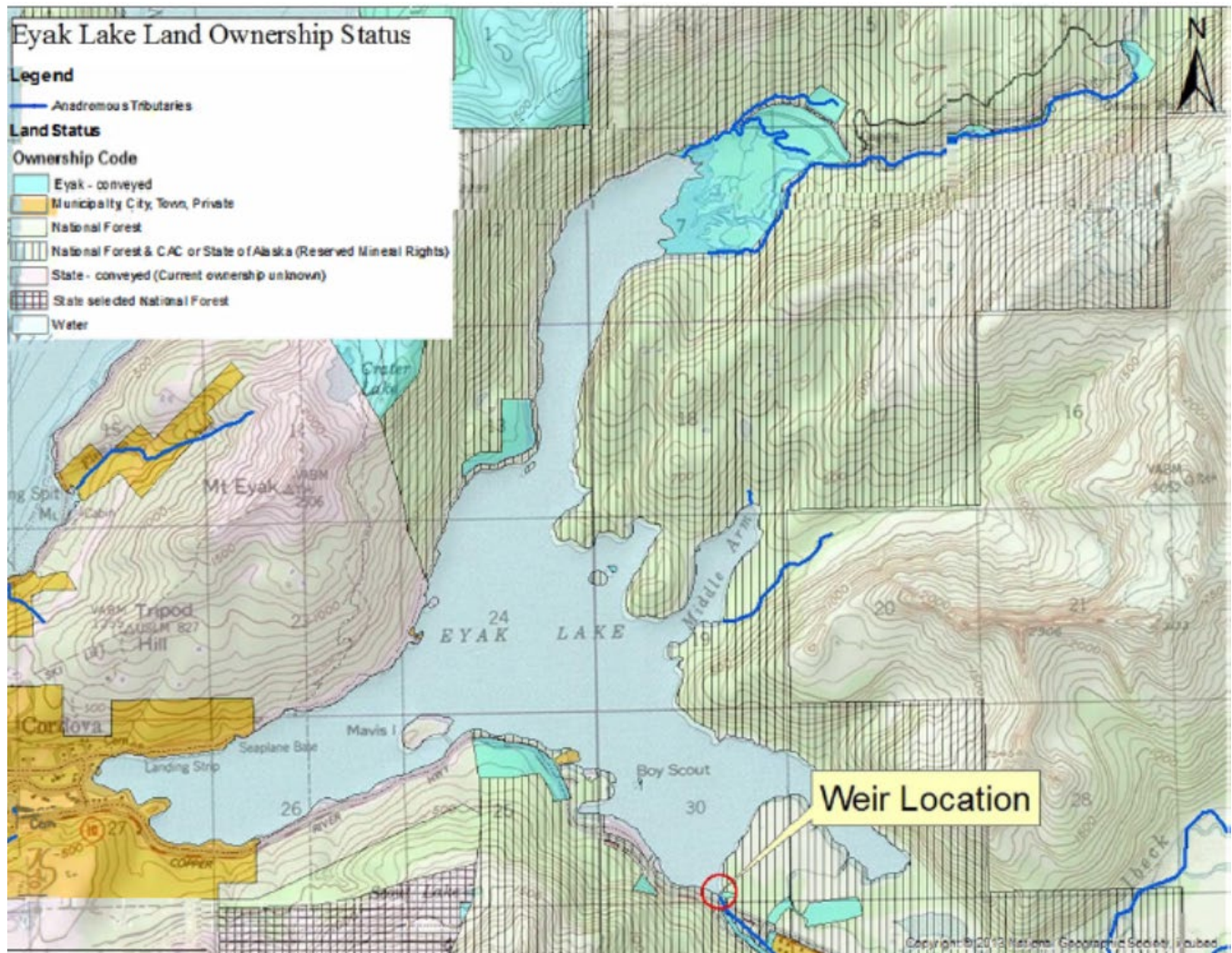


Figure 2. Eyak Lake, its anadromous tributaries, the weir location, municipality boundary of Cordova, and the surrounding community area.



Photo 1: The Eyak Lake weir between the lake outlet and Eyak River, just upstream from the Copper River Highway (USFS 2020).



Photo 2. A look across the weir at the perch and water surface drop. This also shows where the recent displacement of the weir occurred, moving the sheet pile downstream 5-6 feet (USFS 2020).

The overall objectives of this project are to restore lake level, improve upstream fish passage and prevent further weir deterioration at the outlet of Eyak Lake. This project will improve fisheries habitat, aquatic organism passage, and recreational opportunities in Eyak Lake and River. Partners on this project include CRWP, USFS, U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA), and the ADOT&PF.

Since submitting the initial draft of this proposal to EVOSTC, we hired DOWL engineers to complete preliminary investigations of the site and to develop feasible design alternatives. Further, we conducted extensive community outreach including direct mailings to residents living along Eyak River and Lake, published information articles in the local newspaper, hosted an in-person workshop with the lead engineer, and distributed a survey via the City of Cordova email listserv, CRWP listserv, CRWP's social media platforms, and in the local newspaper. There is broad community support to address the aging weir and partners selected a design concept that best reflects the project goals and needs of the local residents by replacing the weir in Kind with Natural Fishway. A new structure placed adjacent (downstream) of the existing weir can be designed to updated design standards allowing it to withstand the appropriate seismic, ice, and hydrodynamic forces. This concept also keeps the existing structure in place to maintain existing water levels during construction as well as minimizing disturbances on site and reducing the risk of impacts to spawning habitats in Eyak Lake. Currently there is no engineering or geotechnical information about the dilapidated weir structure. It is particularly important to obtain information for this site due to the proximity of downstream infrastructure including a State of Alaska highway bridge. CRWP and our partners have identified funding to assess the current conditions by completing geotechnical investigations, a site survey, develop a hydrologic and hydraulic (H&H) report, and concept designs in summer 2021, which will inform the final proposal to be submitted to EVOSTC in August.

We seek funding from EVOSTC to remediate this complex barrier to fish passage and improve aquatic organism passage to 25.92 miles of upstream lake and stream habitat. Designs will be agreed upon by partners and finalized, an RFP will go out for construction, and habitat restoration work will be implemented at the weir site.

References

Adelfio, Luca and Will Schreck. 2020. United States Forest Service. Living document of: Eyak Lake Weir Assessment.

Bellmore, J.R.; Benjamin, J.R.; Newsom, M.; Bountry, J.; Dombroski, D. 2017. Incorporating food web dynamics into ecological restoration: a modeling approach for river ecosystems. *Ecological Applications*. 27(3): 814–832. <https://www.fs.usda.gov/treearch/pubs/54335>

Botz, Jeremy. Alaska Department of Fish & Game, personal communication (October 20, 2020). Based on escapement peak counts and commercial harvest data, 2010-2020.

Crawford, Richard E. Technical Report. 2016. Mapping unique fish habitat: the seismically derived channel system of Eyak Lake, Alaska.

McCarron, Suzanne, and Hoffmann, Andrew G. February 1993. Technical Support Study for the Restoration of Dolly Carden and Cutthroat Trout Populations in Prince William Sound. Restoration Study Number 106, Final Report. Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report.

United States Forest Service. 2002. Eyak-Heney Landscape Assessment. Cordova Ranger District, Chugach National Forest.

2. PROJECT HISTORY (maximum 400 words)

Is this a new or continuing project? If continuing, please describe the history of the project and what has been accomplished to date. Please include references to any existing work products (i.e., summaries or reports of results, follow-up monitoring).

Project partners have been engaged in the development of this project for two years. In April 2020, USFS completed an initial assessment of current conditions at the weir. Upon evaluation of this assessment, partners agreed that pre-emptive efforts to upgrade the weir were a priority in order to avoid reacting to an unexpected weir failure which could drain Eyak lake, eliminating Sockeye Salmon spawning habitat and endangering the ADOT&PF owned bridge downstream. USFS and USFWS committed financial support for this project through existing agreements with the CRWP. Additionally, ADOT&PF has committed a non-federal match to help cover initial planning work. These contributions helped to leverage a grant from National Fish and Wildlife Foundation to complete preliminary investigations on the weir during 2021, making the outcomes achievable. This commitment to on-going planning helps demonstrate the importance of the project and support from a broad range of partners.

With existing funds, partners will hire an engineering firm in 2021 to complete a site survey, an H&H report, geotechnical investigations, and conceptual designs. Project partners will review deliverables from these efforts and identify a plan for moving forward on agreed upon designs. We are seeking funds from EVOSTC to finalize the design and implement the restoration project.

3. PROJECT DESIGN

A. Objectives

List the objectives of the proposed project and briefly state why it is important. If your proposed project builds on recent work, provide details on the need for its continuation and whether any changes are proposed. If the proposed project is for

new work, explain the benefits of the new project and why it is needed to further the Council's mission of restoring and recovering injured natural resources and services.

The primary objective of this proposal is to design and construct an improved grade control structure at the outlet of Eyak Lake by 2023. The primary purpose of the new structure will be to support unhindered aquatic organism passage, maintain lake levels, pass debris, and protect downstream infrastructure. By replacing the existing weir, we will improve habitat connectivity for injured natural resources living in Eyak Watershed, including Sockeye Salmon, Pink Salmon, Cutthroat Trout, and Dolly Varden, as well as supporting Coho Salmon and other resident aquatic organisms moving between Eyak River and into Eyak Lake. Furthermore, the existing infrastructure is failing, slowly lowering lake levels which could reduce important near-shore spawning habitat for Sockeye Salmon. Additionally, lower lake levels result in lower surface ice levels during winter months. If ice sits below the outlet of culverts conveying hillside drainage into the lake, drainage water stays on top of the ice instead of bringing oxygen-rich water to nearshore spawning beds.

The initial design of the current weir infrastructure was also intended to support sport fishing via a platform that has failed and is no longer safe for anglers. This platform is adjacent to a boat slot that was to allow for up and downstream movement of recreational boats from the river to the lake. Both of these features are failing, and re-designing the weir will allow for stakeholders to identify opportunities for improving the recreational opportunities at this site, an injured service as defined by EVOSTC.

This work will build on current preliminary investigations that will be completed by the end of summer 2021, including a site survey, geotechnical investigations, an H&H report, and concept designs with cost estimates. We are requesting EVOSTC support to take the preferred concept to full design and construction upon completion of these preliminary investigations.

While working on the weir is a unique project compared to the culvert work our partnership has focused on, it is a continuation of our efforts to make the Copper River watershed barrier free for aquatic organisms. We will build on the past successes of our award-winning fish passage partnership in order to successfully address this fish passage barrier.

B. Project Location

Where will the project be undertaken and why was the area chosen? Descriptive maps, photos and figures should be included here, as applicable. Describe the project area's most important features and characteristics as they relate to the spill restoration and recovery benefits of the proposed project.

This habitat restoration project will take place just southeast of the town of Cordova, AK in the Eyak Lake watershed, and specifically at the outlet of the Lake. The project area is home to ten fish species, five of which provide annual revenue for the community of Cordova from commercial and sportfishing, and are also important subsistence resources for residents of Cordova. Restoring the aquatic connectivity at the lake outlet and maintaining the water level of the lake will sustain and promote improved fish habitat. Spill restoration and recovery benefits of the project include long-term enhanced aquatic organism passage and an improvement of habitat for subsistence resources. Specifically, Eyak Lake provides an estimated 15 acres of nearshore Sockeye Salmon spawning beds, and were the weir to fail, many of these gravel beds would be exposed and no longer underwater. Additionally, a smaller lake environment reduces overwinter rearing habitat for juvenile salmonids

and resident fish. A reduction in the size of the lake because of weir failure reduces the number of fish the lake can support.



Photo 3: Eyak Lake Weir at the outlet of Eyak Lake, draining into Eyak River.

C. Procedures and Methods

For each objective listed in A. above, identify the methods and procedures that will be followed to meet the objective and note any prior history and results utilizing the same or similar methods elsewhere. Methods may include appropriate protocols and/or staff expertise or training. Attach any applicable contractors and sub-contractor's names, if available, engineers' or other cost estimates, if applicable, and describe any protocols and cost controls which will be applied to the expenditure of EVOSTC funds.

Project partners will use similar methods to implement restoration at Eyak Lake weir that we have used to improve fish passage at culverts. We have reviewed the results of our preliminary investigations completed in summer 2021, including the site survey, H&H report, geotechnical investigations, and concept designs. With community and partner input we determined the final preferred design. With EVOSTC support we will work with the engineer to complete the final design of this preferred alternative.

Our preferred alternative installs a new structure placed adjacent (downstream) of the existing weir that can be designed to updated design standards allowing it to withstand the appropriate seismic, ice, and hydrodynamic forces. This concept also keeps the existing structure in place to maintain existing water levels during construction as well as minimizing disturbances on site and reducing the risk of impacts to spawning habitats in Eyak Lake.

The natural fishway will be designed to significantly improve the ability to pass juvenile salmon. Locating the fishway close to the river right (Copper River Highway) will allow for easy access for maintenance and monitoring. The fish passage will be designed to withstand the critical flow event that would see maximum velocities at the weir. The rock ramp/grade control structure will contain large stones keyed in to resist mobilization, protecting the natural fishway. Lastly, the offset location of the fishway will reduce the likelihood of damage by ice, debris or high velocity flows.

Recreational boat passage will be continued at the weir by maintaining the location of the boat slot and restoring the existing dimensions of the boat slot by fixing the bulged section of the weir. The rehabilitation of

the boat slot will be designed to minimize potential damage to the hulls of the shallow draft watercraft using it. Depending on the hydraulics of the weir flow in conjunction with the natural fishway, the boat slot will be optimized to the type of boat using the access.

The design of the new weir structure will attempt to minimize the maintenance requirements of the structure. To address this, the design will consider how the community interacts with the weir and the environmental parameters that may impact the integrity of the structure. Layers of rock will be used to buttress the weir structure to act as a flexible and repairable surface with tangential structures, like the pier at the boat slot, located and designed to withstand use and potential misuse from the public and impacts from environmental forces.

The conceptual plans for the proposed alternative will likely be (image 1):

- Installation of 365 feet of new sheet pile placed in two linear sections making a 'V' shape similar to the existing structure*
- The width of the crest will increase to approximately 5 feet wide*
- The height of the crest will match the existing structure*
- Rock slopes to buttress the weir will be placed at 3H:1V slope*
- A scour apron will extend downstream approximately 25 to 40 feet (depending on design)*
- A natural fishway protected by a large rock ramp will be installed river right of the weir with the approximate aerial dimensions of 30 to 50 feet downstream and 10 to 20 feet wide*

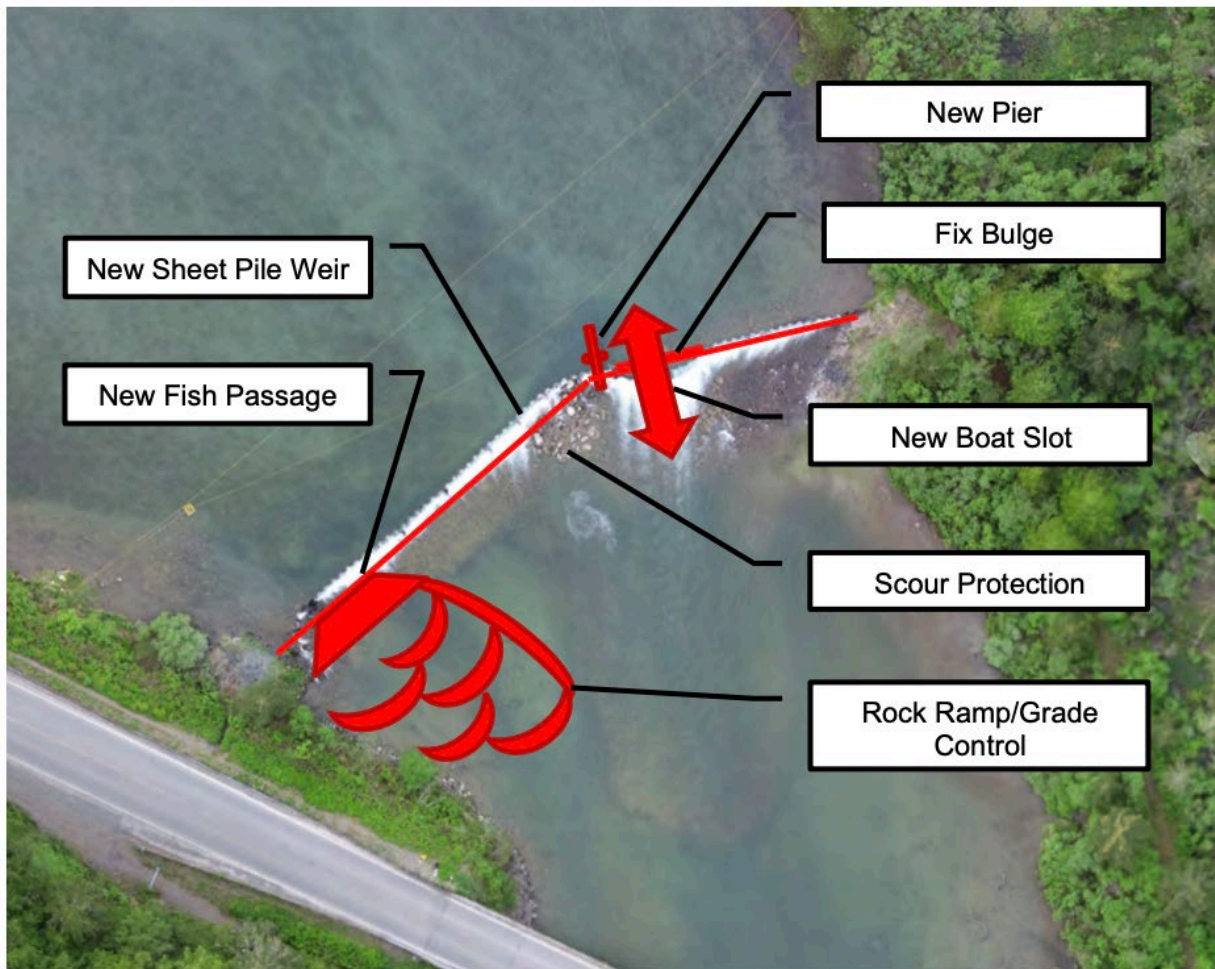


Figure 3: Concept design for new infrastructure.

Upon securing funding, we will work with our design team at DOWL to develop the final design. Partners will meet to review and comment on 35%, 65%, and 95% designs. CRWP will maintain a project webpage for posting designs, comments, and other partnership discussions in order to keep partners on the same page. Once the design is finalized, CRWP will follow federal procurement guidelines to solicit bids from contractors for constructing the final design. CRWP staff have completed construction contract management training and have multiple years of contract management experience in-house, in addition to the support and input of our partners who work on construction projects state-wide and all together have decades of experience on fish-passage construction projects.

CRWP will also secure required permits for project implementation. After connecting with partners, the following is the list of anticipated permits required for this project:

- Eyak Corporation Land Use Permit
- ADOT&PF Special Use Permit
- ADF&G Fish Habitat Permit

- ADF&G Aquatic Resource Permit
- NEPA analysis, already completed by USFS
- ADNR temporary water use permit

CRWP will hire an on-site construction inspector to ensure the new grade control infrastructure is installed to design specifications. During the course of construction, there will be weekly meetings to maintain communication between all partners and ensure we maximize the expertise of our partners to overcome any issues that might arise during construction.

Upon completion of the construction, partners will evaluate the as-builts to ensure the structural objectives of the restoration project are met, namely maintaining lake levels. ~~USFS will help to evaluate the biological outcomes of this restoration effort to ensure we achieve our goal of improving fish passage.~~

Post-construction evaluation and monitoring of fish passage will be conducted by the U.S. Forest Service and will include three components:

- 1) Verify the new structure is constructed/installed properly, in accordance with design.*
- 2) Measure hydraulic conditions to assure that the stream meets fish passage guidelines.*
- 3) Perform biological assessment by monitoring fish passage to confirm the hydraulic conditions are resulting in successful passage.*

Post-construction fish monitoring will document fish passage through the new weir structure using either an automated video monitoring array or PIT tagging translocation study using resident and anadromous species. Video monitoring is preferred as it would allow documentation of all species and life stages passing the structure. Preliminary design alternatives for the new weir structure appear to be conducive to the installation of a video monitoring system. However, final design is needed to make this determination. If site-specific conditions are not conducive to the installation of a camera array or traditional picket weir/video chute, monitoring will be accomplished using PIT tagging methods for at least one resident and one anadromous species (i.e. Dolly Varden and coho salmon). The aims of this monitoring plan are to evaluate hydraulic passage conditions and document upstream and downstream passage by species and life stage during ice-free months (April-September) for two years post-construction. This monitoring program will not be a census of fish entering and leaving Eyak Lake.

Outreach and education regarding this project will occur concurrently over the course of the project. CRWP has a network of members and partners throughout the community and will host community workshops in order to educate and engage community members in developing the vision for the new grade control structure. We will do special targeted mailing to Eyak Lake and River neighbors to ensure these residents are aware of the planning and discussions focused on the weir. We will also publish articles in the local newspaper, and use our website and social media channels to raise awareness and solicit input on the project. Additionally, we will coordinate with our long-time education partners at Prince William Sound Science Center to engage youth through field-

based outings and internships that will allow them to learn more about aquatic ecosystems, in particular Eyak Lake and River, fish passage, and the wide range of natural resource careers in the region.

D. Project Reporting

For all EVOSTC-funded projects, the Project Manager shall commit to provide work progress reports annually (or more frequently, if requested by the Executive Director in writing). Reports shall include narrative and specifics on funding received and expended to date, progress made on milestones and tasks, and must explain any variations from the project plan.

The Project Manager has managed multiple grants from State, Federal, and private partners, and has a system for tracking reporting requirements to ensure they are submitted in a timely manner. The Project Manager is committed to providing an annual report, or more if requested, to keep the Council updated on this project should we be successful in receiving funding.

4. COORDINATION AND COLLABORATION

A. With Other EVOSTC-funded Projects (if applicable)

If applicable, please indicate if the proposed project relates to, complements, or includes any collaborative efforts with past or current projects funded by the EVOSTC. This likely does not apply to many habitat projects.

While addressing fish passage at the weir is a unique project, the same partnership that has been addressing fish passage on the Copper River Delta by replacing undersized culverts with stream-simulation designs will tackle this new challenge. Our group of partners will build off a long history of positive working relationships to collaborate on the weir project, including multiple culvert replacements in recent years funded by the EVOSTC under the Copper River Watershed Enhancement Project (18180120).

It should be noted that the Project Team implementing Copper River Watershed Enhancement Project #18180120 has been nationally recognized for their exemplary work. In November 2020, the team received the joint USDA Under Secretary and Forest Service Chief award for Customer Experience. The Joint Chief's Awards are meant to celebrate the accomplishments of Forest Service individuals and teams throughout the United States and their contributions to the agency mission and the communities served. Within USDA, these awards are highly regarded because of the highly competitive nationwide selection process.

B. With Trustee or Other Management Agencies or Organizations

Please discuss if there are any aspects which may support EVOSTC trust or other agency work, or which has received EVOSTC funding previously. Describe any agency feedback or direction received, including the contact name of the agency staff.

If the proposed project requires or includes collaboration with other agencies or organizations to accomplish the work, such arrangements should be explained, and the names of agency or organization representatives involved in the project should be provided. If your proposal is in conflict with another project or program, note this and explain why.

CRWP will continue to coordinate with our award-winning partnership to address the Eyak Lake weir. Our partnership includes multiple representatives from USFWS, NOAA, USFS, ADF&G, and ADOT&PF. Because of the significance of Eyak Lake to the City of Cordova, we will also coordinate with the City and neighboring landowners to the project, Eyak Corporation. We have successfully coordinated with Eyak Corporation for culvert replacements on their land or right of ways and have support from Eyak Corporation for work at this site. In order to keep so many partners on the same page, CRWP will host regular teleconferences with partners and maintain a website for hosting important project documents, discussion notes, and resources that will help make the project successful. For partners unable to attend the meetings, detailed notes will be provided to help them track progress, and the project manager will periodically reach out to partners who have not attended meetings to ensure they are tracking and on board with project progress. We will also continue to partner with our education partners at the Prince William Sound Science Centers to engage youth through field-based programs and/or internships in this restoration project. The following table lists the key contacts at our partner organizations:

Copper River Regional Fish Passage Partnership as of 3/19/2021

Name/Organization	Email	Contribution to partnership
Gillian O'Doherty / ADFG / Fish Passage program coordinator	gillian.odoherty@alaska.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Kim Clark/ ADFG/Fish Passage Program	kimberly.clark@alaska.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Jay Baumer / ADFG / Sportfish Division	jay.baumer@alaska.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Jeremy Botz / ADFG / Commercial Fish Division	maria.wessel@alaska.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Megan Marie / ADFG / Habitat	megan.marie@alaska.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Jeff Stutzke / ADOT&PF / Hydrology	jeff.stutzke@alaska.gov	Technical assistance for planning, implementing,
Judy Chapman / ADOT&PF / Planning	judy.chapman@alaska.gov	Assistance with planning and coordination at the state-wide level
Robert Dunning / ADOT&PF / M&O	robert.dunning@alaska.gov	Technical assistance for planning, implementing,
Robbie Mattson/ ADOT&PF / Cordova M&O	robert.mattson@alaska.gov	Local knowledge to inform restoration planning and design.
Dan Adamczak / ADOT&PF / Design	daniel.adamczak@alaska.gov	Technical assistance for planning, implementing,
Leif Stavig / City of Cordova / Planner	planning@cityofcordova.net	Participate in design review and represent City of Cordova interests
Helen Howarth / City of Cordova / City Manager	citymanager@cityofcordova.net	Participate in design review and represent City of Cordova interests
Sam Greenwood / City of Cordova / Public Works	publicworks@cityofcordova.net	Participate in design review and represent City of Cordova interests
Lisa Docken / CRWP / Executive Director	lisa@copperriver.org	Contract management
Kirsti Jurica / CRWP Watershed Restoration Staff	kirsti@copperriver.org	On-the-ground data collection to inform restoration planning, design, implementation and monitoring.
Kate Morse / CRWP / Program Director	kate@copperriver.org	Overall project management
Brennan Cain / Eyak Corporation / Vice President	bcain@eyakcorp.com	Access permission
Erika Ammann / NOAA / Fisheries Biologist	erika.ammann@noaa.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Matt Piche / Native Village of Eyak / Natural Resources Program	matt.piche@eyak-nsn.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project. Engage NVE interns in project.
John Whissel / Native Village of Eyak / Director of Natural Resources	john.whissel@eyak-nsn.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Lauren Bien / Prince William Sound Science Center / Education	lbien@pwscc.org	Coordinate with education program delivery
Steve Namitz / USFS Chugach National Forest / District Ranger	steven.namitz@usda.gov	Hiring staff hydrologist and fish biologist who will take over USFS role in this project when hired.
Ron Britton / USFS Chugach National Forest / Aquatic Program	ronald.j.britton@usda.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
/ USFS / Fisheries Biologist	currently hiring	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project. Main point of contact for USFS/CRWP agreements.
/ USFS / Hydrologist	currently hiring	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project. Main point of contact for USFS/CRWP agreements.
Trent Liebich / USFWS / Restoration Program Manager	trent_liebich@fws.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.
Heather Hanson / USFWS / Fish Passage Engineer	heather_hanson@fws.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project. Main point of contact for USFWS/CRWP
Franklin Dekker / USFWS / Hydrology	franklin_dekker@fws.gov	Technical assistance for planning, implementing, and evaluating Eyak Lake weir restoration project.

C. With Alaska Native and Other Local Communities

Please describe efforts at outreach and to involve local and Alaska Native communities, tribes or Native corporations in the project, as appropriate, and include your plan for communication and coordination as the project advances.

CRWP will also connect with community members and partners to solicit feedback on additional desired outcomes of improving the Eyak Lake weir. Specifically, the initial structure was designed to support angler access and passage of watercraft, however these aspects of the weir have failed and need to be evaluated in conjunction with community wishes. CRWP has been successful in gathering community input and involvement on past habitat restoration efforts and will tap into these communication channels and networks to solicit input and additional support for this project. Specific strategies for engaging the community will be through in-person or virtual workshops, developing a project website for sharing information and soliciting input, a mailing to Eyak Lake and River neighbors, and using email, the local newspaper, and social media “channels” to get the word out about workshops and where people can learn more and share their feedback.

CRWP is also coordinating with Eyak Corporation, a landowner adjacent to the weir, and the Native Village of Eyak, the local tribal entity in Cordova. CRWP has had multiple phone calls with these partners to confirm their interest in participating in this project. Eyak Corporation has expressed a commitment to provide permits required to access the project site over their land, and the Native Village of Eyak has expressed an interest in involving their natural resource interns in the project planning, implementation, and monitoring efforts so they can learn more about this project, aquatic habitat, and fish passage. Eyak Corporation and Native Village of Eyak will be included on the partner email list so they receive regular invitations to participate in planning discussions, design reviews, and construction updates. Should they not be able to participate in the calls, they will receive detailed meeting notes, access to the project website, and phone calls from the Project Manager to make sure they are tracking and to ensure they have the opportunity to express any concerns or raise any questions as the project progresses.

5. DELIVERABLES

List and describe expected products that will come from this project. Deliverables may include but are not limited to active restoration results, habitat protection or enhancement obtained, maps, photographs, financial reports and other documentation of projects in progress and completed, and summaries of benefits achieved for spill recovery and restoration objectives. Annual written progress reports are due on March 1 immediately following the end of the EVOSTC fiscal year and a final report is due on March 1 in the year following the last fiscal year of the project. See the Council's [Reporting Policy](#) for details and forms. The Project Manager will be responsible for all deliverables unless otherwise noted below.

In addition to the required reporting to EVOSTC, other deliverables from this project will include:

- design contract with engineer;
- 35%, 65%, 95%, and final designs and specifications for constructing an updated grade control structure;
- construction RFP and contract;
- required permits, anticipated to include: Eyak Corporation Land Use, ADOT&PF Special Use Permit, ADF&G Aquatic Resource Permit and ADF&G habitat permit, ADNR Temporary Water Use Permit
- a new grade control structure;

- outreach and education products to include newspaper articles, community workshops, and field trips;
- and a final monitoring report.
- There will also be a project website set-up prior to FY22 that will provide access to all design sets, partner meeting notes, and other relevant project resources to serve as a central location for all documents specific to this project.

6. STATUS OF SCHEDULED PROJECT ACCOMPLISHMENTS

Milestones are the major steps to meet overall project objectives.

Tasks are intermediate steps to meet milestones (for example, initial project planning, design, engineering and construction phases and schedules, if applicable, due diligence and other necessary steps or stages to complete the project work).

Deliverables are products that will be produced from the project (see section 5 above).

List each project milestone, task, and deliverable in the chart (examples are shown below), and specify by each quarter of each year when these are anticipated to be accomplished. C = completed; X = planned work is underway, but not yet completed. Show project milestones and planned task progress by fiscal year and quarter, beginning February 1, 2022. Fiscal Year Quarters for each year of the project are: 1= Feb. 1-April 30; 2= May 1-July 31; 3= Aug. 1-Oct. 31; 4= Nov. 1-Jan 31.

For multi-year projects, reviewers will use this information in conjunction with project reports to assess whether the project is meeting its objectives and is suitable for continued releases of funding.

Milestone/Task	FY22				FY23				FY24				FY25				FY26			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestone: Select preferred design	C																			
Task: Partner meeting	C																			
Task:																				
Milestone: Hire design engineer																				
Task: Contract for final design		C																		
Milestone: Develop final design																				
Task: Review 35% designs		C																		
Task: Review 65% designs			C																	
Task: Review 95% designs			C																	
Task: Develop Final designs				C																
Milestone: Secure required permits																				
Task: Apply for permits				C																
Milestone: Hire contractor to construct new grade control structure																				
Task: Construction RFP				C																
Task: Pre-bid meeting				C																
Task: Award final contract					C															
Milestone: Construct New Grade Control Structure																				
Task: Hire construction inspector					C															

Milestone/Task	FY22				FY23				FY24				FY25				FY26				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Task: Implement construction with regular partner meetings to track progress						C															
Task: Evaluate construction as-builts							C														
Task: Monitor to ensure project objectives met										x	x	x	x		x	x	C				
Milestone: Project outreach and education																					
Task: community workshop		C	C																		
Task: newspaper articles		C					C														
Task: field trip to project site co-hosted with PWSSC		C				C				C											
Reporting:																					
Annual progress report						C				C				C							
Final report/Project results																			C		
Deliverables:																					
Contract for final design		C																			
35% designs		C																			
65% designs			C																		
95% designs			C																		
100% designs and RFP for construction				C																	
Construction contract						C															
Required Permits						C															
Construct Improved Grade Control Structure						C															
Monitoring report																			C		
Project outreach and education event		C	C			C				C											
Newspaper article		C					C														

7. PROJECT BUDGET

A. Budget Forms (Attach)

Please attach completed budget forms using Excel workbook for each EVOSTC fiscal year (Feb. 1 to Jan. 31) of the project and provide adequate financial details. Projects may be from one to five years in duration. Include 9% GA (General Administration) for each budget item, except for habitat parcel purchase proposals, which do not include GA. Include a narrative to explain the anticipated funds release schedule for multi-year projects, and indicate whether annual releases are requested or a different schedule. Summarize funding for each fiscal year in the Budget Summary Table below, and include a screen shot of the "Summary" budget in the proposal.

Budget Category:	Proposed FY 22	Proposed FY 23	Proposed FY 24	Proposed FY 25	Proposed FY 26	5-YR TOTAL PROPOSED	ACTUAL CUMULATIVE
Personnel	\$138,200	\$175,850	\$91,653	\$87,653	\$0	\$493,356	
Travel	\$5,186	\$2,902	\$2,031	\$28	\$0	\$10,147	
Contractual	\$526,000	\$4,074,761	\$250	\$0	\$0	\$4,601,011	
Commodities	\$0	\$30,000	\$0	\$0	\$0	\$30,000	
Equipment	\$0	\$0	\$0	\$0	\$0	\$0	
Indirect Costs (report rate here)	\$36,017	\$44,942	\$10,419	\$10,344	\$0	\$101,722	
SUBTOTAL	\$705,403	\$4,328,455	\$104,353	\$98,025	\$0	\$5,236,237	
General Administration (9% of subtotal)	\$63,486	\$389,561	\$9,392	\$8,822	\$0	\$471,261	N/A
PROJECT TOTAL	\$768,889	\$4,718,016	\$113,745	\$106,848	\$0	\$5,707,498	
Other Resources (In-Kind Funds)	\$21,180	\$16,380	\$11,580	\$0	\$0	\$49,140	

The total funding request from EVOSTC is \$5,707,498. FY 22 includes funds for completing the final design, including partner time to review designs. FY23 includes funds for construction of the weir and construction oversight by the design engineers, as well as time for partners to participate in meetings for updates on progress. FY24-25 includes funds for USFS to conduct post-restoration monitoring. ~~with the contractual estimates based on actual construction costs for a similar project in Anchorage. The contractual cost estimates will be fine-tuned for the final EVOSTC submission deadline in August based on preliminary investigations scheduled for this summer.~~ Travel costs are included to support site-visits by personnel from partner agencies located outside Cordova. Project partners request annual releases of funding by the start of each fiscal year should our proposal be selected.

B. Sources of Additional Funding

Please identify any non-EVOSTC sources of funds or in-kind contributions that would be used as cost-share for the project. List each source, the amount of funds from each source, and the purpose for which the funds will be used. Do not include funds that are not directly and specifically related to the work being proposed in this proposal. Please attach documentation from additional project funding sources which confirms and describes matching or other leveraged funds, including date(s) the non-EVOSTC funds are/will be authorized and received, and any conditions on their use.

Non-EVOSTC Funds to be used for this project, please include source(s) and amount and timing per source, and any conditions on their use:

FY22	FY23	FY24	FY25	FY26	FY22-26 Total
\$8,700.00 USFWS In-kind	\$8,700.00 USFWS In-kind	\$8,700.00 USFWS In-kind			\$26,100

\$1,920.00 Eyak Corporation In-kind (1 person)	\$2,240.00 Eyak Corporation In-kind (1 person)	\$640.00 Eyak Corporation In-kind (1 person)			\$4,800
\$5,760 City of Cordova in-kind (3 people)	\$2,240 City of Cordova in-kind (1 person)	\$640 City of Cordova in-kind (1 person)			\$8,640
\$3,840 Native Village of Eyak in-kind (2 people)	\$2,240 Native Village of Eyak in-kind (1 person)	\$640 Native Village of Eyak in-kind (1 person)			\$6,720
\$960 PWSSC in-kind	\$960 PWSSC in-kind	\$960 PWSSC in-kind			\$2,880

Matching funds for implementing this project will be spent prior to FY22. In FY21 we have \$41,000 from National Fish and Wildlife Foundation, \$30,000 from ADOT&PF, and \$40,000 from USFS in order to conduct the preliminary investigations at this site, including site survey, H&H, geotechnical investigations, and concept designs with cost estimates. We hope to wrap this work up by August 2021. At this time, no additional funding has been secured for the final design and construction, however this project is a priority project written into existing agreements CRWP has with USFWS and USFS, and we will work these partners to identify funds as necessary to see this project through to completion.

We do have in-kind support in the form of staff time and expertise from our resource partners that is reflected in the table above. The estimates in the table are based on the following:

FY 22: 6 planning and design review meetings x 4 hours (participation and preparation) x \$80/hour (to reflect average salary and benefits of project partners).

USFWS: 60 hours/year to support Project Manager. Engineer \$85/hour, Hydrologist \$60/hour

PWSSC educators time we estimate a total of 12 hours to plan and implement an annual field trip to Eyak Lake.

FY23: 4 planning and evaluation meetings x 4 hours x \$80/hour. Plus an estimated 12 hours of construction check-ins/monitoring during construction activities.

USFWS: 60 hours/year to support Project Manager. Engineer \$85/hour, Hydrologist \$60/hour

PWSSC educators time we estimate a total of 12 hours to plan and implement an annual field trip to Eyak Lake.

FY 24: 2 monitoring meetings x 4 hours x \$80/hour.

USFWS: 60 hours/year to support Project Manager. Engineer \$85/hour, Hydrologist \$60/hour

PWSSC educators time we estimate a total of 12 hours to plan and implement an annual field trip to Eyak Lake.

8. PROJECT MANAGEMENT AND PERSONNEL

A. Project Management

List names of the Project Manager, the primary fiscal agent for the project and any other key partners associated with the project. List any property owners, businesses, cooperating entities (non-profit or other) and government agency personnel that will be involved and their role on the project.

The following planning team partners have a long track record of effectively working together in order to plan and implement successful fish passage improvement projects in the Copper River watershed. Since 2008, we have restored fish passage at nine high priority sites in the Copper River watershed by replacing undersized culverts with stream-simulation designs and removed one abandoned culvert and replaced it with a low water ford. We are currently in year two of designing and constructing a total of 13 fish passage culverts on the Copper River delta, supported by \$8 million in funding from Exxon Valdez Oil Spill Trustee Council. This partnership recently received the 2020 U.S. Forest Service's Chief's Honor Award for Region 10 in recognition of our outstanding achievements to improve aquatic organism passage on the Copper River delta. This past experience makes this an ideal group of partners to take on the unique challenge of this Eyak Lake weir project.

Kate Morse, Program Director for the Copper River Watershed Project, will be the project lead. Kate has 18 years of experience implementing partnership projects in the Copper River/Prince William Sound region, helping to coordinate communication and information dissemination between a wide range of partners. Since 2008 she has worked with the CRWP to help prioritize fish passage improvement projects in the region, and has overseen contracts for designing and constructing multiple fish passage and stormwater management projects. Kate has completed graduate-level work in facilitation, conflict resolution, evaluation, public participation and nonprofit management and will bring this expertise to project management and implementation.

Kirsti Jurica, Hydrologist and Restoration Staff at the Copper River Watershed Project will work closely with Kate and other partners to support project design, permitting, implementation, and monitoring. Kirsti has extensive hydrology and biology experience, including developing and evaluating fish passage at almost 200 culverts in the Copper River watershed.

Fisheries Biologist, Chugach National Forest: The U.S. Forest Service is in the process of hiring a new biologist to work on Chugach National Forest who will work closely with this project and help finalize and implement a biological monitoring program to ensure the project achieves desired outcomes for aquatic organism passage, and manage the partnership agreement with CRWP that provides financial support to improve Eyak Lake Weir.

Hydrologist, Chugach National Forest: The U.S. Forest Service is in the process of hiring a new hydrologist to work on Chugach National Forest who will work closely with this project and help finalize and implement a biological monitoring program to ensure the project achieves desired outcomes for aquatic organism passage.

Megan Marie, Habitat Biologist, Alaska Department of Fish & Game. In coordination with local biologists, Megan will represent ADFG on the planning team and will help ensure ADFG's feedback is incorporated into evaluation of survey, H&H report, geotechnical information and evaluation of concept designs.

Jeff Stutzke, Hydrologist, Alaska Department of Transportation & Public Facilities. Jeff has represented ADOT in multiple fish passage improvement projects in the Copper River region. He will help solicit ADOT's participation

and feedback on data collected as part of this project and evaluation of concept designs.

Heather Hanson, Fish Passage Engineer, U.S. Fish & Wildlife Service: Heather will represent USFWS and will participate in working group discussions, evaluate data generated during site surveys, H&H report, geotechnical investigations, and help evaluate concept designs for improving the weir. Heather has helped facilitate a large number of fish passage improvement projects throughout Alaska, including multiple in the Copper River watershed.

Erika Amman, Fisheries Biologist, NOAA: Erika will represent NOAA and will participate in working group discussions, evaluate data generated during site surveys, H&H report, geotechnical investigations, and help evaluate concept designs for improving the weir.

Lauren Bien, Education Director, PWSSC: Lauren has partnered extensively with CRWP on education and outreach programs. She will coordinate with the Project Manager in order to implement engaging, effective educational field trips and/or internships that allow local students the chance to learn about aquatic ecology, fish passage, and natural resource careers.

In addition to year-round staff from these partner organizations, we will also incorporate additional seasonal technicians into field evaluations and partner discussions when feasible, providing professional development and on the job training for up and coming fish and/or habitat biologists. Project partners are working to secure funding for future interns who will be involved in this project as well.

B. Personnel Qualifications

*The Resumes of the lead proposer(s), Project Manager and other senior personnel involved in the proposal must be attached. Each resume is limited to **two** consecutively numbered pages and must include the following information:*

- A list of present and past employers and affiliations, professional credentials, mailing address, and other contact information (including e-mail addresses and telephone numbers).*
- A list of prior projects and persons (including their organizational affiliations) including contact information, with whom the lead proposer(s)/Project Manager has collaborated on a project within the last four years. If there have been no collaborators, this should be indicated.*

Note that we may contact the persons listed for additional information.

A resume for the following lead personnel from partner organizations are included in the supplemental information submitted with this proposal:

- Kate Morse, Project Manager
- Kirsti Jurica, CRWP
- Heather Hanson, USFWS
- Erika Amman, NOAA
- Steve Namitz, USFS
- Jeff Stutzke, ADOT&PF