



SUBJECT: INFORMING THE ASSEMBLY OF A GRANT AMENDMENT FOR TIME EXTENSION ONLY TO BE PRESENTED TO THE BOROUGH MANAGER FOR SIGNATURE.

AGENDA OF: June 3, 2025

ASSEMBLY ACTION:

AGENDA ACTION REQUESTED: For information only.

Route To	Signatures
Originator - Mike Campfield P.E.	<div>5 / 1 6 / 2 0 2 5</div> <div>X M i c h a e l C a m p f i e l d</div> <div>S i g n e d b y : M i k e C a m p f i e l d</div>
Public Works Department Director	<div> R e c o v e r a b l e S i g n a t u r e</div> <div>X T o m A d a m s , P E</div> <div>S i g n e d b y : T o m A d a m s</div>
Finance Director	<div> R e c o v e r a b l e S i g n a t u r e</div> <div>X C h e y e n n e H e i n d e l</div> <div>S i g n e d b y : C h e y e n n e H e i n d e l</div>
Borough Attorney	<div>5 / 2 0 / 2 0 2 5</div> <div>X N i c h o l a s S p i r o p o u l o s</div> <div>S i g n e d b y : N i c h o l a s S p i r o p o u l o s</div>
Borough Manager	<div>5 / 2 0 / 2 0 2 5</div> <div>X M i c h a e l B r o w n</div> <div>S i g n e d b y : M i k e B r o w n</div>
Borough Clerk	<div>5 / 2 3 / 2 0 2 5</div> <div>X L o n n i e M c K e c h n i e</div> <div>S i g n e d b y : L o n n i e M c K e c h n i e</div>

ATTACHMENT (S): Amendment #1 for Grant No. AKSSF-56007 (7 pp)

SUMMARY STATEMENT: The purpose of this legislation is to inform the Assembly that the Borough Manager will be asked to sign Amendment #1 for Grant No. AKSSF-56007 Neklason Lake and Birch Creek Fish Passage Improvements. This is a time extension only amendment, extending the period of performance for the grant to November 30, 2026.

AMENDMENT ONE

To Subaward Agreement AKSSF-56007

Between
Alaska Department of Fish and Game, Alaska Sustainable Salmon Fund

And
Matanuska-Susitna Borough

For the project
Neklason Lake and Birch Creek Fish Passage Improvements (formerly *Neklason and Lynda
Lakes Fish Passage Improvements*)

- I. Scope of revision (revised statement of work attached):
- a. The end date is extended to November 30, 2026.
 - b. Construction funding for the Lynda Lake site is shifted to a Birch Creek site (20501470) to complement AKSSF project 55008.
 - c. The title is changed to *Neklason Lake and Birch Creek Fish Passage Improvements*.
- II. Signatures:

For the Matanuska-Susitna Borough:

Mike Brown, Matanuska-Susitna Borough Manager

Date

For the Alaska Department of Fish and Game:

Debbie Maas, Program Coordinator
Alaska Sustainable Salmon Fund

Date

Brian Frenette, Assistant Director
Division of Sport Fish

Date

Bonnie Jensen, Director
Division of Administrative Services

Date

Appendix 1: Revised Statement of Work

I. Project Title: Neklason Lake and Birch Creek Fish Passage Improvements

II. Project Number: 56007

III. Principal Investigator

Mike Campfield, PE, Environmental Engineer,
Matanuska-Susitna Borough
350 East Dahlia Ave.
Palmer, AK 99654
907-861-7719
mike.campfield@matsugov.us

Cole Branham, former PI

IV. Project Period: 3/1/23 - 11/30/26

V. AKSSF Objective: Fish passage **PCSRF Objective:** HP&R

VI. Project Description *Revised with Revision #1*

1. Synopsis

This project will replace two high priority fish passage barriers in the Matanuska-Susitna Borough (MSB) with fish friendly culverts, restoring unimpeded access to 14.5 km of instream habitat and 47 hectares of lake habitat for Chinook, coho, and sockeye salmon into Neklason Lake and Birch Creek. Sites were selected based on assessment data and prioritized by the extent of upstream habitat and the severity of the barrier.

2. Introduction

Salmon and trout produced in MSB streams support commercial, sport, and recreational fishing industries and contribute in excess of several hundred million dollars to the Southcentral Alaska economy. The MSB is one of the most populous and the fastest growing area in Alaska, averaging 3.4% population growth per year vs 1.2 % for the state as a whole. One consequence of rapid population growth is the rapid development of local road networks for access and transportation to residences, commercial centers, and recreational areas. During the 1970s through the 1990s, many of these roads were built with little or no consideration of fish passage, and the MSB Public Works Department has been working since 2004 to restore fish passage throughout the Borough as well as ensuring that no new barriers are installed.

Juvenile anadromous fish, such as Chinook, coho and sockeye salmon, spend up to three years in fresh water during which they must move up- and downstream or between watersheds to access favorable habitat. Unrestricted access via stream corridors to spawning, rearing, and overwintering habitats is essential to maintaining salmonid production as well as healthy populations of resident trout and other fish.

Movement of juvenile salmon and resident trout has been observed in response to a variety of environmental factors, including high and low flow events, changes in stream temperature, predation pressure, population densities, and the availability of food or shelter. The availability of overwintering habitat is often a factor that drives juvenile salmon survival, and a recently completed multi-year USFWS study on juvenile coho movement throughout the Meadow Creek watershed allows the MSB to select sites that impede access to such habitat, providing direct benefit to species of interest. Most fish passage barriers in the MSB primarily affect the movement of juvenile fish, but undersized culverts are often barriers to adults at low and high flow.

ADF&G identified and assessed over 580 road-stream crossing sites for fish passage throughout the MSB between 2009 and 2011 through AKSSF project 45878. In 2012, approximately 52% of these culverts were rated as Red or likely barriers to juvenile fish passage, and a further 18% as Gray or partial barriers. Those culverts impeded access to an estimated 1,019 km of upstream habitat, including 344 km catalogued in the Anadromous Waters Catalog, and an estimated 2,671 ha of lakes. Since 2004, 114 barriers on MSB roads have been replaced with fish friendly structures by partners including the MSB, Alaska Department of Fish and Game (ADF&G), the U.S. Fish and Wildlife Service (USFW), and various non-profits and private landowners. This work has restored access to 158 km of instream habitat and over 2,428 ha of lake habitat as of January 2021. This project continues the partnership between the MSB, ADF&G, and USFWS to address prioritized fish passage barriers. ADF&G's prioritization for culverts considers the severity of the barrier, the extent of upstream habitat, and the diversity of species using the stream; with this prioritization as a "first-cut," partners then worked together to select the target barriers and will jointly develop designs. MSB will provide construction oversight and ADF&G will re-survey sites post completion and update the Fish Resource Monitor at <http://gis.sf.adfg.state.ak.us/FlexMaps/fishresourcemonitor.html>.

The site at Neklason Lake and Homebuilt Circle impedes passage to Neklason and other unnamed lakes. These lakes are part of the Cottonwood Creek drainage, located in Wasilla, which supports coho, sockeye, and Chinook salmon. The site currently consists of two undersized culverts. For both culverts, the hydraulic flow of the stream exceeds the capacity of the culverts, acting as a hydraulic barrier to juveniles during certain flows. During site visits, numerous salmonids were visually observed downstream of the undersized culverts. Replacing these culverts will help open up 8 km of stream habitat and 47 ha of lake habitat.

Birch Creek is an important tributary to the Susitna River that supports spawning populations of all five species of Pacific salmon as well as rainbow trout. The Mastodon Road site is located on a large tributary to Birch Creek. The culvert is located just upstream of the confluence and impedes access to over 6.5 km of pristine stream habitat and many hectares of wetland habitat in an undeveloped area with no other crossings or roads. ADF&G Fish Passage program staff found juvenile coho in this tributary in 2016 and it is now included in the Anadromous Waters Catalog. USFWS surveyed the site in the spring of 2020 and used its FishXing model to evaluate passage at the site, finding it

is a barrier to juvenile fish at over 98% of fish passage flows. Fish passage flows encompass the range from estimated summer base flows to approximately ordinary high water or bankfull flows.
from beavers. The blockages restrict access to roughly 5 km of stream habitat and 69 ha of lake habitat.

The MSB Assembly annually approves funds for stream crossing replacement projects. The MSB intends that this locally derived funding be used to leverage additional funding to the maximum amount possible, knowing the need greatly exceeds their ability to provide funding derived from local taxes. This project will use those local funds and AKSSF funds to improve fish passage at these sites.



Figure 2. Photos of Site 20401288 near Neklason Lake showing the hydraulic flow exceeding capacity of the culverts



Figure 3. Photos of Site 20501436 showing the corroded culvert under Beaver Lake Road

3. Locations

- Neklason Lake at Home Built Circle: 61.62734, -149.28349
- Crocker Creek at Settler's Bay Road: 61.51249, -149.62986

Road	Water Body	Salmon Species	Site ID	Length of Stream (km)	Lake Area (hectares)	Action
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Home Built Circle	Neklason Lake	coho, sockeye	20401288	8	47	Replace
Mastodon Road	Birch Creek tributary	Chinook, coho	20501470	6.5	0	Replace
			Total	14.5	47	

VII. Objectives *Revised with Revision #1*

- Restore unimpeded access for salmon and other aquatic species to 8 km of stream and 47 ha of lake habitat by installing a stream simulation culvert at the outlet of Neklason Lake at Home Built Circle
- Restore unimpeded access for salmon to 6.5 km of stream habitat by installing a stream simulation culvert on a tributary of Birch Creek at Mastodon Road

VIII. Methods *Not revised with Revision #1*

Methods will conform to those used at previous successful stream restoration projects throughout the MSB. At each of the selected sites, detailed engineering drawings will be developed and reviewed by the MSB, USFWS, and ADF&G. Upon approval of the engineering design, all permits necessary for the project will be obtained prior to construction. Concurrently, a request for project bids and quotations will be developed from which a contractor will be hired by the MSB. The contractor will remove the existing culvert, install the designed crossing for ecological function to achieve the identified objective, and complete any stream bank stabilization work, if needed. ADF&G and USFWS will carry out site visits during construction and post-project monitoring to determine compliance to the original design plan and document fish utilization of the new culvert. ADF&G will also carry out post-project monitoring to observe re-colonization of areas currently unoccupied by salmon.

All culverts will be designed for ecological function using stream simulation, a method of constructing crossings that mimics natural channel dimensions and processes through the culverted reach in order to restore passage conditions. A variety of guidelines for stream simulation type crossings and ecological function designs have been produced in recent years. This project will follow the guidelines within the U.S. Forest Service Stream Simulation publication *An ecological approach to providing passage for aquatic organisms at road-stream crossings* (USFS 2008) and the USFWS *Culvert Design Guidelines for Ecological Function* (USFWS 2020). Both of these approaches are based on selecting an appropriate reference reach and basing the design on specific measurements taken at the reference reach. The USFWS document provides additional detailed guidance, particularly for fish passage work at lake outlets and in wetland systems.

After construction, ADF&G will survey the sites using its standard criteria for assessing juvenile passage at stream crossings (Eisenman and O'Doherty 2014). ADF&G will post all post-construction monitoring data on the Fish Resource Monitor along with information on the design and construction of the replacement project to aid other practitioners.

IX. Benefits Revised with Revision #1

This project will restore free and clear movement of juvenile salmonids at two crossings in the MSB, reconnecting 14.5 km of stream habitat and 46 hectares of lake habitat. In addition to increasing the overall amount of habitat available to salmon, sizing the culverts to pass debris and sediment as well as water at the 100-year flood will greatly reduce the likelihood of catastrophic road failures and washouts introducing large volumes of sediment into streams. Crossings designed for ecological function and stream simulation are also more stable and less prone to bank scour, channel incision, or sediment accretion at a rate greater than the rest of the channel.

X. Products, Milestones, and Timelines Revised with Revision #1

- March 2023 to December 2023: Select project engineering consultants, complete site survey work, and prepare engineering plans, drawings, and contractor bid package for each site
- January 2024: Initiate project permit reviews (USACE, DNR/OHMP, ADF&G); coordinate project review (ROW, permitting, maintenance, and engineering)
- June 2024 to October 2026: Replace culverts at Neklason Lake and Birch Creek
- November 2025 to November 2026: Carry out post-construction surveys as able; update the Fish Resource Monitor; post information on design and construction on ADF&G's website

XI. Project Budget Revised with Revision #1

MSB Budget	Total
100 Personnel	\$0
200 Travel	\$0
300 Contractual	\$592,000
400 Supplies	\$0
500 Equipment	\$0
Total	\$592,000

MSB Budget Narrative:

Line 300: Contractual (\$592,000)

Partial payment of design and construction contracts for the following culvert replacements:

ADFG #	Road	Water Body	Design	Construction
20401288	Home Built Circle	Neklason Lake	\$74,000	\$222,000
20501470	Mastodon Road	Birch Creek tributary	\$74,000	\$222,000

XII. Match Budget

MSB Match Budget	Total
100 Personnel	\$0

200 Travel	\$0
300 Contractual	\$207,200
400 Supplies	\$0
500 Equipment	\$0
Total	\$207,200

MSB Match Budget Narrative:

Line 300: Contractual (\$207,200):

Partial payment of design and construction contracts for the following culvert replacements:

ADFG #	Road	Water Body	Design	Construction
20401288	Home Built Circle	Neklason Lake	\$26,000	\$78,000
20501470	Mastodon Road	Birch Creek tributary	\$26,000	\$77,200

XIII. References

Eisenman, M., and G.O'Doherty. 2014 Culvert inventory and assessment manual for fish passage in the State of Alaska: A guide to the procedures and techniques used to inventory and assess stream crossings 2009-2014. Alaska Department of Fish and Game, Special Publication No. 14-08, Anchorage.

USFS. 2008. "Stream Simulation: An Ecological Approach to providing passage for aquatic organisms at road-stream crossings." United States Forest Service Stream-Simulation Working Group in partnership with the US Dept of Transportation, Federal Highway Administration Coordinated Federal Lands Highway Technology Implementation Program, National Technology and Development Program, San Dimas, CA.

USFWS 2020. Culvert Design Guidelines for Ecological Function, Revision 5 February 5th, 2020. U.S. Fish and Wildlife Service, Alaska Fish Passage Program.