

USDA NRCS

Valdez Glacier Stream Watershed Plan

Preliminary Investigation Feasibility Report

November 14, 2023

Prepared for the NRCS by:



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JDE Project #: 2301-007

Table of Contents

1.0 Summary 1

2.0 Applicable Agency Authority and Authorized Purposes 2

3.0 Potential for 20% Agricultural (Rural Benefits)..... 4

4.0 Project Overview..... 4

5.0 Proposed Project Purpose and Need Statement 11

6.0 Resource Concerns..... 12

7.0 Opportunities 14

8.0 State, Tribal, Federal Stakeholder Engagement 14

9.0 Potential Alternatives 14

10.0 Facilitating Factors 19

11.0 Obstructing Factors..... 19

12.0 Environmental Document..... 20

13.0 Sponsors..... 20

14.0 Potential Cooperating Agencies..... 20

15.0 Potential Stakeholders..... 21

16.0 Notifications..... 23

17.0 Estimated Project Implementation Timeline..... 23

18.0 Recommendation..... 24

19.0 References 25

Appendices

- Appendix A. Sponsor Letter of Request
- Appendix B. Preliminary Environmental Evaluation (CPA-52)
- Appendix C. WS-4 – PIFR Sponsor Declaration Form

Figures

Figure 2-1. Project Watershed Overview Map 2

Figure 4-1. Map of Project Area..... 5

Figure 4-2. Satellite Imagery of Valdez Glacier Stream from (a) 2007 and (b) 2021 (Google Earth 2022) 6

Figure 4-3. Existing and Planned Infrastructure Map..... 7

Figure 9-1. Alternative 2 Proposal Map 15

Tables

Table 1-1. Alternatives Considered to Address the Purpose and Need 1

Table 2-1. NRCS’s National Watershed Program Manual Criteria Questions 3

Table 2-2. Which authorized purposes will the project address? 3

Table 2-3. Will there be benefits or effects to the public? 3

Table 2-4. Will the project take place in a Special Designated Area? 4

Table 4-1. Project Overview 4

Table 4-2. Preliminary Resource Information 8

Table 4-3. Resources of Special Concern 9

Table 6-1. Resource Concerns: SWAPA + Energy + Human 12

Table 6-2. Resources of Special Concern 13

Table 9-1. Estimated value of existing infrastructure 16

Table 9-2. Alternatives Summary 17

Table 9-3. Summary of Economic Analysis 18

Table 14-1. Cooperating Agency Contact Information and Type of Involvement 21

Table 15-1. Stakeholders at the PIFR Stage 22

Table 16-1. Entity and Date of Notification 23

Table 17-1. Estimated Project Timeline 23

1.0 Summary

The City of Valdez is a federally recognized local government entity who will serve as sponsor for the proposed Watershed Plan, located in Valdez, Alaska. Located on the outwash plain of the Valdez Glacier, the City of Valdez is in a unique geographic and geologic location. An average of about 63 feet of the Valdez Glacier Stream bank is eroding every year due to biannual glacier outburst flooding. The outburst flooding typically occurs in June and again in September or October. Important city and private infrastructure at risk of flooding and erosion due to the ongoing flood outbursts include Haul Road, the Valdez landfill, existing erosion control structures, the Richardson Highway bridge, and other privately owned entities (i.e., gravel quarries).

The proposed Watershed Plan area is the Valdez Glacier Stream Hydrologic Unit Code (HUC) 12 Subwatershed (190202010805); the total watershed area is approximately 11,204 acres. The primary authorized PL-566 project purpose is Flood Prevention (flood damage reduction), with a secondary purpose of Watershed Protection. Resource concerns in the watershed include increased risk of flooding damage to infrastructure with associated risks to human health and safety and capital investment, soil erosion, potential soil contamination, water quality degradation, and impacts to aquatic habitats.

The following four alternatives were evaluated to address the project purpose and need: No Federal Action, Structural, Non-structural, and Removal of Monetary and Regulatory Constraints. The alternatives are summarized in Table 1-1.

Table 1-1. Alternatives Considered to Address the Purpose and Need

Alternative	General Description
Alternative 1 - No Federal Action	No federally funded project measures implemented; existing system infrastructure not upgraded.
Alternative 2 - Structural	Construct 1.8 miles of new revetment along the west riverbank and rehabilitate 0.6 miles of existing revetment along Haul Road to set flood water bounds and stabilize the bank.
Alternative 3 – Non-structural	Relocate the Valdez landfill.
Alternative 4 – Removal of Monetary and Regulatory Constraints	None identified.

Alternative 2 appears to meet the eligibility requirements for PL-566 funding and does not have apparent insurmountable obstacles.

2.0 Applicable Agency Authority and Authorized Purposes

This section provides documentation that the project is eligible for federal assistance and will meet statutory requirements.

The proposed Watershed Plan area includes all the land and water within the confines of the Valdez Glacier Stream Hydrologic Unit Code (HUC) 12 Subwatershed (190202010805) that contains the area of concern; the total watershed area is approximately 11,204 acres. The Valdez Glacier Stream drains into Port Valdez of the Valdez Arm of the Prince William Sound. The Watershed Plan Area is shown in Figure 2-1.

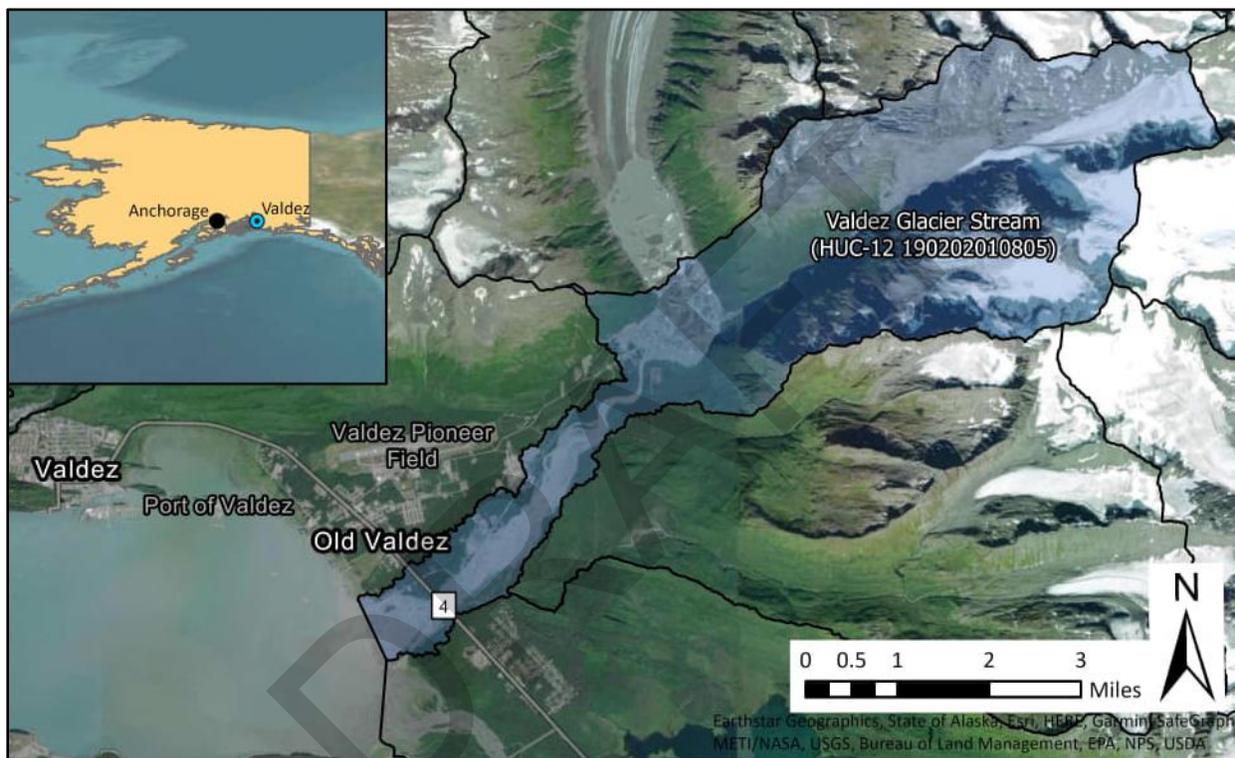


Table 2-1. NRCS’s National Watershed Program Manual Criteria Questions

Program Criteria	Response:	
Will the project area exceed 250,000 acres in size? ^{1,2}	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
If over 250,000 acres will it be divided into sub-watersheds in one plan?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Potential Project Area Size:	200 acre	
Will any single structure provide more than 12,500 acre-feet of floodwater detention capacity, or have 25,000 acre-feet of total capacity?	<input type="checkbox"/> YES ³	<input checked="" type="checkbox"/> NO
How many recreational developments will be included in the project area?		
One development in a project area less than 75,000 acres	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Two developments in a project area between 75,000 and 150,000 acres	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Three developments in a project area greater than 150,000 acres	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

1- For specific appropriations, the 250,000 acres is waived except for watershed projects with the flood prevention purpose.

2- Watersheds exceeding 250,000 acres can be broken up into smaller sub-watersheds.

3- The project will not meet the statutory requirements.

Table 2-2. Which authorized purposes will the project address?

(Indicate only one purpose as primary):

Authorized Purposes:	Primary	Other
Flood prevention	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Watershed Protection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Recreation	<input type="checkbox"/>	<input type="checkbox"/>
Public Fish and Wildlife	<input type="checkbox"/>	<input type="checkbox"/>
Agricultural Water Management	<input type="checkbox"/>	<input type="checkbox"/>
Municipal or Industrial Water Supply	<input type="checkbox"/>	<input type="checkbox"/>
Water Quality Management	<input type="checkbox"/>	<input type="checkbox"/>

Table 2-3. Will there be benefits or effects to the public?

Will the project produce substantial benefits to the general public, to communities, and to groups of landowners?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO ¹
Can the project be installed by individual or collective landowners under alternative cost-sharing assistance?	<input type="checkbox"/> YES ¹	<input checked="" type="checkbox"/> NO
Will the project have strong local citizen and sponsor support through agreements to obtain land rights, permits, contribute the local cost of construction, and carry out operation and maintenance.	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO ¹

1- The project will not meet the statutory requirements.

Table 2-4. Will the project take place in a Special Designated Area?

Special Designated Area	Within the designated area?
Appalachia	<input type="checkbox"/>
Delaware River Basin	<input type="checkbox"/>
Susquehanna River Basin	<input type="checkbox"/>
Tennessee Valley	<input type="checkbox"/>

3.0 Potential for 20% Agricultural (Rural Benefits)

The population of Valdez, Alaska, is about 3,985 people (U.S. Census Bureau 2020). Valdez is in the Chugach Census Area within the Unorganized Borough of Alaska, which has an approximate population of 6,874 people (U.S. Census Bureau 2022). The project and anticipated benefits would be within a rural area per the U.S. Census Bureau and the NRCS National Watershed Program Manual (NWPM; NRCS 2015), as the relevant community has a population of less than 50,000. All project benefits would qualify as rural benefits and would count toward the 20 percent agricultural (rural) benefit requirement.

4.0 Project Overview

4.1 Project Setting

The City of Valdez is a federally recognized local government entity in Alaska. The City of Valdez is situated on the outwash plain of the Valdez Glacier which presents unique geographic and geologic conditions. The project area's local climate is subarctic, with average temperatures ranging from approximately 12°F in January to 60°F in July. Precipitation in the area averages 61.4 inches per year, with a total average snowfall of 223.0 inches (Western Regional Climate Center 2023). Table 4-1 and Figure 4-1 provides an overview of the project area.

Table 4-1. Project Overview

Project Information	Response
Proposed Project Name	Valdez Glacier Stream Watershed Plan
State	Alaska
Borough/Census Area	Chugach Census Area
Congressional District	AK-1
General Coordinates of the Watershed	61.12°, -146.22°
Potential Project Area - Size	200 acres

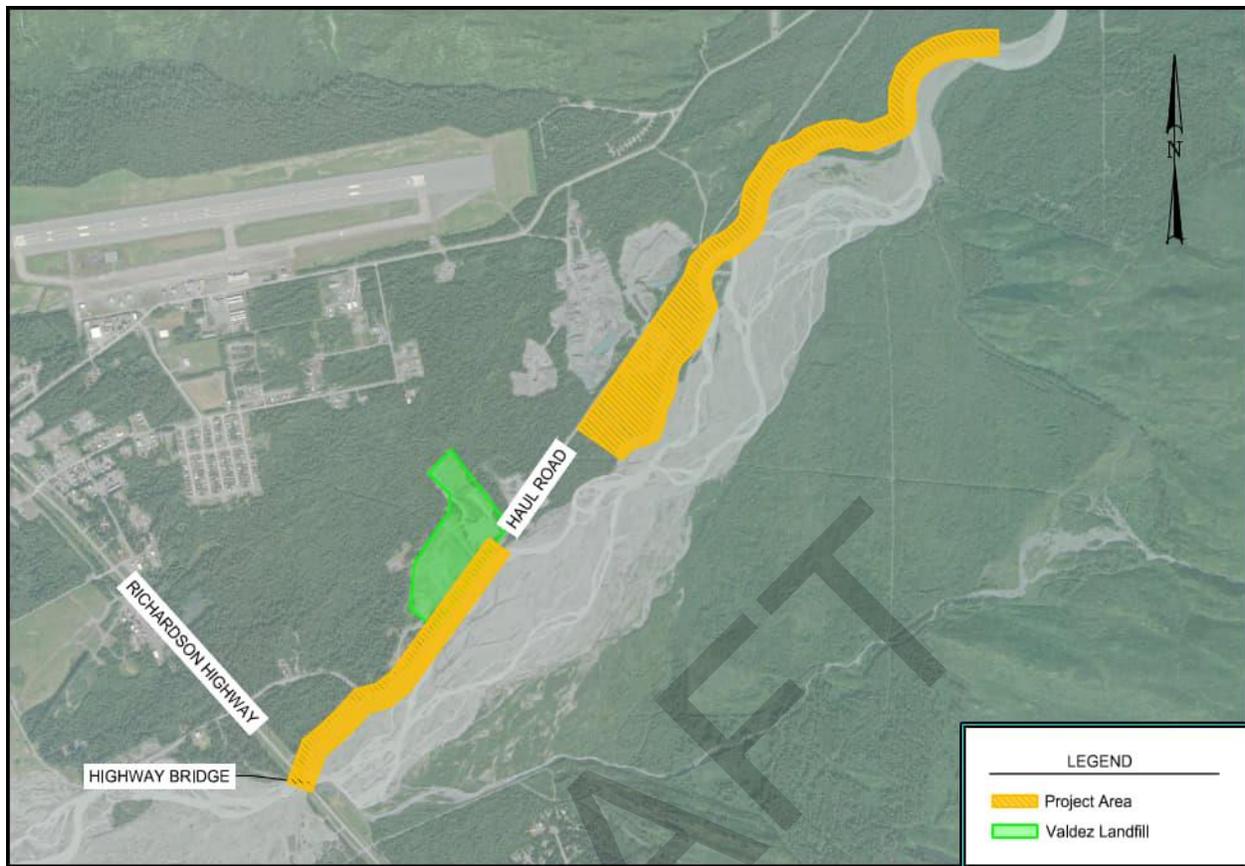


Figure 4-1. Map of Project Area

The Sponsor’s request letter (Appendix A) expresses a need for erosion protection along the Valdez Glacier Stream. In 2007, the U.S. Army Corps of Engineers wrote an Erosion Information Paper for Valdez that mentions potential erosion along the Valdez Glacier Stream as well as along Mineral Creek and Lowe River. Concerns about Mineral Creek and Lowe River were not mentioned in the request letter or in meetings with the Sponsor; therefore, the project area for this study is limited to the Valdez Glacier Stream.

The project area is subject to outburst flooding originating from an ice-dammed lake formed by the Valdez Glacier. Typically, the outburst flooding occurs twice a year in late spring (June) and in the fall (September or October). Estimated peak flow rates in 2017 and 2018 were 15,000 cubic feet per second (cfs) and 34,000 cfs, respectively (State of Alaska Department of Natural Resources Division of Mining, Land and Water 2023). These flood events are the primary source of erosion within the project area.

The USACE (2007) wrote an Erosion Information Paper for Valdez, which states:

“City staff estimates 2 feet per year is eroded from non-storm-related activities. The stream channel changes frequently because it carries a heavy bed load of glacial material which fills the stream bed and causes the channel to shift. Erosion caused by outburst flooding from

Valdez Glacier in 2002 resulted in a channel change, and it flowed into gravel pits on the west side of the floodplain adjacent to the city landfill. The natural stream flow, as well as flooding, ice jams, and glacier lake outbursts contribute to erosion. Four storm events in the last 6 years resulted in considerable erosion along the stream. Glacier Stream Road was breached during a 2001 flood. A 2003 flood resulted in a channel shift and now the stream flows along the toe of Glacier Stream Road.”

In recent years, the stream path appears to be moving west, with minimal erosion occurring on the east bank. The amount of erosion is highly variable along the channel and from year to year. The amount of lateral (across the stream) erosion that occurred between 2007 and 2019 varied from about 280 feet to 840 feet depending on location and measurement alignment (Figure 4-2). One area downstream of the Richardson Highway Bridge experienced nearly 500 feet of erosion over the course of 4 years. Lateral erosion was estimated by averaging bank movement measurements from 14 randomly selected locations over time, resulting in an average of approximately 63 feet per year. Corresponding longitudinal erosion along Haul Road (Glacier Stream Road) since 2007 is approximately 1,300 feet, or 87 feet per year.



Figure 4-2. Satellite Imagery of Valdez Glacier Stream from (a) 2007 and (b) 2021 (Google Earth 2022)

Ongoing erosion poses a risk to infrastructure along the Valdez Glacier Stream. Of particular significance is the potential erosion and subsequent loss of the Valdez landfill, which contains domestic solid waste and construction and demolition materials including asbestos. Other concerns include the risk of undermining Haul Road, flanking existing erosion control structures, and destabilizing the Richardson Highway and Richardson Highway Bridge. Over the past decade, various projects have been initiated to address and mitigate these concerns along the Valdez Glacier Stream as shown in Figure 4-3.

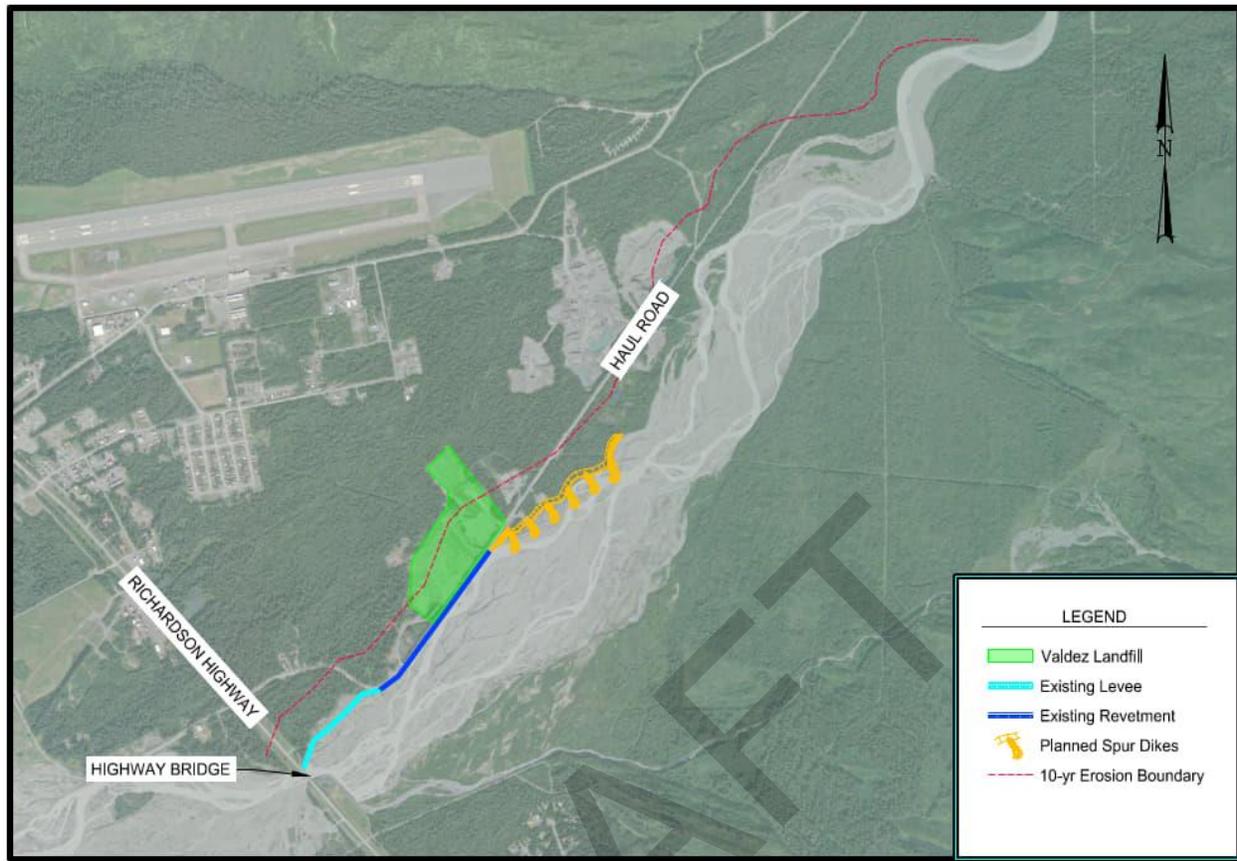


Figure 4-3. Existing and Planned Infrastructure Map

(Note the 10-yr erosion boundary is based on an average erosion rate of 62 feet per year.)

A levee was constructed along the east bank upstream of the Richardson Highway Bridge prior to 2007. Around 2017 and 2018, a levee and spur dikes were constructed along the west bank downstream of the Richardson Highway Bridge. By 2019, approximately 0.3 miles of levee and 0.7 miles of revetment were constructed along the west bank and Haul Road upstream of the Richardson Highway Bridge. The revetment ends just north of the landfill. Since construction, portions of the revetment along Haul Road adjacent to the landfill have deteriorated. Valdez City has experienced excessive operating and maintenance costs attempting to keep Haul Road accessible.

There is a planned improvement project to construct six spur dikes upstream of the landfill on the west bank. The intent of the project is to direct flows away from Haul Road and the Valdez landfill. Between 2019 and 2021, the river moved away from the bank near the proposed location of the first spur dike. The planned improvement project will use this location as the existing limit of lateral erosion for the first of the six spur dikes. If the river returns and continues to erode the west bank, it is estimated the planned spur dikes could be flanked in as little as 2 to 5 years.

Flanking of the spur dikes could jeopardize Haul Road and the landfill. Ongoing erosion may lead to the potential loss of both existing and planned levees, dikes, revetments, and other infrastructure, ultimately posing a threat to the Richardson Highway and bridge. Additional utilities (e.g., water, sewer), assumedly using the Richardson Highway corridor, may also be at risk. In addition to public infrastructure, continued erosion could impact the private gravel quarry industry west of Haul Road. One gravel quarry east of Haul Road and the landfill has already been lost to bank erosion.

Table 4-2. Preliminary Resource Information

Resource	Project Information
Soils	<p>Soil data is unavailable for the watershed area (NRCS 2023). However, construction photos along the Valdez Glacier Stream generally indicate gravel, sediment, and silt compose the soils in the area (NRCS 2021). The Valdez Glacier Stream is migrating towards Haul Road, private gravel quarries, and the Valdez landfill, construction, and demolition pits due to bank erosion caused by the spring and fall flooding outbursts.</p> <p>Various chemicals wasted at the landfill are separated by a liner system. If the liner system becomes compromised by erosion, chemicals would have potential of being released into adjacent soils once outburst flows ended and the stream bed becomes dry.</p>
Water	<p>The Valdez Glacier Stream has not been assessed for water quality parameters (EPA 2023a). Heavy sediment loads naturally occur during spring and fall flooding outbursts. Streambank sediment loads are transported into surface water. Pollutants from the landfill may be transported to surface waters if inundated or exposed by flood waters.</p>
Air	<p>There are no federally designated Class 1 areas in the watershed area. The Chugach Census Area is not designated as a non-attainment area for any criteria pollutants (EPA 2023b).</p>
Plants	<p>A variety of plant species are found in the landscape including trees, shrubs, grasses, and forbs. There are no noted concerns with plants in the watershed.</p>
Animals	<p>Port Valdez supports numerous fish and wildlife species, including anadromous fish and waterbirds. Municipal and construction waste from the Valdez landfill, construction, and demolition pits could erode and transport waste to Port Valdez through flooding outbursts where it could impact fish and wildlife.</p>
Energy	<p>There are no known energy resources or concerns within the watershed.</p>
Demographics	<p>Within the Chugach Census Area, up to 80 percent of the population identify as white with 20 percent of the population identifying as people of color (minority). Up to 7 percent identify as Hispanic, 4 percent identify as American Indian, and 2 percent as Black. Up to 18 percent of the population is considered low-income. Approximately 97 percent of the population has a high school education. The average per capita income is \$44,282 and unemployment is at 4 percent (EPA 2023c). The watershed is located within a “Non-subsistence Use Area” (Alaska</p>

Resource	Project Information
	<p>Department of Fish and Game 2023a). The highest percentages for employment for the City of Valdez are generated from the local government and visitor industry at 12 percent, with oil industry and seafood industry at 11 percent (City of Valdez 2023).</p> <p>Haul Road, private gravel quarries, and the Valdez landfill, construction, and demolition pits are being threatened by flood water outbursts that present risks to economic security and human health and safety. Capital requirements will increase due to infrastructure damage or loss. Haul Road, the private gravel quarries, and the Valdez landfill, construction, and demolition pits are at risk of damage and loss from flood water outbursts. Community livelihood and opportunities are at risk if the landfill, construction, and demolition pits are rendered unusable or water becomes contaminated from flooding. Access and protection of private gravel quarries and the Valdez landfill, construction, and demolition pits is critical to the operations and livelihood of the community.</p>
Transportation	<p>The Richardson Highway (Alaska Route 4) and Haul Road are important routes within the project area. The Valdez Glacier Stream is crossed by Richardson Highway and paralleled on the west by Haul Road. Utilities such as power and communication lines also cross the project area. Valdez Airport is within 0.5 miles northwest of the proposed project area. Ongoing erosion would undermine Haul Road.</p>
Recreation	<p>The Valdez community is known for recreational opportunities. The area offers fishing, hiking, glacier guides and tours, biking, kayaking, and more (City of Valdez 2023). An existing bike path crosses the Valdez Glacier Stream and runs parallel to the Richardson Highway. The Glacier Campground is within 0.5 miles northwest of the proposed project area.</p>

Table 4-3. Resources of Special Concern

Resources of Special Concern	Initial Anticipated Effects
Clean Water Act	<p>The Valdez Glacier Stream and the adjacent wetlands are likely jurisdictional waters of the U.S. Any proposed project activities occurring within the channel or wetlands may require permitting and mitigation with the USACE under Section 404 of the Clean Water Act. Implementation of a stormwater pollution prevention plan (SWPPP) would be required for new project ground disturbances over 1 acre in compliance with Section 402 of the Clean Water Act.</p>
Clean Air Act	<p>The Chugach Census Area is not designated as a non-attainment area for any criteria pollutants. Temporary emissions may occur during project implementation. City staff report asbestos as being present in the construction and demolition pit.</p>

Resources of Special Concern	Initial Anticipated Effects
Coastal Zone Management	NA. Alaska does not participate in the National Coastal Management Program Under the Coastal Zone Management Act.
Coral Reefs	NA
Cultural Resources	Based on review of the National Register of Historic Places (NPS 2023a), no historic properties were identified within the proposed watershed area. There may be cultural resources and historic properties present within the project area. The SHPO or THPO would be consulted during the planning process.
Endangered & Threatened Species	<p>The watershed area was reviewed in the U.S. Fish and Wildlife Service’s (USFWS) Information for Planning and Consultation (IpaC) database (USFWS 2023a). The following federally listed species were identified as having the potential to be impacted by activities within the watershed area:</p> <ul style="list-style-type: none"> • Short-tailed Albatross (<i>Phoebastria (=Diomedea) albatrus</i>) – Endangered <p>There are no critical habitats within the watershed.</p> <p>The State of Alaska Endangered Species List currently includes the following:</p> <ul style="list-style-type: none"> • Short-tailed albatross (<i>Phoebastria albatrus</i>) • Eskimo curlew (<i>Numenius borealis</i>) • Blue whale (<i>Balaenoptera musculus</i>) • Humpback whale (<i>Megaptera novaeangliae</i>) • Right whale (<i>Eubalaena japonica</i>) <p>The watershed area is outside the known range of these state-listed species (Alaska Department of Fish and Game 2023b).</p> <p>Impacts to listed species are unknown at this stage of planning. Surveys and mitigation may be required to comply with the Endangered Species Act.</p>
Environmental Justice	The watershed area is within a Census tract that is identified as partially disadvantaged (CEQ 2023). The project is intended to benefit the affected minority and low-income population in Valdez.
Essential Fish Habitat	Essential fish habitat occurs immediately downstream of the watershed, in Port Valdez where the Valdez Glacier Stream outlets (NOAA 2023). Project activities are not anticipated to occur within the mapped habitat, yet habitat could be affected by Valdez Glacier Stream flood outbursts.
Floodplain Management	Portions of the watershed have been mapped by the Federal Emergency Management Administration as Flood Zones A, AE, and X. The project is located within the regulatory floodway (FEMA 2023). The project is intended to maintain current floodplain management by stabilizing the banks of the channel.
Invasive Species	Invasive species are not known to occur within the Valdez community or watershed area.

Resources of Special Concern	Initial Anticipated Effects
Migratory Birds/Bald & Golden Eagle Protection Act	During the sponsor kickoff meeting held on July 20, 2023, city staff reported seeing eagle nests along the Valdez Glacier Stream. Other migratory birds that may be present in the watershed area were identified in the IPaC system and include the black oystercatcher (<i>Haematopus bachmani</i>), common loon (<i>Gavia immer</i>), tufted puffin (<i>Fratercula cirrhata</i>), and short-billed dowitcher (<i>Limnodromus griseus</i>) (USFWS 2023a). Migratory birds in the area could be impacted by project activities, but use of the project area is likely limited by the disturbance associated with human occupancy.
Natural Areas	According to the U.S. Geological Survey Protected Area Database, there are no identified natural areas within the watershed area (USGS 2023).
Prime and Unique Farmlands	There are no classified farmlands within the watershed area (NRCS 2023).
Riparian Area	The riparian area associated with the Valdez Glacier Stream is eroding.
Scenic Beauty	The project area has been developed with roads, gravel quarries, and landfill, construction, and demolition pits, which create a visual contrast with the natural landscape.
Wetlands	Based on a review of aerial imagery and National Wetlands Inventory data (USFWS 2023b), wetlands appear to occur within the watershed near the confluence of Valdez Glacier Stream and Port Valdez, but do not appear to occur within the channel and floodplain of the stream where project activities would occur.
Wild and Scenic Rivers	Wild and scenic rivers do not occur within or downstream of the watershed area (National Wild and Scenic Rivers System 2023). Nationwide Rivers Inventory segments do not occur within or downstream of the watershed area (NPS 2023b).

5.0 Proposed Project Purpose and Need Statement

Erosion and flooding of the Valdez Glacier Stream pose a significant threat to several critical assets, including the Valdez landfill, Haul Road, erosion control infrastructure (both existing and planned), and the Richardson Highway, bridge, and associated utilities. These assets are at risk of damage or total loss. The project is needed to reduce the risk of flood damage and reduce the potential for contamination of water and soil in the watershed.

The primary authorized PL-566 purpose is Flood Prevention (Flood Damage Reduction) to reduce the risk of flood damage to the Valdez landfill and other infrastructure. A secondary purpose for the project is Watershed Protection, to reduce the movement of pollutants caused by flood damage to the landfill.

6.0 Resource Concerns

This section summarizes the resource concerns that may be affected by implementation of the proposed project. For additional details, see the CPA-52 in Appendix B.

Table 6-1. Resource Concerns: SWAPA + Energy + Human

	Alt 1 – No Federal Action: No federally funded project measures implemented.	Alt 2 –Structural: Construct 1.8 miles and rehabilitate 0.6 miles of revetment along Valdez Glacier Stream to set flood water bounds and stabilize the west riverbank.	Alt 3 – Non-structural: Relocate the Valdez landfill.	Alt 4 – Removal of Monetary and Regulatory Constraints: None identified.
Soil	-	+	-/+	NA
Water	-	+	-/+	NA
Air	0	0	0	NA
Plants	0	0	0	NA
Animals	-	+	+	NA
Energy	0	0	0	NA
Human	-	+	-/+	NA

Table inputs: (+) = Positive Impact; (-) = Negative Impact; (0) = No Impact; (NA) = Not Applicable

Table 6-2. Resources of Special Concern

	Alt 1 – No Federal Action	Alt 2 –Structural	Alt 3 – Non-structural	Alt 4 – No Constraints
Clean Air Act	0	0	0	NA
Clean Water Act/Waters of the U.S.	-	+/-	0	NA
Coastal Zone Management	NA	NA	NA	NA
Coral Reefs	NA	NA	NA	NA
Cultural Resources/Historic Properties	0/-	0	0/-	NA
Endangered & Threatened Species	-	0/-	0/-	NA
Environmental Justice	-	+	+	NA
Essential Fish Habitat	-	+	+	NA
Floodplain Management	-	+	-	NA
Invasive Species	0	0	0	NA
Migratory Birds/Bald and Golden Eagle Protection Act	0	0/-	0/-	NA
Natural Areas	0	0	0	NA
Prime and Unique Farmlands	NA	NA	NA	NA
Riparian Area	-	-/+	-	NA
Scenic Beauty	0	0	0	NA
Wetlands	0	0/-	0/-	NA
Wild and Scenic Rivers	NA	NA	NA	NA

Table inputs: (+) = Positive Impact; (-) = Negative Impact; (0) = No Impact; (NA) = Not Applicable

7.0 Opportunities

There are opportunities to address issues with bank stability, water quality, aquatic habitat, human health and safety, and capital investment within the watershed. Bank stabilization measures would reduce or eliminate erosion of the Valdez Glacier Stream embankment, which would benefit soil stability, water quality, and aquatic habitat by reducing erosion and preventing pollutants from being transported downstream during flooding outbursts. Bank stabilization would also reduce risks to infrastructure, human health and safety, and capital investment.

Alternately, relocation of the Valdez landfill would not address soil stability concerns but would provide opportunities to benefit water quality and aquatic habitats by removing pollutant sources before they are exposed and transported downstream. Relocation of the Valdez landfill would present opportunities to reduce the risk to important infrastructure and human health and safety and would reduce the need for investment of capital.

8.0 State, Tribal, Federal Stakeholder Engagement

A virtual stakeholder meeting was held on June 20, 2023, to discuss the project with the sponsor and project stakeholders. The meeting was attended by NRCS representatives, City of Valdez representatives, and Jones and DeMille Engineering staff. A list of meeting attendees is shown in Table 8-1.

Table 8-1. Stakeholder Meeting Attendees

Sponsor Representatives		
Scott Benda	Kate Huber	Bruce Wall
Natural Resources Conservation Service (NRCS)		
Brett Nelson		
Jones and DeMille Engineering (JDE)		
Ricky Anderson	Darin Robinson	Jared Barton
Michael Rasmussen	Kade Flake	

9.0 Potential Alternatives

9.1 Alternative 1 – No Federal Action

Alternative 1 considers if no federal action were taken; there would be no federally funded project measures implemented. This alternative would not meet the project’s purpose and need. Human health and safety, infrastructure, water quality, and aquatic habitats would continue to be at risk of flood damage and contamination.

9.2 Alternative 2 – Structural

Alternative 2 considers structural measures to address the impacts of riverbank erosion. Approximately 9,750 feet (1.8 miles) of new revetment would be constructed along the west bank of the Valdez Glacier Stream and approximately 3,175 feet (0.6 miles) of existing revetment would be rehabilitated along Haul Road. The project area would cover approximately 200 acres. The new revetment would be tied into the north end of the currently planned spur dikes and would establish a rigid boundary for the west bank of the river (see Figure 9-1). This alternative would provide protection to Haul Road, the landfill, gravel extraction operations, existing erosion control structures (levee and spur dikes), and the Richardson Highway and bridge. This alternative would be expected to reduce O&M costs on Haul Road and adjacent facilities affected by erosion.

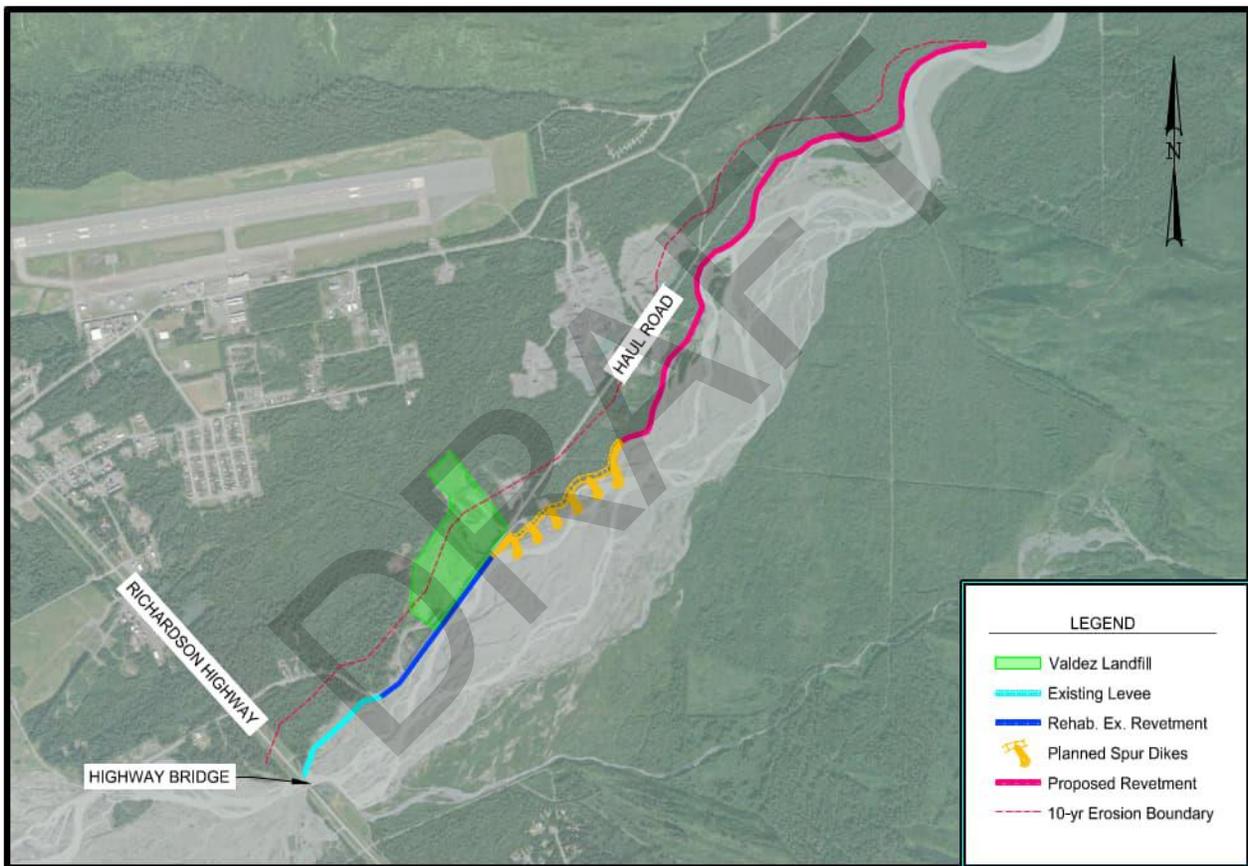


Figure 9-1. Alternative 2 Proposal Map

9.2.1 Preliminary Economic Feasibility

Project costs were estimated using the values for the training dike completed downstream of the Richardson Highway bridge in 2018 (NRCS 2021). The training dike had an average cost of \$750 per linear foot (adjusted for inflation to year 2023). It is assumed the revetment rehabilitation costs would also be \$750 per linear foot. This cost is assumed to encompass all the work required for the proposed

project. Given a revetment length of 9,750 feet and a rehabilitation length of 3,175 feet, the estimated Alternative 2 construction cost is \$9,694,000.

Benefits for the project would be realized from the reduction of erosion damage to the Valdez landfill, Haul Road, existing erosion protection structures, and the Richardson Highway and bridge. All infrastructure included in the alternative are assumed to be a total loss over a 50-year period if no action is taken. The existing erosion protection structures were valued at the cost of replacement, which was assumed to be equal to the cost of the new revetment. Infrastructure values are taken from the Erosion Exposure Assessment of Infrastructure in Alaskan Coastal Communities report (Buzard et al. 2021) and adjusted for inflation to year 2023. Benefits are summarized in Table 9-1.

Table 9-1. Estimated value of existing infrastructure

Item Description	Unit	Estimated Quantity	Unit Value	Value
Landfill	LS	1	\$1,000,000	\$1,000,000
Spur Dikes	L.F.	1,750	\$750	\$1,310,000
Revetment	L.F.	2,080	\$750	\$1,560,000
Dirt Road	L.F.	6,800	\$450	\$3,060,000
Richardson Highway	L.F.	3,000	\$900	\$2,700,000
Richardson Highway Bridge	L.F.	240	\$11,250	\$2,700,000
Total Estimated Value				\$12,330,000

This preliminary analysis demonstrates Alternative 2 is likely to have a benefit-cost ratio of at least 1.3:1 based on the assumptions made. The benefit-cost ratio would be expected to increase if reduced damage values are expanded to include cleanup costs and environmental impacts of landfill waste being washed into the Valdez Glacier Stream and Port Valdez. Although these results are conceptual, it is assumed justifying a federal investment would not be an insurmountable obstacle to implementing Alternative 2.

9.3 Alternative 3 – Non-structural

Alternative 3 considers non-structural measures to reduce the risk of landfill flood damage. This alternative would consist of relocating the Valdez landfill. However, this alternative is not expected to garner community support, and there may be difficulty in finding a suitable relocation site.

9.3.1 Preliminary Economic Feasibility

Estimated costs for this alternative are based on similar projects and data found in documents provided by the NRCS. The estimated cost for constructing a new landfill is approximately \$1,130,000. This value is taken from the Erosion Exposure Assessment of Infrastructure in Alaskan Coastal Communities report (Buzard et al. 2021) and adjusted for inflation to year 2023. The cost for reclamation of the old landfill, including relocating existing landfill waste to the new landfill, is roughly estimated at \$1,130,000. The total estimated cost for this alternative is \$2,260,000. These costs were assumed to encompass all the work required for each proposed measure.

Benefits for the project would be realized from the elimination of erosion damage to the Valdez landfill. The existing landfill was valued at the cost of replacement, which is approximately \$1,130,000. The results of this analysis demonstrate Alternative 3 has a benefit-cost ratio of about 0.5:1. It is unknown whether including the value of reduced cleanup costs and environmental impacts from landfill waste entering the Valdez Glacier Stream and Port Valdez would result in a benefit-cost ratio exceeding 1:1.

9.4 Alternative 4 – No Constraints

There was no alternative without constraints identified that would provide additional benefits over Alternative 2, which is believed to be feasible and adequate for the sponsor’s needs. Therefore, a No Constraints alternative was not considered.

9.5 Alternatives Summary

Table 9-2 summarizes the potential impacts of each alternative.

Table 9-2. Alternatives Summary

Alternatives	Possible Positive Impacts and Effects	Possible Adverse Impacts and Effects
<p>Alternative 1 – No Federal Action</p>	<ul style="list-style-type: none"> • No positive impacts 	<ul style="list-style-type: none"> • Continued erosion of riverbank and riparian area and increased risk of impacts to community infrastructure, including the Valdez landfill • Continued risk to human health and safety as erosion advances towards the Valdez landfill and other infrastructure • Ongoing financial burden on the Valdez community, which may be disadvantaged • Potential contamination of water that provides aquatic habitats, including essential habitat of habitats for listed species • Potential loss of cultural sites if undermined by erosion • Continued movement of the floodplain boundary as banks erode
<p>Alternative 2 – Structural</p>	<ul style="list-style-type: none"> • Reduction or elimination of soil erosion and reduced risk of damage to the Valdez landfill, Haul Road, and other infrastructure • Reduction or elimination of flood risk to human health and safety 	<ul style="list-style-type: none"> • Project may require structural fill within jurisdictional waters • Potential impacts to listed species or migratory birds if they occur in the project area

Alternatives	Possible Positive Impacts and Effects	Possible Adverse Impacts and Effects
	<ul style="list-style-type: none"> Reduction or elimination of risk of water and soil contamination and impacts to aquatic habitats caused by flood damage to the Valdez landfill Reduced financial burden on the Valdez community Stabilization of the floodplain boundary Long-term protection of the riparian area 	<ul style="list-style-type: none"> Riparian area would be temporarily impacted by bank stabilization measures Potential fill within wetlands if they occur within the project area
Alternative 3 – Non-structural	<ul style="list-style-type: none"> Elimination of risk of damage to the Valdez landfill Reduced risk of water and soil contamination and impacts to aquatic habitats caused by flood damage to the Valdez landfill Reduced financial burden on the Valdez community 	<ul style="list-style-type: none"> Continued erosion of riverbank and riparian area and increased risk of impacts to infrastructure such as Haul Road and utilities Continued sedimentation from bank erosion Continued risk to human health and safety and capital investment as erosion advances towards infrastructure Potential loss of cultural sites if undermined by erosion Continued movement of the floodplain boundary as banks erode Potential impacts to listed species or migratory birds from relocation of the landfill
Alternative 4 – No Constraints	No alternative identified.	No alternative identified.

9.5.1 Economic Summary

Conceptual project costs and benefits were estimated for each alternative. The results are summarized in Table 9-3.

Table 9-3. Summary of Economic Analysis

Alternative	Total Project Costs	Project Benefits	Benefit-Cost Ratio (BCR)
Alternative 1 – No Federal Action	-	-	-
Alternative 2 – Structural	\$9,690,000	\$12,330,000	1.3:1
Alternative 3 – Non-structural	\$2,260,000	\$1,130,000	0.5:1
Alternative 4 – No Constraints	NA	NA	NA

Note that the alternatives are conceptual, and all costs and benefits should be considered preliminary. Though there are no project costs associated with Alternative 1, expected damages could reach \$12,330,000 or more if no action is taken over the next 50 years.

10.0 Facilitating Factors

10.1 Alternative 1 – No Federal Action

The facilitating factors for Alternative 1 include the following:

- No investments in infrastructure are required; no sponsor cost-share is required.

10.2 Alternative 2 – Structural

The facilitating factors for Alternative 2 include the following:

- The Sponsor, State of Alaska, and other partners have planned, designed, permitted, and constructed similar projects in the area.
- A site for revetment has been identified.

10.3 Alternative 3 – Non-structural

The facilitating factors for Alternative 3 include the following:

- Low estimated project costs compared to Alternative 2.

10.4 Alternative 4 – No Constraints

No feasible “No Constraints alternative was identified.

11.0 Obstructing Factors

11.1 Alternative 1 – No Federal Action

The obstructing factors for Alternative 1 include the following:

- This alternative does not meet the purpose and need for the project.

11.2 Alternative 2 – Structural

The obstructing factors for Alternative 2 include the following:

- Permitting with the USACE and compensatory mitigation may be required.
- An easement with the State of Alaska Department of Natural Resources Division of Mining, Land and Water may be required.

11.3 Alternative 3 – Non-structural

The obstructing factors for Alternative 3 include the following:

- The community does not support relocation of the landfill.
- A suitable relocation site has not been identified.
- Permitting with the Alaska Department of Environmental Conservation may be required.
- Removal of hazardous waste is not an eligible project measure for PL-566 cost-share; an alternate source of funding would be required for waste removal.

11.4 Alternative 4 – No Constraints

No feasible “No Constraints alternative was identified.

12.0 Environmental Document

The proposed project does not meet the limitations described for any categorical exclusion as stated in 7 CFR Part 650.6. Significant impacts to any resource are not anticipated and the estimated federal construction costs are less than \$25 million, which indicates that a Watershed Plan-EA would likely be the appropriate environmental document for this project. If federal construction costs exceed \$25 million, an EIS would be required.

13.0 Sponsors

The project sponsor is the City of Valdez. A sponsor declaration (WS-4) form is attached as Appendix C. The Sponsor will:

- Assist in the locally led planning effort.
- Obtain needed land rights including the use of power of eminent domain, if necessary.
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs.
- Provide funds for continuing operation and maintenance actions.
- Obtain required permits and approvals at sponsor cost.
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, sponsor will sign a Memorandum of Understanding (MOU) with NRCS.

14.0 Potential Cooperating Agencies

Potential cooperating agencies are listed in Table 14-1.

Table 14-1. Cooperating Agency Contact Information and Type of Involvement

Agency	Contact Information	Type of Involvement
U.S. Army Corps of Engineers (USACE)	Alaska District Headquarters PO Box 6898 JBER, Alaska 99506-0898 (907) 753-2712 regpagemaster@usace.army.mil	Regulatory [X] Informed [X] Prepare permits or letters of permission document [X] Provide input [X]
U.S. Fish and Wildlife Service (USFWS)	Ecological Services Office 1011 East Tudor Road Anchorage, AK 99503 (907) 786-3431	Regulatory [X] Informed [X] Prepare permits or letters of permission document [X] Provide input [X]
National Oceanic and Atmospheric Administration (NOAA)	Alaska Regional Office P.O. Box 21668 709 W. 9 th St., Rm 420 Juneau, AK 99802-1668 (907) 586-7221 alaska.webmaster@noaa.gov	Regulatory [X] Informed [X] Prepare permits or letters of permission document [X] Provide input [X]
Environmental Protection Agency (EPA)	Alaska Operations Office 222 West 7 th Ave. #19 Anchorage, AK 99513-7588 (907) 271-5083	Regulatory [X] Informed [X] Prepare permits or letters of permission document [] Provide input [X]
Federal Emergency Management Agency (FEMA)	Region 10, Alaska Area Office 222 W 8 th Ave Anchorage, AK 99513 (425) 487-4600 FEMA-R10-Info@fema.dhs.gov	Regulatory [] Informed [X] Prepare permits or letters of permission document [] Provide input [X]
Alaska Department of Environmental Conservation Division of Water	Department of Environmental Conservation P.O. Box 111800 Juneau, AK 99811 Water Quality – Anchorage Program Manager: Terri Lomax 907-269-7635 terri.lomax@alaska.gov	Regulatory [] Informed [] Prepare permits or letters of permission document [X] Provide input []

15.0 Potential Stakeholders

Table 15-1 shows the expected project stakeholders in addition to each entity’s likely contribution.

Table 15-1. Stakeholders at the PIFR Stage

Stakeholder	Role	Resources	Contribution
USDA-NRCS	Lead Agency for Plan, FA/TA.	Staff and Funding for Technical Assistance (TA) and Financial Assistance (FA)	Administration of staff for completion of Plan, design, construction.
City of Valdez	Sponsor	Cost-share funds, staff for review	Lead partner in the development of the Plan, acquires permits, project scoping, leads public meetings. Review of construction plans and specifications, design review, construction contract management.
U.S. Army Corps of Engineers (USACE)	Regulatory Agency	Staff for technical reviews	Project and technical reviews
U.S. Fish and Wildlife Service (USFWS)	Regulatory Agency	Staff for technical reviews	Project and technical reviews
National Oceanic and Atmospheric Administration (NOAA)	Regulatory Agency	Staff for technical reviews	Project and technical reviews
Environmental Protection Agency (EPA)	Regulatory Agency	Staff for technical reviews	Project and technical reviews
Federal Emergency Management Agency (FEMA)	Regulatory Agency	Staff for technical reviews	Project and technical reviews
Alaska Department of Natural Resources	Regulatory Agency	Staff for technical reviews	Permitting, technical review, and overall review
Alaska Department of Fish and Game	Regulatory Agency	Staff for technical reviews	Permitting, technical review, and overall review
Alaska State Historical Preservation Office	Regulatory Agency	Staff for technical reviews	Permitting, technical review, and overall review

16.0 Notifications

Table 16-1 shows the entities that will be notified as part of the PIFR. The method and expected date of notification for each agency is also reported.

Table 16-1. Entity and Date of Notification

Entity	Method and Date Notified
State Governor’s Office	Letter – 8/11/2021
U.S. Fish and Wildlife Service	Letter – 8/11/2021
National Oceanic Atmospheric Administration National Marine Fisheries Service	Letter – 8/11/2021
U.S. Army Corps of Engineers	Letter – 8/11/2021
Federal Emergency Management Agency (FEMA)	Letter – 8/11/2021
U.S. Department of Reclamation Columbia-Pacific Northwest Regional Office	Letter – 8/11/2021

17.0 Estimated Project Implementation Timeline

Table 17-1. Estimated Project Timeline

Project Stage	Estimated Date:
Planning Start	Winter 2024
Planning End	Winter 2026
Design Start	Summer 2026
Design End	Summer 2027
Construction Start	Fall 2027
Construction End	Fall 2028

18.0 Recommendation

This preliminary investigation and feasibility report has been completed and submitted for approval to: Brett Nelson (NRCS)

By:

Name: Ricky Anderson Title: Project Manager Date: _____

Organization: Jones and DeMille Engineering

It has been determined that this potential PL-566 watershed operations project:

Does	Does Not	Determination
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... meet the statutory acreage, volume/capacity of structure and recreational limit requirements;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... meet the requirements of one or more Watershed Operations authorized purposes;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... have the potential for a minimum of 20% agricultural, or rural, benefits;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... have one or more viable alternatives;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... have potential project sponsor(s) that meet and agree to all terms of responsibilities;
<input type="checkbox"/>	<input checked="" type="checkbox"/>	... have apparent insurmountable obstacles.

Preparer Signature

Signature: _____ Date: _____

State Watershed Operations Program Manager

Signature: _____ Date: _____

State Technical Lead (SRC, SCE, Other)

Signature: _____ Date: _____

Check One	Recommendation
<input type="checkbox"/>	Not recommended for planning funding
<input type="checkbox"/>	Accepted and recommended for Planning Funding

State Conservationist

Signature: _____ Date: _____

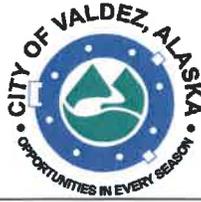
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Appendix A. Sponsor Letter of Request

DRAFT



February 8, 2022

Mr. Alan McBee
State Conservationist
Natural Resources Conservation Service
800 E Palmer-Wasilla Hwy
Suite 100
Palmer, AK 99645

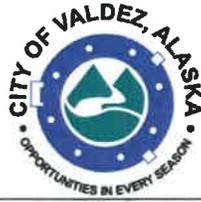
Dear Mr. McBee:

We request NRCS Watershed Program planning assistance for a potential Public Law (PL) 566 project in Valdez, Alaska HUC 10 #19020201 Eastern Prince William Sound. The project would make repairs and improvements to the existing 3000' long, armored roadway bank that is presently protecting our municipal landfill from erosion from the Valdez Glacier Stream. Ideally the project would address future migration of the river towards the landfill upstream of our armored bank. The city of Valdez has been fighting erosion issues along this area of the Glacier Stream for the past 21 years. If the river was to enter into the landfill the damage would be catastrophic. Flood waters would carry out over 40 years of buried garbage downstream into the bay.

We are a local government with a legal interest in or responsibility for the watershed project proposed. We understand, as sponsors of a PL 566 planning effort, that our responsibilities will include:

- Assisting in the locally led planning effort,
- Contributing a share of the project costs, as determined by NRCS, by providing funds or eligible services necessary to undertake the activity,
- Before being credited with the value of any in-kind contributions for in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS,
- Obtaining any necessary real property rights, by eminent domain, if necessary,
- Obtaining any needed water rights, and regulatory permits at the Sponsor's cost,
- Agreeing to provide for any required operation and maintenance of the completed measures.

We look forward to working with NRCS staff to complete a Preliminary Investigation Feasibility Report (PIFR) to provide reasonable assurance that a potential watershed project can be



developed that addresses a PL 566 purpose and that there are no apparent insurmountable obstacles to the completion of that project.

The names, addresses, and telephone numbers of the administrative and technical contact persons in our organization are as follows:

Scott Benda, Senior Project Manager, sbenda@valdezak.gov, 907-835-5478 x4

Bruce Wall, Flood Plain Manager, bwall@valdezak.gov, 907-834-3451

Nate Duval, Capital Facilities Director/Assistant City Manager, nduval@valdezak.gov, 907-835-5478 x1

Rob Comstock, Public Works Director, rcomstock@valdezak.gov, 907-835-4473

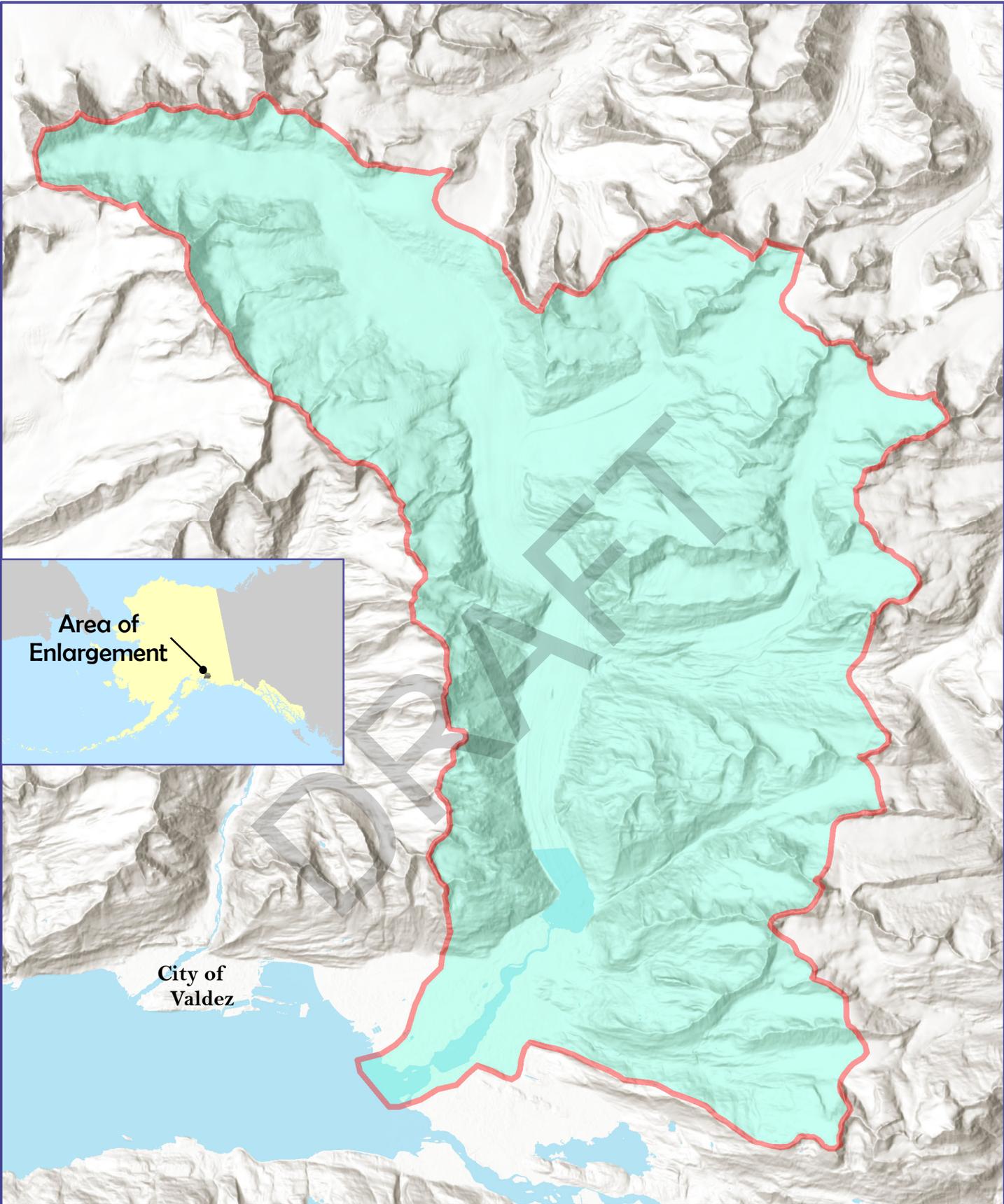
Mark Detter, City Manager, mdetter@valdezak.gov, 907-834-3466

Please contact them for any additional information that you might need in assessing our request.

Sincerely,

Scott Benda, Senior Project Manager

Attached: Valdez Glacier Stream watershed delineated boundary map.



0 2.5 5 Miles

Valdez Glacier Stream Watershed

Date: 2/8/2022



Appendix B. Preliminary Environmental Evaluation (CPA-52)

DRAFT

U.S. Department of Agriculture Natural Resources Conservation Service ENVIRONMENTAL EVALUATION WORKSHEET	NRCS-CPA-52 11/2019	A. Client Name: City of Valdez B. Conservation Plan ID # (as applicable): Program Authority (optional): PL-566
---	------------------------	---

D. Client's Objective(s) (purpose): See Section 5 (Proposed Project Purpose and Need Statement) in the associated PIFR.	C. Identification # (farm, tract, field #, etc. as required): Valdez Glacier Stream Subwatershed (190202010805)
---	---

E. Need for Action: See Section 5 (Proposed Project Purpose and Need Statement) in the associated PIFR.	H. Alternatives			
	No Action ✓ if RMS <input type="checkbox"/>	Alternative 2 ✓ if RMS <input type="checkbox"/>	Alternative 3 ✓ if RMS <input type="checkbox"/>	Alternative 4
	Alternative 1 – No Federal Action No federally funded project measures implemented.	Alternative 2 – Structural Construct 1.8 miles and rehabilitate 0.6 miles of revetment along Valdez Glacier Stream to set flood water bounds and stabilize the west riverbank.	Alternative 3 – Non-structural Relocate the Valdez landfill.	Alternative 4 – Removal of Monetary and Regulatory Constraints None identified.

Resource Concerns
 In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process.
 (See FTG Section III - Resource Planning Criteria for guidance).

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	I. Effects of Alternatives							
	No Action		Alternative 2		Alternative 3		Alternative 4	
	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC

SOIL								
Bank erosion from streams, shorelines or water conveyance channels The streambank is eroding toward Haul Road, private gravel pits, and the Valdez landfill, construction, and demolition pits due to spring and fall flooding outbursts.	Erosion will continue to migrate westward towards Haul Road, private gravel pits and the Valdez landfill, construction, and demolition pit.	<input type="checkbox"/> NOT meet PC	Streambank erosion along Haul Road would be halted.	<input type="checkbox"/> NOT meet PC	Streambank erosion would continue to migrate westward towards Haul Road and private gravel pits.	<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC
Concentration of salts or other chemicals Chemicals associated with municipal and construction waste are disposed of at the Valdez landfill, construction, and demolition pit.	Various chemicals wasted at the landfill are separated by a liner system. If the liner system becomes compromised by erosion, chemicals would have potential of being released into adjacent soils once outburst flows ended and the stream bed becomes dry.	<input type="checkbox"/> NOT meet PC	The risk of soil contamination from erosion damage to the landfill liner would be eliminated.	<input type="checkbox"/> NOT meet PC	The risk of soil contamination from erosion damage to the landfill liner would be eliminated.	<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC

WATER								
Sediment transported to surface water Heavy sediment loads are naturally occurring during spring and fall flooding outbursts. Streambank sediment loads are transported into surface water.	Erosion would continue to migrate westward towards Haul Road, private gravel pits and the Valdez landfill, construction, and demolition pit. Flooding outbursts will continue to transport sediment to surface waters.	<input type="checkbox"/> NOT meet PC	Streambank erosion along Haul Road and the resulting sedimentation would be halted.	<input type="checkbox"/> NOT meet PC	Streambank erosion would continue to migrate westward towards Haul Road and private gravel pits. Flooding outbursts would continue to transport sediment to surface waters.	<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC
Petroleum, heavy metals, and other pollutants transported to surface water Pollutants from the landfill may be transported to surface waters if inundated or exposed by flood waters.	Landfill, construction, and demolition pit flooding could introduce pollutants to surface waters.	<input type="checkbox"/> NOT meet PC	Erosion into the landfill would be halted and waste would not be mobilized into surface waters.	<input type="checkbox"/> NOT meet PC	The risk of surface water contamination from flooding of the landfill would be eliminated.	<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	I. (continued)							
	No Action		Alternative 1		Alternative 2		Alternative 3	
	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	✓ if does NOT meet PC

AIR							
No resource concerns identified.	<input type="checkbox"/>						
PLANTS							
No resource concern identified	<input type="checkbox"/>						

ANIMALS								
Aquatic habitat for fish and other organisms	Erosion from flooding outbursts would continue to move westward to the Valdez landfill, construction, and demolition pit. Municipal and construction waste may be exposed and transported to aquatic habitat.	<input type="checkbox"/>	Streambank erosion towards Haul Road, the Valdez landfill, construction, and demolition pits would be halted. Soils would no longer be at risk of eroding or transporting municipal and construction waste to Port Valdez where it could impact aquatic habitats.	<input type="checkbox"/>	Streambank erosion from flooding outbursts would continue to move westward to Haul Road and the private gravel pits. However, the risk of municipal and construction waste exposure and transport to aquatic habitat would be mitigated.	<input type="checkbox"/>	<input type="checkbox"/>	
Port Valdez supports numerous fish and wildlife species, including anadromous fish and waterbirds. Municipal and construction waste from Valdez landfill, construction, and demolition pit could impact fish and wildlife habitat if flooding outbursts were to erode into these facilities.		NOT meet PC		NOT meet PC		NOT meet PC	NOT meet PC	
ENERGY								
No resource concern identified.		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
Human Economic and Social Considerations								
Risk	Erosion from flood water outbursts will continue to migrate and put the community operations and livelihood at risk.		Streambank erosion towards Haul Road, the Valdez landfill, construction, and demolition pits would be halted. Infrastructure operations would no longer be threatened by stream migration. Haul Road access would remain in tact.		Streambank erosion from flooding outbursts would continue to move westward to Haul Road and the private gravel pits. However, the Valdez landfill, construction, and demolition pit operations would no longer be threatened by stream migration.			
The Valdez Glacier Stream is migrating west and threatening Haul Road, private gravel pits, and the Valdez landfill, construction, and demolition pit. The community is dependent on this infrastructure as part of community operations and livelihood. Haul Road also provides an access alternative to Valdez Glacier Lake.								
Public Health and Safety	Streambank erosion from flood water outbursts would continue to move westward undermining Haul Road making it unsafe to travel. Flooding and exposure of the Valdez landfill, construction, and demolition pit poses risk to public health and safety as pollutants are exposed and transported to water. Public health and safety will be compromised if the landfill, construction, and demolition pit are inaccessible or rendered unusable.		Streambank erosion towards Haul Road, the Valdez landfill, construction, and demolition pits would be halted. Public health and safety concerns related to access, proper sanitation and waste management are mitigated.		Streambank erosion from flood water outbursts would continue to move westward undermining Haul Road and making it unsafe to travel. Public access, health and safety would no longer be compromised with construction of a new landfill and relocation of the old landfill waste.			
The community is dependent on Haul Road, private gravel pits, and the Valdez landfill, construction, and demolition pit to help maintain public health and safety through proper sanitation and waste management. Haul Road provides access for residents and waste haulers.								
Capital	Capital requirements will increase due to infrastructure damage or loss. Haul Road, private gravel pits and the Valdez landfill, construction, and demolition pit are at risk for damage and loss from flood water outbursts. Community livelihood and opportunities are at risk if these features are rendered unusable or water becomes contaminated from landfill, construction, and demolition pit flooding.		Streambank erosion towards Haul Road, the Valdez landfill, construction, and demolition pits would be halted. Capital requirements would decrease. Community livelihood and opportunities are protected.		Capital requirements would increase for Haul Road due to continued streambank erosion. Risk to community livelihood and opportunities are mitigated with a new sanitation facility that is no longer threatened to be inaccessible or unusable. The risk of water contamination from municipal and construction waste exposure would be mitigated.			
Haul Road, private gravel pits, and the Valdez landfill, construction, and demolition pit are important features for the community. These features have been developed to help manage community sanitation needs, maintenance, and improvements.								
Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.								
In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "*" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.								
G. Special Environmental Concerns (Document existing/benchmark conditions)	J. Impacts to Special Environmental Concerns							
	No Action		Alternative 2		Alternative 3		Alternative 4	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
•Clean Air Act Guide Sheet	No Effect	<input type="checkbox"/>	May Affect Temporary emissions during construction; conservation measures would reduce impacts.	<input type="checkbox"/>	May Affect Temporary emissions during construction; conservation measures would reduce impacts.	<input type="checkbox"/>		<input type="checkbox"/>
The Chugach Census Area is not designated as a non-attainment area for any criteria pollutants. Temporary emissions may occur during project implementation. City staff report asbestos as being present in the construction and demolition pit.								
•Clean Water Act / Waters of the U.S. Guide Sheet	No Effect	<input type="checkbox"/>	May Affect Section 404 permitting would likely be required for construction of rock revetment. Streambank erosion along Haul Road would be halted and waste would not discharge into the stream.	<input checked="" type="checkbox"/>	No Effect Relocation of the landfill is not likely to impact wetlands.	<input type="checkbox"/>		<input type="checkbox"/>
The Valdez Glacier Stream and the adjacent wetlands are likely jurisdictional waters of the U.S.								
•Coastal Zone Management Guide Sheet	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>		<input type="checkbox"/>
Do not occur within the watershed area.								
Coral Reefs Guide Sheet	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>		<input type="checkbox"/>
Do not occur within the watershed area.								

<p>●Cultural Resources / Historic Properties Guide Sheet No known sites located within the watershed area. Surveys may identify resources.</p>	<p>May Affect Streambank erosion would continue to move westward and could undermine cultural resources if they occur.</p>	<input type="checkbox"/>	<p>May Affect Cultural resources are unlikely to occur within the active channel where revetment would be constructed.</p>	<input checked="" type="checkbox"/>	<p>May Affect Streambank erosion would continue to move westward and could undermine cultural resources if they occur. Construction of a new landfill could affect cultural resources if they occur. Consultation would be completed in accordance with relevant regulations.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>●Endangered and Threatened Species Guide Sheet The Short-tailed Albatross (<i>Phoebastria (=Diomedea) albatrus</i>) could range in the area. There are no critical habitats within the watershed.</p>	<p>May Affect Erosion from flooding outbursts would continue to move westward to the Valdez landfill, construction, and demolition pit. Municipal and construction waste may be exposed and transported to aquatic habitat.</p>	<input type="checkbox"/>	<p>May Affect Streambank erosion towards Haul Road, the Valdez landfill, construction, and demolition pits would be halted. These public facilities would no longer be at risk of eroding or transporting municipal and construction waste to Port Valdez where it could impact aquatic habitats. Since all potential impacts are undetermined at this stage of the planning process, consultation would be completed in accordance with relevant regulations.</p>	<input checked="" type="checkbox"/>	<p>May Affect Potential impacts are undetermined at this stage of the planning process. Consultation would be completed in accordance with relevant regulations.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Environmental Justice Guide Sheet The watershed area is within a Census tract that is identified as partially disadvantaged (CEQ 2023). The project is intended to benefit the affected minority and low-income population in Valdez.</p>	<p>May Affect Partially disadvantaged community members may be adversely impacted by flooding outbursts.</p>	<input type="checkbox"/>	<p>May Affect Streambank erosion towards Haul Road, the Valdez landfill, construction, and demolition pits would be halted. The partially disadvantaged community members would benefit.</p>	<input type="checkbox"/>	<p>May Affect The construction of a new landfill and relocation of old landfill waste is intended to benefit partially disadvantaged community members.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>●Essential Fish Habitat Guide Sheet Essential fish habitat occurs immediately downstream of the watershed, in Port Valdez where the Valdez Glacier Stream outlets (NOAA 2023). Project activities are not anticipated to occur within the mapped habitat, yet habitat could be affected by Valdez Glacier Stream flood outbursts.</p>	<p>May Affect Erosion from flooding outbursts would continue to move westward to the Valdez landfill, construction, and demolition pit. Municipal and construction waste may be exposed and transported to essential fish habitats in Port Valdez.</p>	<input type="checkbox"/>	<p>May Affect Streambank erosion towards the Valdez landfill, construction, and demolition pits would be halted. Municipal and construction waste would no longer be at risk for exposure or transport to essential fish habitats in Port Valdez. Since all potential impacts are undetermined at this stage of the planning process, consultation with the State Biologist is required.</p>	<input checked="" type="checkbox"/>	<p>May Affect The construction of a new landfill and relocation of old landfill waste removes the threat of contaminant transport to essential fish habitat in Port Valdez.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Floodplain Management Guide Sheet The watershed is mapped by the Federal Emergency Management Administration as Flood Zones A, AE, and X (FEMA 2023).</p>	<p>May Affect Outburst flooding has resulted in a channel change and flowed into gravel pits on the west side of the floodplain adjacent to the Valdez landfill (USACOE 2007). Erosion from flooding outbursts would continue to move westward to the Haul Road, private gravel pits and the Valdez landfill, construction, and demolition pit.</p>	<input type="checkbox"/>	<p>May Affect Streambank erosion towards the Valdez landfill, construction, and demolition pits would be halted. Outburst flooding may still overtop the rock revetment and temporarily pond in private gravel pits and the Valdez landfill, construction, and demolition pit.</p>	<input type="checkbox"/>	<p>May Affect The construction of a new landfill and relocation of old landfill waste removes the threat of contaminate transport through flooding outbursts.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Invasive Species Guide Sheet Invasive species are not known to occur within the Valdez community or watershed study area.</p>	<p>No Effect</p>	<input type="checkbox"/>	<p>No Effect</p>	<input type="checkbox"/>	<p>No Effect</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>●Migratory Birds/Bald and Golden Eagle Protection Act Guide Sheet Migratory birds, including eagles, occur within the watershed area and in or around Valdez. During the sponsor kickoff meeting held on July 20, 2023, City staff reported seeing eagle nests along the Valdez Glacier Stream.</p>	<p>No Effect</p>	<input type="checkbox"/>	<p>May Affect Potential impacts are undetermined at this stage of the planning process, but rock revetment could impact migratory birds if they occur in the area. Consultation would be completed in accordance with relevant regulations.</p>	<input checked="" type="checkbox"/>	<p>May Affect Potential impacts are undetermined at this stage of the planning process, but relocation of the landfill could impact migratory birds if they occur in the area. Consultation would be completed in accordance with relevant regulations.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Natural Areas Guide Sheet There are no identified natural areas within the watershed area.</p>	<p>No Effect</p>	<input type="checkbox"/>	<p>No Effect</p>	<input type="checkbox"/>	<p>No Effect</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Prime and Unique Farmlands Guide Sheet There are no classified farmlands within the watershed area (NRCS 2023).</p>	<p>NA</p>	<input type="checkbox"/>	<p>NA</p>	<input type="checkbox"/>	<p>NA</p>	<input type="checkbox"/>	<input type="checkbox"/>

Riparian Area <i>Guide Sheet</i> The riparian area associated with the Valdez Glacier Stream is eroding.	May Affect The riparian area would continue to be impacted by erosion.	<input type="checkbox"/>	May Affect Rock revetment would temporarily impact riparian areas along the streambank edge during construction. Once installed, the revetment will protect the streambank from erosion and allow for the re-establishment of the riparian area.	<input type="checkbox"/>	May Affect The riparian area would continue to be impacted by erosion.	<input type="checkbox"/>		<input type="checkbox"/>
Scenic Beauty <i>Guide Sheet</i> The project site has been developed with roads, gravel pits, and landfill which creates a visual contrast with the natural landscape. Other rock revetment and spur dikes exist in the area.	No Effect	<input type="checkbox"/>	No Effect The new rock revetment will be a continuation of rock revetment and spur dikes that already exist in the area.	<input type="checkbox"/>	No Effect	<input type="checkbox"/>		<input type="checkbox"/>
Wetlands <i>Guide Sheet</i> Wetlands are mapped within the watershed near the confluence of Valdez Glacier Stream and Valdez Bay.	No Effect	<input type="checkbox"/>	May Affect Rock revetment would be installed within the active river channel where wetlands are not mapped. However, since all potential impacts are undetermined at this stage of the planning process, consultation would be completed in accordance with relevant regulations.	<input checked="" type="checkbox"/>	May Affect Impacts to wetlands from the construction of a new landfill and relocation of old landfill waste is unknown at this stage of the planning process.	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Wild and Scenic Rivers <i>Guide Sheet</i> There are no wild and scenic rivers or Nationwide Rivers Inventory segments within or downstream of the watershed area.	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>		<input type="checkbox"/>
K. Other Agencies and Broad Public Concerns	No Action		Alternative 2		Alternative 3		Alternative 4	
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	None		Clean Water Act permitting would likely be required.		Authorization for relocation of the landfill would be required.			
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Undetermined at this stage of the planning process.		Undetermined at this stage of the planning process.		Undetermined at this stage of the planning process.			
L. Mitigation (Record actions to avoid, minimize, and compensate)	NA		Undetermined at this stage of the planning process.		Undetermined at this stage of the planning process.			
M. Preferred Alternative	✓ preferred alternative	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
	Supporting reason							
N. Context (Record context of alternatives analysis)								
The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.								
O. To the best of my knowledge, the data shown on this form is accurate and complete: In the case where a non-NRCS person (e.g. a TSP) assists with planning they are to sign the first signature block and then NRCS is to sign the second block to verify the information's accuracy.								
<i>Jared Barton</i>			Environmental Lead		9/21/2023			
Signature (TSP if applicable)			Title		Date			
Signature (NRCS)			Title		Date			
If preferred alternative is not a federal action where NRCS has control or responsibility and this NRCS-CPA-52 is shared with someone other than the client then indicate to whom this is being provided.								
The following sections are to be completed by the Responsible Federal Official (RFO)								
NRCS is the RFO if the action is subject to NRCS control and responsibility (e.g., actions financed, funded, assisted, conducted, regulated, or approved by NRCS). These actions do not include situations in which NRCS is only providing technical assistance because NRCS cannot control what the client ultimately does with that assistance and situations where NRCS is making a technical determination (such as Farm Bill HEL or wetland determinations) not associated with the planning process.								

P. Determination of Significance or Extraordinary Circumstances

To answer the questions below, consider the severity (intensity) of impacts in the contexts identified above. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

If you answer ANY of the below questions "yes" then contact the State Environmental Liaison as there may be extraordinary circumstances and significance issues to consider and a site specific NEPA analysis may be required.

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative expected to cause significant effects on public health or safety?
<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative expected to significantly affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?
<input type="checkbox"/>	<input type="checkbox"/>	• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?
<input type="checkbox"/>	<input type="checkbox"/>	• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?
<input type="checkbox"/>	<input type="checkbox"/>	• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?
<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?
<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.
<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?

Q. NEPA Compliance Finding (check one)

The preferred alternative:	Action required
<input type="checkbox"/> 1) is not a federal action where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
<input type="checkbox"/> 2) is a federal action ALL of which is categorically excluded from further environmental analysis AND there are no extraordinary circumstances as identified in Section "P" .	Document in "R.2" below. No additional analysis is required
<input type="checkbox"/> 3) is a federal action that has been sufficiently analyzed in an existing Agency state, regional, or national NEPA document and there are no predicted <u>significant adverse environmental effects or extraordinary circumstances</u> .	Document in "R.1" below. No additional analysis is required.
<input type="checkbox"/> 4) is a federal action that has been sufficiently analyzed in another Federal agency's NEPA document (EA or EIS) that addresses the proposed NRCS action and its' effects and has been formally adopted by NRCS . NRCS is required to prepare and publish its own Finding of No Significant Impact for an EA or Record of Decision for an EIS when adopting another agency's EA or EIS document. (Note: This box is not applicable to FSA)	Contact the State Environmental Liaison for list of NEPA documents formally adopted and available for tiering. Document in "R.1" below. No additional analysis is required
<input type="checkbox"/> 5) is a federal action that has NOT been sufficiently analyzed or may involve predicted significant adverse environmental effects or extraordinary circumstances and may require an EA or EIS.	Contact the State Environmental Liaison. Further NEPA analysis required.

R. Rationale Supporting the Finding

R.1 Findings Documentation	
R.2 Applicable Categorical Exclusion(s) (more than one may apply)	
7 CFR Part 650 <i>Compliance With NEPA</i> , subpart 650.6 <i>Categorical Exclusions</i> states prior to determining that a proposed action is categorically excluded under paragraph (d) of this section, the proposed action must meet six sidebar criteria. See NECH 610.116.	

I have considered the effects of the alternatives on the Resource Concerns, Economic and Social Considerations, Special Environmental Concerns, and Extraordinary Circumstances as defined by Agency regulation and policy and based on that made the finding indicated above.

S. Signature of Responsible Federal Official:

Signature Title Date

Appendix C. WS-4 – PIFR Sponsor Declaration Form

DRAFT

Exhibit B – Sponsor Declaration Form

**Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration Checklist**

Version 2021.0716

State: _____ County: _____ Watershed: _____

Project Name: _____

Sponsor's Name:			
Sponsor's Mailing Address:			
Contact Name:		Phone:	
Title:		Email:	
Sponsor Website:			

Description of the existing condition in the watershed that would be addressed through a Watershed Flood Prevention Operations program project.

Potential benefits of a Watershed Flood Prevention Operations program project.

**Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration Checklist**

Version 2021.0716

State: _____ County: _____ Watershed: _____

Project Name: _____

SPONSOR WILL:

- Assist in the locally led planning effort: YES _____ NO _____

- Obtain needed land rights including the use of power of eminent domain, if necessary: YES _____ NO _____

- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs: YES _____ NO _____

- Provide Funds for continuing Operation and Maintenance actions: YES _____ NO _____

- Obtain required permits and approvals at Sponsor cost: YES _____ NO _____

- Provide leadership to help ensure adequate conservation land treatment measures are maintained on at least 50% of the watershed area above retention reservoirs: N/A _____ YES _____ NO _____

- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS: YES _____ NO _____

Authorized Representative of Sponsor

Name (printed): _____ Title: _____

Signature: _____ Date: _____