DRAFT ENVIRONMENTAL ASSESSMENT

Saint Mary's Airport Improvements

State Project Number #Z605630000

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Prepared for:

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ACRONYMS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish & Game
ADNR	Alaska Department of Natural Resources
AHRS	Alaska Heritage Resource Survey
APDES	Alaska Pollutant Discharge Elimination System
BMP	best management practices
CEQ	Council on Environmental Quality
CWA	Clean Water Act
DOT&PF	Alaska Department of Transportation and Public Facilities
DWPA	Drinking Water Protection Area
EA	Environmental Assessment
EFH	Essential Fish Habitat
EFHA	Essential Fish Habitat Assessment
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
IPaC	Information for Planning and Consultation
MALSR	medium intensity approach lighting system and runway alignment indicator lights
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NLRUA	Northern Land Use Research Alaska, LLC
NWR	National Wildlife Refuge
OHW	ordinary high water
PAPI	precision approach path indicators
PM_{10}	particulate matter 10 micrometers or less in diameter
PWS	public water system
REIL	runway end identifier lights
RSA	runway safety area
SHPO	State Historic Preservation Office
USACE	United States Army Corps of Engineers
USFWS	United States Fish & Wildlife Service
VASI	visual approach slope indicators

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1.0 INTRODUCTION

Located in southwestern Alaska, Saint Mary's lies on the north bank of the Andreafsky River, five (5) miles from its confluence with the Yukon River. The City of Saint Mary's encompasses the Yup'ik villages of Saint Mary's and Andreafsky with 550 total residents (U.S. Environmental Protection Agency [EPA] 2021) who maintain a fishing and subsistence lifestyle. Saint Mary's is served by barge and air transport. The Andreafsky River provides the only deep-water barge landing in the Yukon Delta. A 22-mile local gravel road links the village of Saint Mary's to the villages of Andreafsky, Pitka's Point, and Mountain Village (Figure 2). This road is not maintained during winter months.

The Saint Mary's Airport is located approximately seven road miles from the community of Saint Mary's, 450 air miles west-northwest of Anchorage and 515 air miles southwest of Fairbanks, located in Sections 19, 24, 25, and 30, Township 23 North, Range 76 West, Seward Meridian at latitude 62.060833 degrees north and longitude 163.3018333 degrees west (U.S. Geological Survey [USGS] Quadrangle Kwiguk A–3 SW) See Appendix A, Figure 1, Project Location and Vicinity Map[1].

The Alaska Department of Transportation and Public Facilities (DOT&PF) owns and operates Saint Mary's Airport, and in cooperation with the Federal Aviation Administration (FAA), proposes to upgrade existing airport facilities. Saint Mary's Airport has two runways: Runway 17/35 and Runway 6/24. Taxiway A connects Runway 17/35 to the transient apron, and Taxiway B connects Runway 17/35 to the main apron. Taxiway A also connects Runway 17/35 to the General Aviation Apron (DOT&PF 2020) (Table 1). See Appendix A, Figure 2, Existing Airport Facilities and Proposed Airport Improvements.

Table 1: Current Conditions

	Length (ft)	Width (ft)	Surface
Runway 17/35	6,000	150	gravel
Runway 6/24	1,520	60	gravel
Taxiway A	900	75	gravel
Taxiway B	1,025	75	gravel
Transient Apron	650	320	gravel
Main Apron	600	250	paved
General Aviation Apron	345	295	gravel

[1] *All figures for the Saint Mary's Airport Improvements EA are located in Appendix A, Figures.*

Because improvements to Saint Mary's Airport would require FAA Alaskan Airports Division approval and federal funding of the Proposed Action (a federal nexus as defined under the National Environmental Policy Act [NEPA]), an Environmental Assessment (EA) is required. This document serves to evaluate the environmental effects of the Proposed Action, which is discussed further in Chapter 3.0. DOT&PF anticipates that construction of this project would begin in 2022 and is expected to last two years.

2.0 PURPOSE AND NEED

The identification of the purpose and need for a proposed project is the primary basis for developing the range of reasonable alternatives. The proposed project will upgrade the Saint Mary's Airport to meet FAA design standards. The following provides a description of the deficiencies and needs that the proposed project would address.

The purpose of the proposed project is to improve safety at Saint Mary's Airport by upgrading existing aviation facilities to meet current FAA standards for the De Havilland Canada Dash 8-100 and Cessna 208 Caravan, the design aircraft for Runway 17/35 and Runway 6/24, respectively (DOT&PF 2020).

Saint Mary's and the surrounding communities served by the airport are not connected to the Alaska State Highway System. Freight is barged to Saint Mary's in the summer months or flown into the airport year-round. The continued safe operation of Saint Mary's Airport is critical; the airport is a hub for residents, visitors, bypass mail, freight, medical emergencies/needs, and commercial fishing shipping.

The primary north/south runway (17/35) does not currently meet the FAA 600-foot runway safety area (RSA) standard beyond each runway end and the runway surface has degraded over time (Table 2; Graphic 1).

Graphic 1: Current Runway (17/35) Surface

The cross-wind runway (6/24) does not currently meet the FAA standard safety area width of 150 feet and the runway surface has degraded over time. Taxiway A and B and the transient and main aprons also have degraded surfaces (Table 2; Graphic 2).

Graphic 2: Current Taxiway B Surface

Table 2: RSA Deficiencies

	Existing RSA Length Prior to Threshold (ft.)	FAA standard Length Prior to Threshold (ft.)	Existing RSA Width (ft.)	FAA Standard Width (ft.)
Runway 17/35	195/185	600/600	300	300
Runway 6/24	240/240	240/240	115	150

All runway and taxiway lighting components and most navigational aids are more than 24 years old and at the end of their useful life (Graphic 3). There are existing embankment drainage issues in many locations and water is present in the surface and subsurface of many runway, taxiway, and apron areas (Graphic 4). Drainage ditches around the airport facilities would need to be shifted based on the proposed changes in airport layout. Vegetation within the proposed RSA expansions consists of shrubs and trees which would require clearing to support a new embankment.

Graphic 3: Current Lighting on Runway 6/24

Graphic 4: Current Drainage Deficiencies on Runway 17/35

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3.0 PROPOSED ACTION

DOT&PF, in cooperation with the FAA, proposes to upgrade existing facilities at the Saint Mary's Airport (Proposed Action) including the following elements (bulleted below) that are shown (Figures 2 through 4; Appendix A). These elements are further described in detail in Section 3.1:

- Airport improvements
- Resurface unpaved Runway 17/35 and extending the RSA north approximately 450 feet
- Resurface unpaved Runway 6/24 and widening of existing RSA embankment by approximately 35 feet
- Resurface unpaved (gravel) Taxiways A and B in kind
- Resurface the transient apron and the unpaved portion of the main apron
- Repave the main asphalt apron
- Construct drainage improvements within the embankment and structural sections, construct new conveyance ditches, and replace culverts
- Demolish existing FAA-owned navigational aids, including Runway 17 Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) and existing Visual Approach Slope Indicators (VASI)
- Replace all runway and taxiway/apron edge lighting
- Layout new lighted signs
- FAA navigational aid design elements
- New Precision Approach Path Indicators (PAPI) for each end of Runway 17/35
- New Runway End Identifier Lights (REIL) at the Runway 17 threshold and the Runway 35 displaced threshold
- Material site and haul route development
- Five potential material sources are currently being investigated for use by this project:
- One existing, un-permitted material site in Pitka's Point which will not require expansion. Material would be hauled on existing roads.
- One existing, un-permitted material site in Mountain Village which will not require expansion. Material would be hauled on existing roads.
- One existing permitted (commercial) material site in Saint Mary's. Material would be hauled on existing roads.
- One existing, permitted (commercial) material site in Nome. Material would be barged in.
- A future material site in Marshall that is currently under development and would be permitted by Calista as a commercial source may be developed in time to serve the project. The Marshall site would include a barge landing, from which material would be barged.

- Material imported via barge on the Yukon River would require development of a temporary barge landing to allow material to be transported up the Yukon River Access Road, approximately 1.3 miles to the airport.
- Use of these options may require replacement of a culvert on the Yukon River Access Road (Figure 3). The temporary barge landing would require fill and placement of piles in the Yukon River (See Section 3.1.5, for additional barge landing design details).

3.1 Airport Improvements

3.1.1 Runway, Taxiway, and Apron Resurfacing

Runways 17/35 and 6/24 and Taxiways A and B would be resurfaced with new crushed aggregate. With the exception of the existing asphalt paved portion of the main apron, all other operational surfaces at the Airport would be resurfaced with new crushed aggregate base course to a depth of 6 inches with an 8-inch subbase course. After the new crushed aggregate is installed, a dust palliative would be applied immediately after surfacing is completed.

The asphalt paved section of the apron would be repaved. The asphalt mixture surface course would be a depth of 4 inches. The total repaved asphalt pavement section would be a depth of 18 inches and consist of (top to bottom): 4-inches asphalt, 6-inches crushed aggregate base course, and 8-inches subbase course. The asphalt pavement's location, materials, and dimensions would remain the same as the existing conditions following reconstruction. Approximately 8,350 cubic yards of material would be required for this resurfacing.

3.1.2 Runway Safety Area Extension and Operational Surfaces

At the north end of north/south Runway 17/35, an approximately 415-foot-long by 300-foot-wide embankment would be constructed to extend the RSA 450 feet north of its current endpoint. At the south end of north/south Runway 17/35, the operational surface would be maintained, but the landing point would be moved north approximately 400 feet.

The outer edges of the Runway 6/24 RSA embankment would be widened by approximately 18 feet on each side of runway centerline to meet current FAA standards. Vegetation within the airport property and immediately adjacent to the runways would be cleared as needed for new embankment construction.

3.1.3 Drainage Improvements

Improving drainage around the runway would allow for a stable runway surface and minimize future runway deterioration. Proposed design elements are depicted in the Drainage Plan included in the Preliminary Engineering Report (Appendix B), and generally include the following:

- New drainage ditch construction on the west side of Runway 17/35. This would include new ditches located outside the RSA embankment with a minimum depth extending at least two feet below the wicking geotextile layer. The new ditch would extend from a high point near Taxiway B north and drain to the north and south to daylight. The final typical section for the ditch has yet to be determined.

- Existing drainage ditches on the west edge of the paved apron and south side of Taxiway B would be expanded. These ditches would be increased in size and depth to ensure water drains from the reconstructed paved asphalt apron and the resurfaced gravel apron and taxiway sections.
- Two existing culverts would be replaced (in coordination with the phasing plan to ensure continued daytime use of Runway 17/35)
- The 36" culvert under Taxiway B will be replaced in kind
- The 24" culvert under Runway 17/35 will be replaced with a 36" culvert

3.1.4 Navigational Aids and Lighting Improvements

All Airport runway and taxiway lighting components, including most navigational aids, would be replaced. The existing Runway 17 approach lighting system would be permanently removed. The segmented circle and lighted wind cone would be replaced and shifted slightly to accommodate drainage ditches. Runway 6/24's supplementary wind cone will be replaced in situ.

The project would include the following changes to FAA-owned navigational aids:

- Removal of the existing Runway 17 MALSR
- Removal of the existing Runway 17 and Runway 35 VASI
- Installation of new PAPI for each end of Runway 17/35
- Installation of a new REIL at the Runway 17 end and at the new Runway 35 displaced threshold.

3.1.5 Temporary Barge Landing

Material imported via the Yukon River would require development of a temporary barge landing and construction of a temporary combination causeway/pile-supported causeway at the airport barge landing site to allow material to be transported up the Yukon River Access Road, approximately 1.3 miles to the airport (Graphic 5). This option may require offloading and staging areas at the airport barge landing site and a new culvert along this existing road. See Appendix A, Figure 3, Proposed Temporary Barge Landing.

Graphic 5: Proposed Causeway

The proposed design of the temporary barge landing would be a solid fill causeway extending approximately 500 feet into the Yukon River. The causeway would be approximately 65 feet wide at the toe of slope, with a 430-foot-long by 30-foot-wide compacted driving surface and would be constructed primarily from Type A selected granular core material. The upstream 1.5(H):1(V) causeway side slope would be reinforced with geotextile overlayed with a 1-foot-deep Class I riprap filter layer and armored with 2 feet of Class II riprap. An additional 2 feet of Class II riprap would be placed at the toe of the slope. The causeway's downstream 1.5(H):1(V) side slope would have geotextile overlain with 3 feet of Class II riprap. The causeway end would extend another 70 feet into the river at an approximate 5 percent average slope, to approximately 10 feet below ordinary high water (OHW). The causeway end would be protected with geofabric and 2 feet of Class II riprap overlain with 6 inches of sacrificial material. The causeway end toe of slope would be protected with an additional 2 feet of Class II riprap.

Fill would be brought to the Airport Barge Landing and offloading and storage site by truck via the access from a nearby permitted location. A bulldozer would place the material from shore into the river. Riprap would be placed either from a barge or from the causeway and the offloading and staging area using an excavator. It is expected that riprap would be brought to the site as a single barge.

Two mooring dolphins would be installed along the causeway. The dolphins would consist of four 10-inch diameter steel piles. Each 50-foot long pile would be driven about 25 feet into the bed of the Yukon River using a vibratory hammer. It is expected that it will take 30 minutes to drive each pile and a single pile will be driven per day. Removal of the piles is expected to take approximately 15 minutes and completed over 3 days. It is expected that a barge (expected to be around 55 feet by 200 feet and 2,500 Tons) equipped with a crane and vibratory hammer pile driver and supported by a skiff would complete the work.

Approximately 50 feet upstream of the causeway, a 10,000-square-foot offloading and staging area would be constructed 8 feet above OHW. The offloading and staging area and the connector area would be constructed of Type A selected granular core material with side slopes armored with geotextile overlain with riprap, as required.

The development of the temporary barge landing and staging area is dependent on several factors, including:

- Permitting and timing for in-water work windows
- Coordination with and potential approval from Boreal Fisheries
- Coordination with the Saint Mary's community regarding subsistence fisheries at this location

The temporary barge landing is on Saint Mary's Airport property and would lead to a significantly shorter haul route to the Airport, than the barge landing on the Andreafsky River near Saint Mary's. The haul route is expected to accommodate larger haul trucks due to the flatter grades. The proposed barge landing would be temporary, so all improvements would be removed after construction is complete and therefore impacts would be short term.

3.2 Federal Action Requested

The Federal Action requested of the FAA by the DOT&PF is to approve the proposed improvements to Saint Mary's Airport and fund it under FAA's Airport Improvement Program. There are no proposed modifications to FAA Design Standards included in this project.

4.0 ALTERNATIVES

This chapter identifies the proposed alternatives that address the Saint Mary's Airport deficiencies stated in Section 2.0, *Purpose and Need*. The analysis has been prepared in accordance with the Council on Environmental Quality's (CEQ) regulations (40 CFR 1502.14) for implementing NEPA, as well as FAA's NEPA guidelines (FAA Orders 5050.4b and 1050.1F).

4.1 Alternatives Considered but Dismissed

This section describes other alternatives considered and eliminated from further environmental analysis. FAA Order 1050.1F, Change 1, paragraph 506.e states that alternatives "… must be reasonable, feasible, and achieve the project's purpose." Potential alternatives that would not meet these criteria are eliminated from further consideration. DOT&PF investigated several alternatives to address RSA deficiencies and material site development to support reconstruction of the Saint Mary's Airport facilities. Table 3 outlines the alternatives that were considered but dismissed.

Table 3: Alternatives Considered but Dismissed

Runway Safety Area and Apron Alternatives		
Alternative	**Description**	**Rationale for Dismissal**
Option 1	Extend the embankment 822 feet to the north and shift Runway 17/35 to provide standard RSAs beyond each runway end	This option would meet the purpose and need but would impact five acres more wetlands than the proposed action and require road realignment.
Option 2	Displace Runway 17 and Runway 35 thresholds to provide standard RSAs beyond each runway end	Would not meet the purpose and need by reducing the available runway length and potentially restricting aircraft currently using airport during inclement weather conditions.

4.2 Proposed Action Alternative

The Proposed Action would resurface both runways and aprons, extend the north/south runway RSA, improve drainage, and replace navigational aids and lighting. The Proposed Action would meet FAA standards while minimizing environmental impacts and keeping the project's cost within available funding limits.

Additional Proposed Action elements are described further in Chapter 3, *Proposed Action*. The Proposed Action would also require related actions as discussed below.

4.2.1 Material Sources and Haul Roads

In addition to the Proposed Action, the project would require acquisition and transport of materials for resurfacing, embankment construction, and other activities. A number of potential material sources are currently being investigated for potential project use. The following options are included in the environmental review of project effects:

- One existing, un-permitted material site in Pitka's Point (See Appendix A, Figure 4, Existing Material Sites)

- One existing, un-permitted material site in Mountain Village (See Appendix A, Figure 4, Existing Material Sites)
- One existing, permitted material site in Saint Mary's
- One existing, permitted material site in Nome
- Use of a future material site in Marshall that is currently under development and may be permitted by Calista in time to serve the project.

Contractors would maintain all haul roads (e.g., grading). Extensive improvements to the Saint Mary's-Mountain Village Road and Yukon River Access Road are not anticipated, other than a culvert replacement on the Yukon River Access Road where drainage overtops the road from a wetland area.

4.2.2 Permits and Authorizations

Permits required to construct the Proposed Action include:

- United States Army Corps of Engineers (USACE), Section 404 Clean Water Act (CWA) Individual Permit
- Alaska Department of Environmental Conservation (ADEC), Section 10 CWA; Alaska Pollutant Discharge Elimination System (APDES) General Permit for Discharges from Large and Small Construction Activities/National Pollutant Discharge Elimination System Section 402 Permit
- Alaska Department of Fish and Game (ADF&G) Title 16 Fish Habitat Permit

Approvals through consultation with:

- The Alaska State Historic Preservation Office (SHPO) and local Indian Tribes, and Alaskan Native Villages, under the National Historic Preservation Act
- U.S. Fish and Wildlife Service (USFWS): Endangered Species Act (ESA)
- National Marine Fisheries Service (NMFS): ESA, Magnuson-Stevens Fishery Conservation and Management Act
- Essential Fish Habitat Assessment (under the Magnuson-Stevens Fishery Conservation and Management Act)

4.3 No Action Alternative

NEPA requires agencies to consider a "no action" alternative in their NEPA analyses and to compare the effects of the No Action Alternative with the effects of the Proposed Action. Under the No Action Alternative, no airport improvements would occur and the existing deficiencies would remain present at the airport. The No Action Alternative would not improve operational surfaces. The No Action Alternative would not meet the project's purpose and need.

4.4 Summary of Alternatives' Environmental Consequences

Table 4 compares the Proposed Action against the No Action Alternative.

Table 4: Comparison of Alternatives

Metric	Proposed Action	No Action
Purpose and Need		
Safety	The Proposed Action would meet this aspect of the purpose and need	The No Action Alternative would not meet this aspect of the purpose and need.
Operations	The Proposed Action would meet this aspect of the purpose and need	The No Action Alternative would not meet this aspect of the purpose and need.
Environmental Impacts[2]		
Air quality	Minor impacts from material transport	Non-issue
Biological resources	Approximately 0.88 acres of Essential Fish Habitat temporarily filled and 8 piles placed to construct temporary barge landing and staging area Approximately 5.37 acres of previously undisturbed wildlife habitat would be affected; 2.81 acres of vegetation clearing and fill would be placed in uplands and 2.56 acres of vegetation clearing and fill would be placed in wetlands. The project is not anticipated to have an effect on bald or golden eagles	Would not affect biological resources beyond existing effects
Hazardous materials, solid waste, and pollution prevention	The Proposed Action does not involve a property on the National Priorities List and hazardous waste generation is not anticipated Construction generated solid waste is not expected to exceed available landfill capacities	The No Action Alternative would not result in a change from existing conditions.
Historical, architectural, archaeological, and cultural resources	The Proposed Action Alternative would not affect any significant historical, architectural, archaeological, or cultural resources.	The No Action Alternative would not affect historical, architectural, archaeological, or cultural resources.
Natural resources and energy supply	Minor effects	The No Action Alternative would not result in a change to current energy consumption levels or material needs.
Noise and noise-compatible land use	Minor effects	The No Action Alternative would not change noise levels from current conditions.
Socioeconomics	Minor effects	The No Action Alternative would not affect socioeconomics.
Children's health and safety risks	Minor or insignificant effects	The No Action Alternative would potentially affect children's health or safety risks that would increase over time related to airport deficiencies such as soft spots and degrading pavement.
Visual effects	Minor effects	The No Action Alternative would not affect visual resources.

[2] *Only includes resource categories with impacts and does not include Non-Applicablenon-Issue Categories*

Metric	Proposed Action	No Action
Wetlands	Proposed improvements associated with Saint Mary's Airport and temporary barge landing and staging area would result in the fill of 2.56 acres of terrestrial wetlands and 0.88 acres of riverine Waters of the United States. A Clean Water Act Section 404 wetland fill permit would be required from USACE prior to construction.	The No Action Alternative would not affect wetlands.
Floodplains	Minor effects	The No Action Alternative would not affect floodplains.
Surface waters	Minor effects	The No Action Alternative would not affect surface waters.

5.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

5.1 Overview

This chapter provides a description of the existing environmental, social, and economic setting for the area that would be affected by the Proposed Action. This chapter also presents the environmental effects that would likely result from the implementation of the alternatives presented in Chapter 3. The two alternatives carried forward for full evaluation in this EA are the Proposed Action and the No Action Alternative.

Environmental effects are defined in the CEQ NEPA implementing regulations (40 CFR 1500-1508) as changes to the human environment from the Proposed Action or actions that are reasonably foreseeable and have a reasonably close causal relationship to the Proposed Action. In addition to the Proposed Action, the project would require acquisition and transport of materials for resurfacing, embankment construction, and other activities.

FAA Order 1050.1F (2015) and FAA 1050.1F Environmental Desk Reference for Airport Actions (2015) provide guidance on FAA NEPA documentation and provide direction for the evaluation of potential impacts of a proposed federal airport project on specific environmental categories. This is an issues-based EA focused on evaluating effects that are significant or potentially significant based on significance thresholds outlined in FAA Order 1050.1F. Therefore, resource categories where the effects are likely to be minor or insignificant, are not evaluated in detail. The rationale for these determinations are provided in Section 5.2 (*Non-Issue Resource Categories*).

Table 5 summarizes FAA Order 1050.1F significance thresholds for applicable resource categories. If the Proposed Action is likely to meet any of these impact thresholds, the FAA must prepare an Environmental Impact Statement; however, as summarized below, none of the impacts are anticipated to reach this level of significance.

Table 5: Significance Thresholds

Category	Significance Threshold
Biological resources (e.g., fish, wildlife, vegetation)	The US Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat. The FAA has not established a significance threshold for non-listed species, however factors to consider include if the action would have the potential for: • A long-term or permanent loss of unlisted plant or wildlife species, i.e., extirpation of the species from a large project area (e.g., a new commercial service airport) • Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) or their habitats • Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations • Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance
Hazardous materials, solid waste, and pollution prevention	The FAA has not established a significance threshold for hazardous materials, solid waste, and pollution prevention, however factors to consider include if the action would have the potential to: • Violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management • Involve a contaminated site (including but not limited to a site listed on the National Priorities List). Contaminated sites may encompass relatively large areas. However, not all of the grounds within the boundaries of a contaminated site are contaminated, which leaves space for siting a facility on non-contaminated land within the boundaries of a contaminated site. • Produce an appreciably different quantity or type of hazardous waste • Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity • Adversely affect human health and the environment.
Historical, architectural, archaeological, and cultural resources	The FAA has not established a significance threshold for historical, architectural, archeological, and cultural resources, however factors to consider include if the action would result in a finding of Adverse Effect through the Section 106 process.
Land use	The FAA has not established a significance threshold for land use.
Natural resources and energy supply	The FAA has not established a significance threshold for natural resources and energy supply, however a factor to consider is whether or not the action's construction, operation, or maintenance would cause demands that would exceed available or future natural resources or energy supplies.
Noise and noise-compatible land use	The FAA has determined that a significant impact would occur if the proposed action causes noise sensitive areas located at or above day-night average sound level (DNL) 65 decibels (dB) to experience a noise increase of at least DNL 1.5 dB. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.

Category	Significance Threshold
Socioeconomics, environmental justice, and children's health and safety risks	The FAA has not established a significance threshold for socioeconomics, environmental justice, or children's environmental health and safety risks, however factors to consider include if the action would have the potential to: • Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area) • Disrupt or divide the physical arrangement of an established community • Cause extensive relocation when sufficient replacement housing is unavailable • Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities • Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities • Produce a substantial change in the community tax base. • Lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population, due to significant impacts in other environmental impact categories; or impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population. • Lead to a disproportionate health or safety risk to children.
Visual effects (light emissions and visual resources/character)	The FAA has not established a significance threshold for light emissions or visual resources/character, however factors to consider include if the action would have the potential to: • Create annoyance or interfere with normal activities from light emissions • Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources. • Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources • Contrast with the visual resources and/or visual character in the study area and block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.
Wetlands	The FAA Order 1050.1F defines significant impact thresholds for wetlands. According to the Order, a significant impact would occur when the proposed action causes any of the following: • Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers • Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected • Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety, or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public) • Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands • Promote development of secondary activities or services that would cause the circumstances listed above to occur • Be inconsistent with applicable state wetland strategies.
Floodplains	The FAA has determined that a significant impact would occur if the proposed action causes notable adverse impacts on natural and beneficial floodplain values.
Surface waters	The FAA has determined that a significant impact would occur if the proposed action would: • Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies • Contaminate public drinking water supply such that public health may be adversely affected.

5.2 Non-Issue Resource Categories

5.2.1 Biological Resources

5.2.1.1 Marine Mammals

Although uncommon, Saint Mary's residents have observed beluga whales upriver on the Yukon River as far as Hughes and Nenana (ADF&G 2021a). Unlike the Cook Inlet beluga population, which cannot be hunted due to its endangered status, belugas in the Yukon River are not subject to additional hunting regulations and are likely from the Eastern Bering Sea, which sustains a healthy population and are not listed as a threatened species. Because beluga whales are rarely documented in the project area, it is unlikely they would be present during construction activities; as such, this is a non-issue.

5.2.1.2 Eagles

According to ADF&G, the range of bald eagles extends over the project area, but the western extent of the golden eagle range is to the east of the project area (ADF&G 2021b). The nearest documented bald eagle nest is approximately 96 miles to the east (USFWS 2021a). During field work in 2021, no trees large enough to support an eagle's nest were observed within 0.5 mile of the Proposed Action (J. Grabel, personal communication, June 21, 2021). Therefore, this resource is not anticipated to occur in the project area and has been determined a non-issue.

5.2.2 Climate

Climate change refers to a significant change in long-term (decades to millennia) weather patterns as a result of changes in the concentrations of greenhouse gases within the Earth's atmosphere. While aviation contributes to greenhouse gas emission, the Proposed Action is not anticipated to result in a substantial increase of aviation activity or greenhouse gas emissions.

5.2.3 Coastal Resources

Alaska's participation with the national Coastal Zone Management Act (known as the Alaska Coastal Management Program) ended on June 30, 2011. There are no coastal barriers within the State of Alaska and the project is not located within marine waters (USFWS 2021).

5.2.4 Farmland

There is no prime or unique farmland, nor farmland of state or local importance in the vicinity of the project (NRCS 2021).

5.2.5 Land Use

The Saint Mary's airport improvements, staging areas, and temporary barge landing are located within the existing airport property boundaries, owned by DOT&PF. Designated land use adjacent to the airport boundary is undeveloped land. In the southwestern portion of the project area, adjacent to the Yukon River, is the Boreal Fisheries commercial seafood processing and discharge plant. Although the land in this area is owned by DOT&PF, the area contains a native allotment. The potential Mountain Village and Pitka's Point material sites are located on land conveyed to native corporations.

The Saint Mary's Community Economic Development Strategy (RBH Management Services 2000) was the first comprehensive undertaking to develop an overall community plan. The study was intended to assist the City of Saint Mary's decision-makers by providing guidelines to address questions and concerns related to future growth and development. It is a policy plan and has not been updated since its inception in 2000.

Land uses in Saint Mary's are primarily residential, commercial, light industrial, and public and institutional uses including the airport, a fire station, school, post office, health care, cemetery, and other public buildings and utilities. Residential areas are located within Saint Mary's. The commercial center is primarily along Airport Road and there is limited industrial property in the vicinity of the port.

The primary transportation links to Saint Mary's are by air and water, with barge and air transport services. The Saint Mary's Airport is capable of receiving jet aircraft. Air service is the only connection between other communities in the region on a year-round basis. The primary air routes to Saint Mary's are from Anchorage and Bethel. Saint Mary's has a deep water port on the north bank of the Andreafsky River, which provides the only deep-water dock in the Yukon Delta. A 22-mile local road links the village of Saint Mary's to the villages of Andreafsky, Pitka's Point, and Mountain Village. This road, however, is not maintained during winter months.

The Proposed Action would not change land uses as the Saint Mary's Airport Layout Plan identifies all undeveloped land as an aviation use and expansion of the airport is consistent with the Saint Mary's Community Economic Development Strategy economic goals and objectives.

5.2.6 Wild and Scenic Rivers

The Andreafsky River is the nearest Wild and Scenic River; however, it is five miles from the Saint Mary's Airport and the nearest material source (Pitka's Point, an active site) is located 0.5 miles upslope (USFWS 2021). No expansion of the Pitka's Point material site would occur and the area between the material site and river is an approximately 20 percent, heavily vegetated slope.

5.2.7 Section 4(f)

Publicly owned wildlife refuges, parks and recreation areas, and historic sites eligible for the NRHP are protected from transportation impacts by Section 4(f) of the Department of Transportation Act.

Review of the U.S. Bureau of Land Management, U.S. Forest Service, National Park Service, and the Alaska Department of Natural Resources (ADNR) websites indicate there are no state Recreation Areas, Critical Habitat Areas, or public parks in the vicinity of the proposed project. A review of the USFWS's National Wildlife Refuges System identified the Yukon Delta National Wildlife Refuge (NWR) boundaries overlapping the project, as shown on Figure 5, General Land Ownership.

As discussed in Section 5.3.10 there are no previously documented cultural resources or properties within the Saint Mary's project area.

However, proposed improvements at the Airport, including the temporary barge landing, would be located on land owned by the State of Alaska. As such, the project would occur on inholdings owned by the State of Alaska and/or native corporations through Alaska Native Claims

Settlement Act Section 14(f) within the boundaries of the NWR. Land management of these inholdings is not within the purview of the NWR managers. Therefore, these inholdings are not considered to be a Section 4(f) property.

The Andreafsky Wilderness area is located approximately 14.5 miles north of the proposed project in Saint Mary's (USFWS 2021c).

The Kotlik-Marshall Trail (RS2477 #120) follows the east bank of the Yukon River and bisects the Boreal Fish Camp. This winter-only trail is used primarily for transportation (not recreation) but does not have a specific management plan. However, it is shown in a regional transportation plan and crosses DOT&PF and privately-owned land (DOT&PF 2018). The trail is exempt from Section 4(f) consideration per 23 CFR 774.13 (f)(4)[3] and the project would not impact the trail.

5.2.8 Groundwater

Limited published data exists regarding groundwater within the project area. A search of EPA's sole source aquifers indicates there are no such resources in Alaska (EPA. 2021). No private drinking water wells are located within the project area. The ADEC database of public water system (PWS) sites shows the only project element within a drinking water protection area (DWPA) is the Pitka's Point material site (ADEC 2021b). The material site is located within Zone B for two groundwater wells (#AK 2272750), which supply the community water system (serves 109 people). The Pitka's Point material site is approximately 8,000 feet from the groundwater wells and on the edge of Zone B, as shown on Figure 6. A source water assessment has not been completed for this source, as a result DEC's recommendations are used in lieu of site specific recommendations (18 AAC 80). Per DEC Table A, minimum separation distances between drinking water sources and potential sources of contamination are no less than 200 feet. Additionally, the material site is existing and obtaining material would not require expansion of impervious surfaces.

5.2.9 Threatened or Endangered Species

According to the USFWS's Information for Planning and Consultation (IPaC) decision support tool, there are no species listed as threatened or endangered under the ESA that occur within the project area (USFWS 2021b) (see Appendix C, *US Fish and Wildlife Service – Information for Planning and Consultation Results*).

5.3 Resource Categories with Minimal Effects

5.3.1 Biological Resources

5.3.1.1 Migratory Birds

5.3.1.1.1 Affected Environment

The project is within the southwestern margin of the Nulato Hills physiographic division where it meets the Yukon-Kuskokwim Coastal Lowland at the Yukon River and is adjacent to the nearly 20-million-acre Yukon-Kuskokwim NWR , which is comprised of the Yukon and Kuskokwim

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[3] Trails, paths, bikeways, and sidewalks that are part of the local transportation system and which function primarily for transportation.

River deltas (DOT&PF 2007; ADF&G 2006). This area has bird species more in common with Eurasia than the rest of Alaska, with yellow and white wagtails (*Motacilla flava* and M. *alba*), bluethroats (*Luscinia svecica*), and red-throated pipits (*Anthus cervinus*) overlapping with high densities of nesting tundra swan (*Cygnus columbianus*), common eider (*Somateria mollissima*) and other waterfowl. Additionally, shorebirds such as the bristle-thighed curlew (*Numenius tahitiensis*), dunlin (*Calidris alpina*), and black-bellied plover (*Pluvialis squatarola*) are found in abundance, particularly in sedge flats.

According to USFWS's IPaC decision support tool, there are three migratory birds of concern expected to occur within the project area: bristle-thighed curlew, Pacific golden-plover (*P. fulva*), and whimbrel (*Numenius phaeoopus*) (see Appendix C).

5.3.1.1.2 Environmental Consequences

Approximately 5.37 acres of previously undisturbed wildlife habitat would be affected; 2.81 acres of vegetation clearing/grubbing and fill would be placed in uplands and 2.56 acres of vegetation clearing and fill would be placed in wetlands.

5.3.1.1.3 Minimization and Mitigation

To avoid adverse impacts to migratory birds, vegetation clearing would follow the USFWS *Recommended Time Periods for Avoiding Vegetation Clearing in Alaska* in order to protect migratory birds, as well as use the most appropriate clearing methods to avoid impacts to nesting migratory species (USFWS 2020). For the Yukon-Kuskokwim Delta ecoregion, the following vegetation clearing avoidance periods would apply (USFWS 2021c):

- Forest or woodland – May 1 through July 15
- Shrub or open habitat – May 5 through July 25

If working in shrub or open habitat (e.g., marsh, pond, tundra, gravel, or other treeless/shrubless ground habitat), the following time periods to avoid vegetation clearing may be expanded where the following species are present (USFWS 2020b):

- Raptors, which may nest two or more months earlier than other birds
- Canada geese (*Branta canadensis*) and swans (*Cygnus spp*.), which begin nesting April 20
- Black scoters (*Melanitta americana*), which are known to nest through August 10

5.3.1.2 Invasive Species

5.3.1.2.1 Affected Environment

Executive Order 13112, Safeguarding the Nation from the Impacts of Invasive Species, as amended on December 5, 2016, requires federal agencies to prevent and control the introduction of invasive species to minimize the economic, ecological, and human health effects that invasive species may cause. The Alaska Exotic Plant Information Clearinghouse database, administered by the Alaska Center for Conservation Science at the University of Alaska Anchorage, was used to identify any invasive terrestrial, marine, and aquatic plant species that could do harm to native habitats on or adjacent to the project. Although available mapping does not report invasive plant occurrence in the area, three non-native species were observed adjacent to the Saint Mary's Airport during the wetland delineation: white clover (*Trifolium repens*), common dandelion (*Taraxacum officinale*), and common yarrow (*Achillea millefolium*).

5.3.1.2.2 Environmental Consequences

Construction, operation, and maintenance activities could increase opportunities for invasive species introduction and dissemination through vehicle/airplane traffic.

5.3.1.2.3 Minimization and Mitigation

Measures to minimize or eliminate the potential for introduction, establishment, and spread of invasive species would be implemented during construction. Construction equipment would be pressure washed to remove soil, seed, and plant material prior to moving onto or off the project site. Clean fill material, native plants, and certified native seed mix would be used, removing the risk of seeding exposed areas with invasive species. Stabilization of disturbed areas would occur as soon as practicable, reducing the risk of invasive species establishing themselves in the exposed soils. Stabilization can include paving, laying down a gravel layer, and/or seeding and vegetating. Certified native seed or locally produced seed mix would be used when seeding is the selected stabilization method.

5.3.1.3 Essential Fish Habitat

5.3.1.3.1 Affected Environment

<u>Habitat (Saint Mary's)</u>: The proposed temporary barge landing, including the causeway and mooring dolphins and staging area would be located in the Lower Yukon River at the airport barge landing approximately 100 miles upstream from the Yukon River's mouth, approximately 13 miles upriver from Mountain Village, and 1.5 miles and 5.5 miles downriver from Pitka's Point and St. Mary's, respectively. The Yukon River is an important subsistence and commercial fishery. There is some existing development in the area associated with Boreal Fisheries, and much of the riparian area is either unvegetated or somewhat vegetated with alders (*Alnus spp*.), willows (*Salix spp*.), grasses (*Paceae spp*.), and sedges (*Cyperaceae spp*.). At the proposed project area, the Yukon River is approximately 0.75 mile wide. At a river cross section taken on June 26, 1996 at Pitka's Point, the Yukon River had a maximum depth of 40 feet. The velocity on that date and at that location was 3.17 feet per second (Brabets et al. 2000). The river bottom in this area is primarily sediment and mud. At its mouth, the Yukon River transports about 60 million tons of suspended sediment annually into the Bering Sea (Brabets et al. 2000).

<u>Fish and Essential Habitat:</u> Resident Arctic Char (*Salvelinus alpinus*), Inconnu (or sheefish) (*Stenodus leucicthys*), and whitefishes (*Coregonus spp*.) are resident fish present in the reach of the Yukon River adjacent to the proposed barge landing and causeway/dock expansion. In addition, the Yukon River in this area is identified by ADF&G as an anadromous fish stream (ID #334-20-11000-2451), which is designated as Essential Fish Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act. ADF&G shows that all five species of Pacific Salmon are present in the proposed barge landing area at some time during the year, as described below (ADF&G 2021c).

- Chinook Salmon (*Oncorhynchus tshawytscha*): According to ADF&G, about 183,000 adult Chinook Salmon migrate upstream through the project area annually (ADF&G 2020a) between mid-to-late May through early July, and after July 15, migration is typically completed. It is likely Chinook Salmon juveniles are in the project area during outmigration immediately before or after ice-out in early May (Ohlberger et al.

2021); however, the timing varies between different cohorts of fish from different parts of the Yukon River and may be influenced by physical factors, such as water temperature (Miller et al. 2020).

- Chum Salmon (*O. keta*): An average 1.9 million adult Chum Salmon make up the summer run and migrate through the project area from early May through July 15, and about 740,000 adult Chum Salmon are present migrating through the project area between July 18 and early September (fall run) (ADF&G 2020a). Juvenile Chum Salmon outmigration downstream past the project area peaks in late June when millions of small fry are dispersed by high river discharges through numerous distributary channels into coastal habitats. Juvenile out migration through the project area decreases as water temperatures increase (64 to 70 degrees Fahrenheit) in mid-July (National Academies 2005).
- Coho Salmon (*O. kisutch*): About 209,000 Coho Salmon travel upstream past the project area each year between mid-July through early September (ADF&G 2020b), typically during periods of high water (Yukon River Panel 2017). Coho Salmon juvenile outmigration timing from the Yukon River is less understood.
- Pink Salmon (*O. gorbuscha*): Adult Pink Salmon migrate upstream through the project area between late June and mid-August. A total of 689,607 Pink Salmon were estimated to have migrated pass the Pilot Station sonar (about 20 miles upriver from the project area) in 2018 (Dreese and Lozori 2019). Outmigration of juvenile Pink Salmon through the project area peaks before mid-June as they move rapidly through delta habitats (National Academies 2005).
- Sockeye Salmon (*O. nerka*): Sockeye salmon adults travel past the project area in July and August (Dreese and Lozori 2019). Eggs hatch during the winter, and the young salmon move into the rearing areas. In systems with lakes, juveniles usually spend up to three years in fresh water before migrating to the ocean in the spring as smolts. However, in systems without lakes, many juveniles migrate to the ocean shortly after emerging from the gravel in the spring (ADF&G N.D.).

5.3.1.3.2 Environmental Consequences

Although salmon spawning and rearing habitat has been avoided, approximately 0.88 acres would be filled and 8 piles would be placed within Yukon River salmon migration EFH for the Airport Barge Landing. The impacts to EFH and EFH-listed species (salmon) would be temporary, and the riprap from the causeway and piles would be removed within two seasons.

The discharge and removal of fill material for the barge landing causeway and offloading and staging area has the potential to impact EFH through the creation of turbidity plumes. In addition, development of the fill placement would create impervious surfaces which could cause local stormwater runoff leading to sedimentation, siltation, and an increase contaminants and debris in EFH. Turbidity and associated sedimentation could cause an increase in the fluctuation in water temperature and decreases in dissolved oxygen, which could result in juvenile salmon mortality and a change in returning adult behavior.

The Airport Barge Landing would temporally remove salmon migration habitat. The causeway could create a physical barrier to migration by pushing outgoing juvenile salmon into deeper water, where they could be more susceptible to predation, and creating a minor obstacle to adult salmon migrating upstream. The causeway could also change water flow causing sediment deposition in shallow areas that are potentially important for juvenile and adult salmon migration refuge.

Placement and removal of piles for the dolphins has the potential to impact EFH and salmon by creating underwater noise. Noise from pile driving has the potential to affect the distribution and behavior and potential injury of juvenile salmon, making them more susceptible to predation resulting in indirect impacts and disruptions to the local river system as a whole. Pile driving and removal could also temporarily increase water turbidity.

Short-term impacts to EFH from project vessel traffic during construction could increase wakes and surge in the area, which could lead to riverbank erosion and increased turbidity; however, since the airport barge landing would only be used to bring in fill material for the airport project, these impacts are expected to be short-lived.

Impacts to EFH are further discussed in the EFH Assessment in Appendix D. The NMFS has provided information on the EFH, with consultation conducted on September 22, 2021 (Appendix G). During consultation, NMFS stated the project may adversely affect EFH, but these effects would be minimal and temporary in nature. An ADF&G Title 16 Fish Habitat permit and USACE Section 404 permit would be obtained prior to construction.

5.3.1.3.3 Minimization and Mitigation

Incorporating the following conservation measures would help minimize adverse impacts to EFH and EFH-managed species/species complexes and other fish and riverine resources in the Project area.

- The Project design minimizes the areal extent of fill in EFH to the extent practicable, and no spawning or rearing habitats are impacted
- Fill would be sloped to maintain shallow water and allow for unrestricted fish migration and provide refuge for juvenile salmon.
- The Project would employ the fewest number of pilings necessary to support barge activities, minimizing impacts to the substrate and construction noise.
- DOT&PF would implement practical measures to avoid, contain, and clean up petroleum spills from material barges.
- Fill placement and pile installation and removal timeframes would be negotiated with ADF&G and NMFS to minimize impacts during sensitive time periods when salmon migrate through the area.
- Impact hammer use would be avoided and piles would be driven as deep as possible with a vibratory hammer.
- Piles would be removed slowly to allow sediment to slough off at or near the mudline to reduce suspended sediment and turbidity.
- Pile driving would incorporate "soft start" methods when possible.
- New piles would be used when possible to avoid the introduction of invasive species.

5.3.1.4 Minimization and Mitigation

No minimization and mitigation measures are proposed or would be required.

5.3.2 Floodplains

5.3.2.1 Affected Environment

The proposed project is located in an unmapped floodplain area. Federal Emergency Management Agency (FEMA) has not completed a study to determine flood hazards in Saint Mary's; therefore, a flood map has not been published (FEMA 2021). Recorded flooding events are due to ice jams and Yukon River stream overflows, with the last flood event occurring in 1989 from a Yukon River ice jam (USGS 1994; AECOM 2018). Additionally, a 2016 Disaster Cost Index states that a spring flood (declared by Governor Palin on May 6, 2009; FEMA declared under DR-1843 on June 11, 2009) had extensive widespread flooding due to snow melt and destructive river ice jams caused by rapid spring warming combined with excessive snow pack and river ice thickness. The airport is not subject to Yukon River flooding, and the Yukon River 100-year floodplain is estimated at 32 feet (USGS 1994).

5.3.2.2 Environmental Consequences

Although portions of the project would occur within the Yukon River 100-year floodplain, no local flood hazard permit would be obtained as a regulatory program does not require one. Further, no buildings or permanent infrastructure would be built within the floodplain.

5.3.2.3 Minimization and Mitigation

No minimization and mitigation measures are proposed or would be required.

5.3.3 Natural Resources and Energy Supply

5.3.3.1 Affected Environment

Electrical power: The City of Saint Mary's and Saint Mary's Airport receives electrical power from the Alaska Village Electric Cooperative.

Water system: The City of Saint Mary's is responsible for potable water service. Water comes from Alstrom Creek where a small reservoir provides storage. In the summer, Alstrom Creek is charged by surface runoff and during the winter, it is spring fed. Water is filtered and chlorinated at a water treatment plant near the reservoir. Water is continuously circulated to prevent pipe from freezing and receives heat from a waste heat recovery system at the power plant.

Sewer system. The City of Saint Mary's is responsible for sanitary sewer service. Sewer effluent flows to a sewage lagoon with an approximately 1. 7 million gallons for retention capacity. No chlorination is added prior to release.

Fill materials for the Proposed Action construction would potentially be obtained from one of the following proposed sources:

- One existing, un-permitted material site in Pitka's Point (See Figure 4, Existing Material Sites)
- One existing, un-permitted material site in Mountain Village (See Figure 4 Existing Material Sites)
- One existing, permitted material site in Saint Mary's

- One existing, permitted material site in Nome
- Use of a future material site in Marshall that is currently under development and may be permitted by Calista in time to serve the project.

The Proposed Action, including the proposed material sites, and the No Action Alternative would not change the long-term energy requirements at the airport. Construction of the airport improvements may allow airport operations to increase over current levels, which could increase electrical and fuel demand; however, the increase in energy usage from the project would likely be negligible. The Proposed Action would have minimal effects on local utility systems and city water and sewer systems would have sufficient capacity to accommodate any resulting changes in usage.

The Proposed Action would potentially result in a temporary increase in fuel demands during construction, though additional fuel would likely be barged in to support the project.

Fill material and construction materials are required for construction. Adequate fill material supplies are expected to be available within a local proposed material site. The Proposed Action and No Action Alternative would not cause demands exceeding available or future natural resource or energy supplies.

5.3.3.2 Environmental Consequences

There would be no long-term changes to energy supply requirements or increases in fuel demands as a result of the Proposed Action.

The Proposed Action would use natural resource fill material from the proposed material sites as discussed in Section 4.2.1 *Material Sources and Haul Roads* and would not require the use of other natural resources

5.3.3.3 Minimization and Mitigation

No minimization and mitigation measures are proposed or would be required.

5.3.4 Air Quality

According to Alaska Administrative Code (AAC) 18 AAC 50, Saint Mary's and Mountain Village are considered Class II areas. As such, there are designated maximum allowable increases for particulate matter 10 micrometers or less in diameter (PM10), nitrogen dioxide, and sulfur dioxide. Activities in these areas must operate in such a way that they do not exceed listed air quality controls for these compounds (ADEC 2021a). The project area is not located within or near an area defined by ADEC as a Nonattainment or Maintenance Area, or within an area that regularly exceeds or is near violating the health-based National Ambient Air Quality Standards. The community of Saint Mary's was included on the list of communities reporting that residents are highly affected by dust (PM10) on the 2010 Rural Dust Survey (ADEC 2010). The Project would not be considered a "major source of air pollutants" and would not require an operating permit under Title V of the Clean Air Act. The Saint Mary's Airport is a General Aviation airport with fewer than 180,000 annual operations; therefore, air quality analysis is not required. The Erosion and Sediment Control Plan for the project would address minor impacts to air quality from construction (e.g., dust). Measures to control fugitive dust such as pre-watering sites prior to excavation, applying a dust palliative, controlling construction traffic patterns and haul routes, and covering, or otherwise stabilizing fill material stockpiles, would be implemented during construction.

5.3.5 Noise and Noise Compatible Land Use

5.3.5.1 Affected Environment

The existing airport is designated by the FAA as being suitable for use by large aircraft. Existing noise sources in the area are primarily associated with the airport. Existing land use surrounding the Saint Mary's Airport is undeveloped and minimal conflict between noise and compatible land use is anticipated. Both communities are in the vicinity of the Airport, Saint Mary's is approximately 7 miles away via an existing road (3.5 air miles) and Pitka's Point is approximately 4.5 miles away via an existing road (2 air miles); distances that would result in no noise conflicts with the Airport. The proposed project would not increase or decrease aircraft noise as the project only changes safety areas to meet safety standards for the existing fleet mix but would not result in larger sized aircraft using the facility.

No community concerns regarding noise were identified during public scoping for this EA.

5.3.5.2 Environmental Consequences

The Proposed Action would not result in permanent noise impacts. Temporary noise impacts in the immediate vicinity of the Airport and material sites would occur during construction, but these impacts are anticipated to be minimal and short-term.

The Proposed Action would not disrupt current or planned development and the community of Saint Mary's has no zoning laws. The Proposed Action would be compatible with existing land uses and airport improvements would be located within the existing Saint Mary's Airport property boundary. The Proposed Action would not result in any incompatible changes from existing land use designations.

5.3.5.3 Minimization and Mitigation

A noise analysis is not required, as the proposed airport improvements are not being done to accommodate larger aircraft, and the project is not anticipated to trigger a change to the aircraft fleet mix. No minimization and mitigation measures are proposed or would be required.

5.3.6 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

5.3.6.1 Affected Environment

Saint Mary's is a First Class City in Kusilvak Census Area, Alaska, located on the north bank of the Andreafsky River in the Bethel Recording District, 5 miles from its confluence with the Yukon River. The city lies 450 air miles west-northwest of Anchorage. It encompasses 44.0 square miles of land and 6.3 square miles of water. It was incorporated as a city in 1967. The adjacent village of Andreafsky (historically known as Clear River) was annexed in 1980. A federally recognized tribe is located in the village – the Algaaciq Tribal Government; Yupiit of Andreafsky. In 2014 to 2018, the population was 550, with 166 households and 201 housing units. The racial makeup of the City was 4.0% White, 2.0% Black, 90.0% Alaska Native, 2.0% Hispanic, and 4.0% reporting 2 or more races. The age distribution of the population shows 12.0% were 4 years and under, 38.0% were under the age of 18, 62.0% were over the age of 18, and 4.0% were 65 years or older. The per capita income was $15,009 (U.S. Census Bureau, American Community Survey (ACS) 2014-2018).

Mountain Village is a community in the Kusilvak Census Area, Alaska. It is located on the Yukon River near the Yukon-Kuskokwim Delta and covers a total area of 4.8 square miles. Its population is 877 (U.S. Census Bureau 2019). In 2000, there were 183 households 146 families residing in the village, and there were 211 housing units. The racial makeup was 6.4% White, 90.5% Alaska Native, 0.1% Pacific Islander, 0.4% Hispanic or Latino, and 3.1% from two or more races. The age distribution of the population showed 42.4% under the age of 18, 9.9% from 18 to 24, 29.3% from 25 to 44, 13.5% from 45 to 64, and 4.9% who were 65 years of age or older. The per capita income in Mountain Village was $9,653.

5.3.6.2 Environmental Consequences

The Proposed Action would have positive socioeconomic impacts on Saint Mary's and surrounding villages. Economic advantages would likely arise from a short-term increase in construction employment opportunities (i.e., local hire) and additional revenue for service businesses that support directly or indirectly support the project's construction.

The Proposed Action would not require relocations and the community tax bases would not be affected. No disproportionately high or adverse negative effects to low-income or minority populations are expected. The Proposed Action would have a beneficial effect on Saint Mary's residents, who are primarily a minority race (approximately 90% Alaska Native). The Proposed Action would provide a safer and more reliable air travel and access, including medical evacuation, for all residents, including children and low-income minorities. The airport would remain open during construction, but minor airport delays could occur as a result of construction activities.

The Proposed Action would not result in risks to children's environmental health and safety. Noise levels at the school and clinical facilities would remain within land use compatibility standards. Vehicle traffic may increase during construction, particularly along haul routes to material sites, or to the barge landing site, but it is unlikely to result in any substantial increase in safety risks.

5.3.6.3 Minimization and Mitigation

No minimization and mitigation measures are proposed or would be required.

5.3.7 Visual Resources

5.3.7.1 Affected Environment

The Saint Mary's Airport is located 7 miles from the city of Saint Mary's and it is surrounded by undeveloped land. Distant views of the airport may be seen from Pilcher Mountain. The proposed airport improvement areas are located on or immediately adjacent to existing runways, aprons, and drainage areas within the airport's boundaries. There are limited views of the airport since the surrounding property is undeveloped. Views would be primarily from vehicles on Point Fosdick Drive and Stone Drive.

The proposed existing material areas are located off-site in Nome, Saint Mary's, Mountain Village, and Pitka's Point and accessed via connecting haul roads. Material barged in would be accessed via a temporary barge landing.

5.3.7.2 Environmental Consequences

Existing views of the Airport from adjacent roadways would change insignificantly with the proposed improvements. Material sites would not be expanded; therefore views would not change. Views of the airport barge landing from adjacent areas would be temporary and insignificant.

5.3.7.3 Minimization and Mitigation

No minimization and mitigation measures are proposed or would be required.

5.3.8 Surface Water

5.3.8.1 Affected Environment

According to the ADNR Alaska Mapper - Navigable Waters website, USACE, and the U.S. Coast Guard , the Yukon River is listed as navigable for its entire length (ADNR 2021, USACE 1995, USCG 2012).

5.3.8.2 Environmental Consequences

The Proposed Action may result in some construction-related sedimentation and runoff during excavation and fill activities from the proposed airport improvements. Impacts from construction of the causeway and staging pad to surface waters include placement of 0.88 acres fill into the Yukon River for a period of approximately two years. Fill would be comprised of riprap and gravel and would be removed once material importing was completed.

5.3.8.3 Minimization and Mitigation

Best management practices (BMPs) will be implemented during construction to minimize erosion and sedimentation; BMPs are summarized in Section 6.2, *Water Quality*.

5.3.9 Hazardous Materials, Pollution Prevention, and Solid Waste

5.3.9.1 Affected Environment

According to ADEC's contaminated sites database, there are two known active contaminated sites located within the Saint Mary's project area. The first site located west of the runway and known as FAA Saint Mary's Consolidated Bldg. (Hazard ID 3052), involved the decommissioning and removal of four non-regulated heating oil tanks in June 1998. Soil sampling near the tanks indicate contamination, but the concentrations meet cleanup levels with the exception of one benzene detection. However, benzene was not found at shallower depths and there are no other contaminants of concern exceeding cleanup levels, so ADEC believes that the soil contamination is limited and does not present an unacceptable risk to human health or the environment. Groundwater monitoring is ongoing at this site (ADEC 2021c).

The second site, located on the existing airport apron, known as MarkAir – Saint Mary's Airport (Hazard ID 1878), contains aviation gas contamination on property leased from DOT&PF. A 1996 Phase II Environmental Site Assessment found a 1,000-gallon aboveground diesel storage tank to be the likely spill source. Adjacent lease lots also show signs of historic aviation gasoline and heating oil spills with high levels of diesel range organics and benzene contamination in soil samples taken at depths 3 to 14 inches below the ground surface. After an ADEC review of the file in 2009, further work was recommended for the site:

- Areas of contaminated soil should be removed to the best extent practical and stockpiled and land farmed on site
- Confirmation soil samples should be collected at the excavation depths to verify contaminated soil removal

As of September 21, 2012, all former tanks and dispensers have been removed.

5.3.9.2 Environmental Consequences

The Proposed Action may occur within areas that have been previously contaminated and cleaned up near the existing runway and apron. Project design would avoid these previously contaminated sites to the greatest extent possible. However, while impacts to contaminated soils are not anticipated, there is the potential for discovering hazardous materials during construction. Should additional contaminated soils and waters be encountered during construction, all work in the contaminated zone would be stopped and ADEC would be consulted to coordinate appropriate cleanup actions. The contractor would be required to dispose of these soils and water in an ADEC approved manner. The Proposed Action would be conducted in accordance with state and federal laws regarding handling, disposal, and spill response for hazardous materials, waste, and substances.

The likelihood of encountering contaminated sites in the vicinity of the proposed material sites is low due to the average distance between the contaminated sites and the proposed material sites.

The Proposed Action would generate relatively small amounts of solid wastes from construction that would be disposed of at the local landfill, which has the capacity to receive the solid waste.

Hazardous materials used during construction would be limited to minor amounts of fuel, lubricants, hydraulic fluids, cleaning solvents, paint, and marking materials. Project activities would not generate hazardous materials and the project is anticipated to have no hazardous waste impacts.

5.3.9.3 Minimization and Mitigation

A Hazardous Materials Response Plan and Spill Prevention, Control, and Countermeasures Plan would be required from the construction contractor to address appropriate storage, use, and disposal of any hazardous materials present during construction. All construction waste would be managed and disposed of in accordance with all state and federal solid-waste-management laws and regulations. On-going consultation with ADEC would be conducted during the design phase to determine if contamination may be present in the environment surrounding the project area and whether mitigation measures would need to be implemented during construction. If contaminated soil or groundwater is encountered during construction, the contractor would immediately notify DOT&PF and stop work until coordination on the appropriate response occurs with ADEC.

5.3.10 Historic, Architectural, Archaeological, and Cultural Resources

5.3.10.1 Affected Environment

Saint Mary's Airport

According to the Alaska Heritage Resources Survey (AHRS), there are no previously documented cultural resources or properties within the Saint Mary's project area (Office of History and Archaeology [OHA] 2021). The Kotlik-Marshall Trail (RS 2477 Trail #120) is mapped on the surface of the Yukon River and follows the east bank bisecting the Boreal Fish Camp; however, the trail is recorded as a winter mail route. According to the Alaska Department of Natural Resources (ADNR) Division of Mining, Land and Water (ADNR 2021):

> "This trail was improved and maintained by Alaska Road Commission from 1922 to 1947. It was also a winter mail route. A substantial part of the area covered by this trail was reserved as Fort St. Michael in 1897 but returned to general BLM management in 1900. Another substantial part of the area was reserved as Yukon Delta Reservation in 1909, revoked in 1922 and returned to general BLM management until 1968."

In 2003, archaeologists from the Alaska Office of History and Archaeology (OHA) conducted a pedestrian survey with judgmental test excavations of sections of the Saint Mary's Airport property in preparation for proposed upgrades (DePew and Pendleton 2003). No cultural resources were discovered during the survey.

In 2018 Northern Land Use Research Alaska, LLC (NLURA) completed a desktop cultural resource study and review of the Saint Mary's project area (NLURA 2018).

Barge Landing

NLURA's 2018 desktop cultural resource study identified one AHRS site adjacent to the barge landing. The Old Fish Camp (KWI-00021) is located roughly 900 meters downstream along the Yukon River. In 2021 DOWL completed documentation of the Boreal Fisheries Facility (KWI-00087) and recommended it ineligible for the National Register of Historic Places (NRHP).

Material Sites

<u>Pitka's Point and Saint Mary's Material Sites</u>

In 2012, NLURA conducted a cultural resource survey of the Pitka's Point and Saint Mary's material sites. NLURA's survey consisted of pedestrian transects and a single test excavation, during which no cultural resources were identified (NLURA 2012). Both material sites were included in the desktop cultural resource study conducted by NLURA in 2018. There are no documented cultural resources adjacent to either material site.

Mountain Village Material Site

According to the AHRS, there are no previously documented cultural resources or properties within the existing Mountain Village material site and access road (OHA 2021). There are also no documented cultural resources adjacent to the project area.

Other Material Sites

Cape Nome Material Site

There is one previously documented cultural resource in the project area for the Cape Nome material site (OHA 2021). The Nome-Council Road (NOM-00242/SOL-00172) was determined to be ineligible for listing on the NRHP. Several sites are adjacent to the project area, including a WWII-associated site (NOM-00048), a prehistoric Iñupiat village site (NOM-00009), gravesites (NOM-00162 and NOM-00062), and portions of the Unalakleet-Nome trail, which is associated with the Iditarod Historic Trail (NOM-00074/SOL-00127).

Potential Marshall Material Site

There are no previously documented cultural resources in the project area for the potential Marshall material site (OHA 2021). There is one site adjacent to the proposed material site. RUS-00037 consists of the remains of a WWII radio tower situated near the summit of Pilcher Mountain, roughly 915 meters away from the material site. This site was determined to be ineligible for listing in the NRHP. In the summer of 2021, Stephen R. Braund & Associates (SRB&A) conducted survey of the proposed project area for the Marshall material site, during which no cultural resources were identified. SRB&A's report describing the methods and results of this work is forthcoming.

5.3.10.2 Environmental Consequences

No previously identified cultural resources sites are located within the primary project area (Saint Mary's Airport and the Pitka's Point and Saint Mary's material sites). Much of the project area around the Saint Mary's Airport and the Pitka's Point and Saint Mary's material sites have been previously surveyed for cultural resources. Sites located within other portions of the project area (Boreal Fisheries Facility and Nome-Council Road) are unlikely to be impacted by project activities.

Potential project effects to previously unknown cultural resources are being considered under Section 106 of the National Historic Preservation Act and through consultation with the State Historic Preservation Officer and affected Indian Tribes.

Permitted Material Sites

The Saint Mary's material site currently operates under standard permit stipulations, including compliance with Section 106 of the NHPA.

The Cape Nome material site currently operates under standard permit stipulations, including compliance with Section 106 of the NHPA.

Unpermitted and Potential Material Sites

Should materials from the Mountain Village material site be used for the project, the quarry would have to meet standard permit stipulations, including compliance with Section 106 of the NHPA.

Should the Marshall material site be developed, the quarry would have to meet standard permit stipulations, including compliance with Section 106 of the NHPA.

5.3.10.3 Minimization and Mitigation

Although there are two cultural resource sites located within the project area, they are both ineligible for the NRHP. Moreover, neither is anticipated to be adversely impacted by project activities. Therefore, no minimization and mitigation measures are proposed or would be required.

5.3.11 Wetlands

5.3.11.1 Affected Environment

A wetland delineation completed in four study areas identified areas that may fall under USACE jurisdiction, per Section 404 of the CWA (Appendix E, *2021 Wetland Delineation*). The wetland delineation study area totaled 285.8 acres (See Table 6 and Figure 7 Wetland Study Areas).

Table 6: Wetland Study Area Descriptions

Name	Description	Acres
Airport study area	Areas within 300 feet of existing disturbance (operational surface of the airport); 50-foot-wide area on both sides of the Airport Access Road in area of potential culvert replacement; temporary barge landing area	234.6
Pitka's Point study area	Areas within 100 feet of the existing developed extent	19.9
Mountain Village study area	Areas within 100 feet of the existing developed extent	31.3
	Total	**285.8**

Vegetation in all study areas is typical of the lowland tundra found throughout the Yukon-Kuskokwim Delta. Adapted to conditions of high winds, little precipitation and discontinuous permafrost, the vegetation is largely graminoid herbaceous, scrub shrub, and dwarf shrub with occasional stands of open broadleaf forest. The airport and Saint Mary's material site study areas are located along a ridge top, and near the airport, there are small stream headwaters that drain away in all directions, and eventually reach the Yukon River. Thick stands of willow and alder are present in shallow drainages. Continuous permafrost is present near the airport (DOT&PF 2007).

In all study areas, wetlands are characterized by tussock cotton-grass (*Eriophorum vaginatum*), Bigelow's sedge (*Carex bigelowii*), leafy tussock sedge (*Carex aquatilis*), and shrubs such as marsh labrador tea (*Rhododendron tomentosum)*. Willow shrubs, such as felt-leaf willow (*Salix alaxensis*) and diamond-leaf willow (*Salix pulchra*), were among the dominant species outside of wet meadows. In general, soils in wetlands had a thick organic layer underlain by permafrost.

Streams were largely absent from all study areas. All wetlands within each study area were connected to tributaries of the Yukon River.

Most shrub thickets were indicative of uplands and typically had 75% or greater cover of shrubs five feet tall or taller. Common species included diamond-leaf willow, Barclay's willow (*Salix barclayi*), and speckled alder (*Alnus incana*). The understory was composed of herbaceous graminoids such as bluejoint (*Calamagrostis canadensis*) and field horsetail *(Equisetum arvense*).

The 234.6-acre Airport study area contains approximately 43.7 acres of jurisdictional wetlands (18.7% of the study area), 3.4 acres of non-jurisdictional wetlands (1.4%), 0.3 acre of other Waters of the US (WOUS) (0.1%), and approximately 187.2 (79.8%) acres of upland (79.9%).

The 19.9-acre Pitka's Point study area contains 0.3 acre of jurisdictional wetlands (1.6%) and 19.6 acres of upland (98.4%).

The 31.3-acre Mountain Village study area contains 6.1 acres of jurisdictional wetlands (19.5%), 1.0 acre of non-jurisdictional wetlands (3.2%) and 24.2 acres of uplands (77.3%).

5.3.11.2 Environmental Consequences

Table 7 summarizes effects from the project and are shown on Figure 8 Wetland Impacts (Saint Mary's). To extend and widen the runway safety areas, improve airport drainage, construct the causeway and staging area, and improve the access road between the airport and the causeway, the project would permanently place 48,500 cubic yards (CY) of fill (including select material, Type C, Class I and II riprap, and gravel) into approximately 3.12 acres of wetlands and waters of the U.S. (Table 1).

Table 7: Wetland Impacts by Proposed Action

Proposed Action	Wetland Impacts (acres)	Waters of the US Impacts (acres)
Airport Improvements	2.6	0.00
Causeway	0.00	0.59
Causeway Staging Area	0.00	0.29
Culvert	0.01	0.00
Total	2.61	0.88

5.3.11.3 Minimization and Mitigation

A request for a Jurisdictional Determination will be submitted to USACE, along with a Section 404 individual permit for unavoidable wetland fill. Concurrent with the Section 404 process, an ADEC Section 401 Water Quality Certification would also be obtained. All permit stipulations and special conditions would be followed. USACE will determine appropriate compensatory mitigation for wetland and riverine impacts, if required, during the permitting process.

Proposed wetland avoidance and minimization measures for the Proposed Action are listed below:

- The Proposed Action's elements are designed with minimal dimensions to meet their design function.
- All staging and driving surfaces will be limited to uplands.
- Proposed Action components are sited to avoid impacts to wetlands by using existing embankments and disturbed areas where practicable.
- The Proposed Action's footprint would be staked prior to construction and maintained for the duration of the project, to avoid additional impacts to wetlands from construction activities.
- Materials would be stockpiled within the Proposed Action's fill footprint, or staged in developed or upland areas, to avoid impacting additional wetlands.

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6.0 SUMMARY OF ENVIRONMENTAL COMMITMENTS

The Proposed Action would include standard BMPs and adherence to requirements in applicable permits, such as the APDES Construction General Permit, Section 404 Permit to fill wetlands, and the Section 401 Water Quality Certification. Additional measures outlined in this chapter are project-specific and would be included in construction specifications.

6.1 Water Quality

Environmental commitments related to the PWS DWPA include the following:

- Stormwater discharges would be controlled within the PS DWPA, whose boundaries overlap with the Proposed Action.
- Project activities that could significantly change the natural surface water drainage or groundwater gradient would be restricted to protect public drinking water.
- All data related to the project would be made available to ADEC upon request.
- DOT&PF would limit the amount of equipment storage, maintenance, and operation, and other potential sources of contamination, within Zones A and E of the PWS DWPA.
- BMPs would be implemented where equipment storage, maintenance, and operation, or other potential sources of contamination, are located within a PWS DWPA and that would minimize the potential for contamination to enter water sources used by a PWS.
- DOT&PF would immediately notify the nearby PWS of any identified potential contamination, such as spills or excess erosion.

6.2 Biological Resources

- Fill placement, pile installation and removal timeframes for the causeway would be directed by ADF&G and NMFS to minimize impacts during sensitive time periods when salmon migrate through the area.
- No impact hammers would be used. Piles would be driven as deep as possible with a vibratory hammer for approximately 6 hours over 4 days (non concurrent).
- DOT&PF would comply with the Migratory Bird Treaty Act by adhering to the USFWS recommended window to avoid mechanized vegetation clearing (May 1 through July 15), unless a mitigative work plan is approved by DOT&PF.
- To avoid introducing and spreading invasive species, the contractor would pressure wash all wheeled and tracked construction equipment prior to mobilization and upon construction completion.

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7.0 COORDINATION

7.1 Agency Correspondence

Agency scoping for the project was conducted May 7 through June 7, 2021. Scoping letters describing the project and soliciting information were sent to the appropriate state and federal agencies, tribal organizations, and other entities (summarized in Table 8). Responses to scoping are in Appendix F, *Summary of Consultation and Coordination*.

Table 8: Summary of Agency Coordination

First Name	Last Name	Title	Organization	Organization Type	Response
Doug	Cooper	Branch Chief	USFWS Conservation Planning	Resource/ Regulatory	Yes
Matt	Eagleton	Deputy Director/Regional Essential Fish Habitat Coordinator	NOAA Fisheries Habitat	Resource/ Regulatory	Response from Sean McDermott
Sean	McDermott	Supervisory Marine Habitat Resource Specialist	NOAA Marine Mammals	Resource/ Regulatory	No
			USACE Regulatory	Resource/ Regulatory	No
Cynthia	Heil	Environmental Program Manager	DEC Air Quality	Resource/ Regulatory	Response from Adeyemi Alimi
Terri	Lomax	Environmental Program Manager	DEC Water Quality Standards Assessment & Restoration	Resource/ Regulatory	No
Erin	Gleason	Environmental Program Specialist	DEC Contaminated Sites	Resource/ Regulatory	Yes
Jeff	Estensen	Area Management Biologist	ADF&G Commercial Fisheries	Resource/ Regulatory	No
Audra	Brase	Regional Supervisor	ADF&G Habitat Division	Resource/ Regulatory	No
Liz	Ortiz	Archaeologist	SHPO	Resource/ Regulatory	Yes
Jeanne	Proulx	Regional Manager Northern Region	DNR Mining, Land, and Water	Resource/ Regulatory	No
Sven	Paukan	Mayor	City of Saint Mary's	Local/Community	No
Marvla	Sipary	City Clerk	City of Saint Mary's	Local/Community	No
Walton	Smith	City Manager	City of Saint Mary's	Local/Community	No
Peter	Andrew	Mayor	City of Mountain Village	Local/Community	No
Joseph	Kitka	Mayor	City of Marshall	Local/Community	No
Herbert	David	Superintendent	Saint Mary's School District	Local/Community	No
Andrew	Guy	President/Chief Executive Officer	Calista Corporation	Native/Tribal	No
William	Ashton	President	Nerkikmute Native Corporation	Native/Tribal	No

First Name	Last Name	Title	Organization	Organization Type	Response
Tisha	Kuhns	VP of Land and Natural Resources	Calista Corporation	Native/Tribal	Response from Mary Martinez
Flora	Paukan	President	Algaaciq Native Village	Native/Tribal	No
James C.	Landlord	First Chief	Asa'carsarmiut Tribe	Native/Tribal	No
Margaret	Guidry	President	Native Village of Pitka's Point	Native/Tribal	No
Gail	Alstrom-Beans	President	Yupiit of Andreafsky	Native/Tribal	No
Richard	Alstrom	Tribal Administrator	Yupiit of Andreafsky	Native/Tribal	No
Kaitlyn	DelaCruz	Tribal Workforce Development Division	Alaska Village of Council Presidents	Native/Tribal	No
Scott	Hess	Association of Village Council Presidents Unit 2	Alaska Village of Council Presidents	Native/Tribal	No
Loren	Peterson	President	Azachorok, Incorporated	Native/Tribal	No
Bibianna	Sage	President	Pitka's Point Native Corporation	Native/Tribal	No
Nicolai	Duny	President	Native Village of Marshall	Native/Tribal	No
Dolores	Hunter	Chair	Maserculiq, Incorporated	Native/Tribal	No
Florence	Busch	President	Saint Mary's Native Corporation	Native/Tribal	No
Robert	Kelley	President and CEO	Grant Aviation	Community	No
Rick	Zerkel	President	Lynden Air Cargo, LLC	Community	No
Gideon	Garcia	General Manager	Northern Air Cargo	Community	No
Robert	Everts	President and CEO	Everts Air Cargo	Community	No
Robert	Mckinney	President	Ravn Alaska	Community	Response from Callie Delgado
William	Riley	Station Manager	Ryan Air	Community	No

7.2 Section 106 Consultation

Section 106 consultation initiation letters were sent to the Alaska SHPO on June 8, 2021 and to these consulting parties:

- Association of Village Council Presidents
- Algaaciq Native Village, Asa'carsarmiut Tribe
- Azachorok, Incorporated, Calista Corporation
- Native Village of Pitka's Point, Nerkikmute Native
- Corporation, Pitka's Point Native Corporation
- Saint Mary's Native Corporation
- Yupiit of Andreafsky
- Native Village of Marshall, Maserculiq, Incorporated
- City of Marshall
- City of Saint Mary's

SHPO responded on June 3, 2021 with no objections to the proposed Area of Potential Effects (Appendix F).

A Findings letter describing why no historic properties would be affected by the proposed Project pursuant was sent to SHPO and consulting parties on October 4, 2021 (Appendix F).

7.3 Public Scoping

DOT&PF held a virtual public scoping meeting on June 3, 2021 with five people in attendance. Public comments from the meeting are in Appendix E. Notification of the scoping process was advertised through:

- Phone calls directly made to the following entities to discuss the project, optimal meeting dates, and who invites should be extended to:
- Andreafsky (St. Mary's Tribal Council)
- Algaaciq Native Village Tribal Council
- City of St. Mary's
- Asa'carsarmiut Tribe (Tribal Council)
- City of Mountain Village
- Native Village of Pitka' s Point
- City of Marshall
- Marshall Traditional Council
- Ohogamiut Traditional Council
- Saint Mary's School District
- Nerklikmute Native Corporation
- Calista Corporation
- Alaska Village of Council Presidents
- Azachorok, Incorporated
- Saint Mary's Native Corporation
- Flyers posted in Mountain Village, Saint Mary's, and Marshall
- Invitation and link to the virtual public meeting posted on Facebook at the Alaska DOT&PF - Home/Events.
- A meeting notice posted online at Alaska Department of Transportation and Public Facilities, Northern Region: https://dot.alaska.gov/nreg/stmarys/
- A meeting notice posted online at: https://saintmarysairportimprovements.com/

In addition, DOT&PF held a meeting on June 3, 2021 with representatives of Calista Corporation, Maserculiq Incorporated, and the City of Marshall to discuss access permissions for field work, to determine the preferred area on Pilcher Mountain where material site development would begin, and to determine the status of project development. Meeting minutes are included in Appendix E, *Summary of Consultation and Coordination*.

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8.0 LIST OF PREPARERS

Table 7 provides the list of preparers.

Table 7: Preparers of the Draft Environmental Assessment

Name	Agency	Role	Profession
Christopher Johnston, P.E.	DOT&PF	Reviewer	Engineer and Project Manager
Brett Nelson	DOT&PF	Reviewer	Regional Environmental Manager
Melissa Jensen	DOT&PF	Reviewer	Environmental Impact Analyst
Kristen Hansen	Consultant	Quality Control	Senior NEPA Practitioner
Jake Anders	Consultant	Contributing Author	Cultural Resources
Emily Creely	Consultant	Author	Environmental Specialist
Zachary Huff	Consultant	Author	Environmental Specialist
Donna Robinson	Consultant	Author	Environmental Specialist
Tim Jameson	Consultant	Maps and figures	Geographic Information Systems Specialist

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APPENDIX A:

FIGURES

Proposed Project Limits

0 4 8 Mile

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

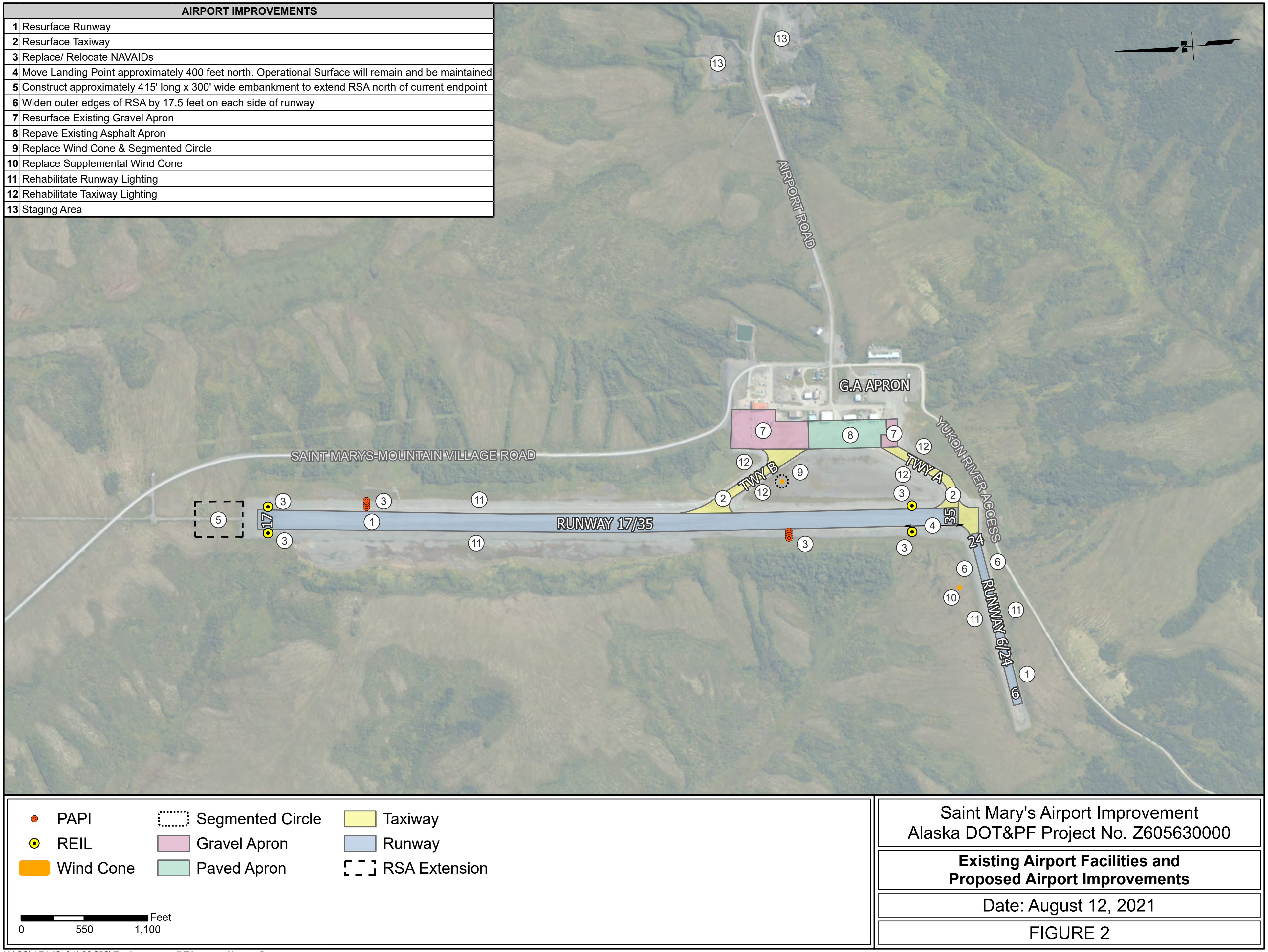
Project Location & Vicinity

Date: August 12, 2021

FIGURE 1

K:\23\15143-01\60GIS\Environmental\EA.aprx Location & Vicinity Map

AIRPORT IMPROVEMENTS	
1	Resurface Runway
2	Resurface Taxiway
3	Replace/ Relocate NAVAIDs
4	Move Landing Point approximately 400 feet north. Operational Surface will remain and be maintained
5	Construct approximately 415' long x 300' wide embankment to extend RSA north of current endpoint
6	Widen outer edges of RSA by 17.5 feet on each side of runway
7	Resurface Existing Gravel Apron
8	Repave Existing Asphalt Apron
9	Replace Wind Cone & Segmented Circle
10	Replace Supplemental Wind Cone
11	Rehabilitate Runway Lighting
12	Rehabilitate Taxiway Lighting
13	Staging Area



Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Existing Airport Facilities and Proposed Airport Improvements

Date: August 12, 2021

FIGURE 2

K:\23\15143-01\60GIS\Environmental\EA.aprx Airport Improvements

Existing Causeway
Proposed Causeway
Proposed Staging Area
Proposed Culvert Replacement

Feet
0 120 240

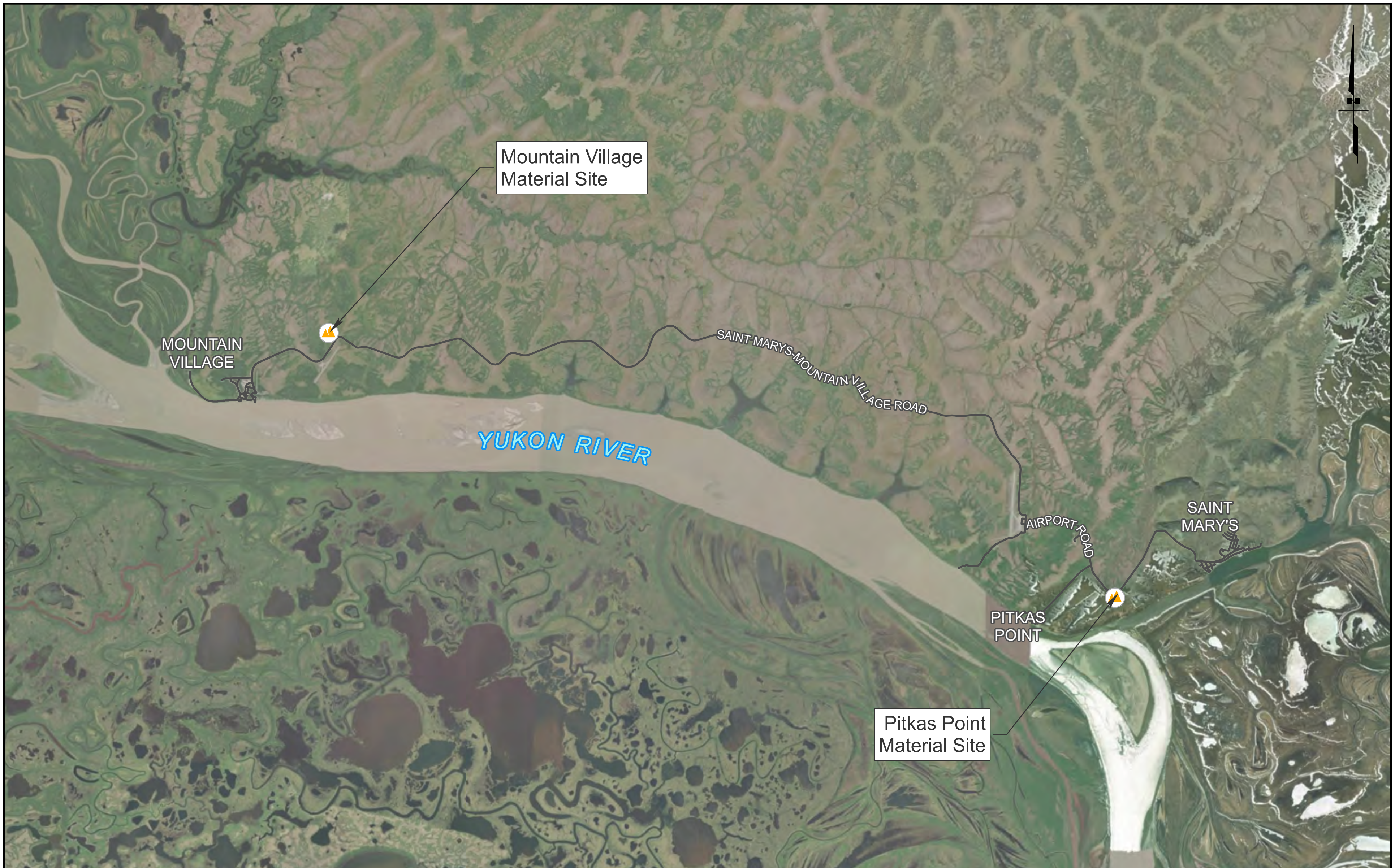
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Proposed Temporary Barge Landing

Date: August 12, 2021

FIGURE 3

K:\23\15143-01\60GIS\Environmental\EA.aprx Proposed Causeway



Unpermitted Existing Material Site

DOT&PF Road

0 1.5 3 Miles

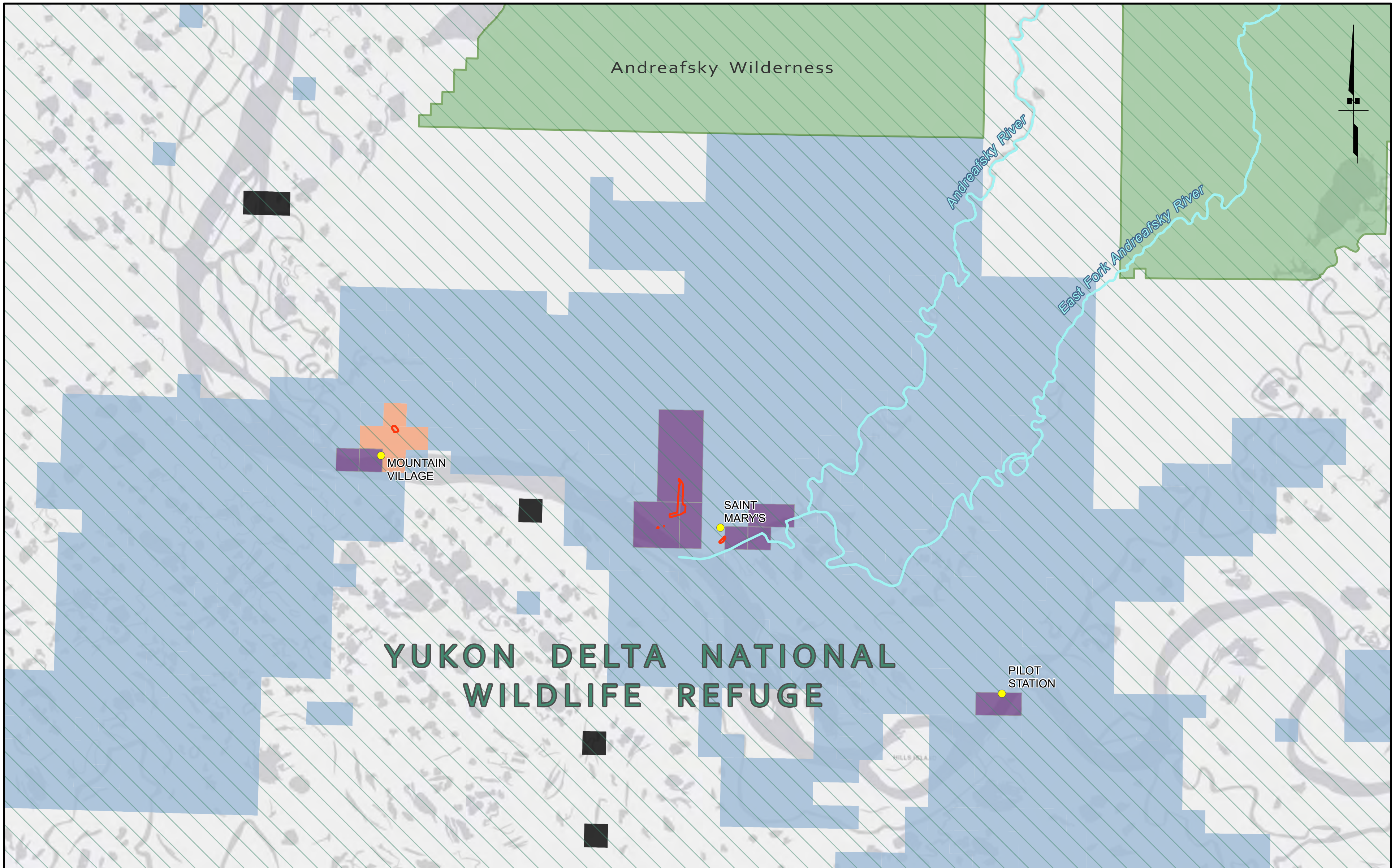
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Existing Material Sites - Unpermitted

Date: August 12, 2021

FIGURE 4

K:\23\15143-01\60GIS\Environmental\EA.aprx Pitkas Point & St Mary's Material Site
Imagery Layer: Earthstar Geographics



Proposed Project Limit
akplacenames
National Wild & Scenic River
National Wilderness Area
National Wildlife Refuge Boundary
State Selected
ANCSA Owned Land
ANCSA Selected
State and ANCSA Land
Bureau of Land Management Public Land
Municipal or Private Owned Land
Other State Owned Land

Miles
0 3 6

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

General Land Ownership

Date: August 12, 2021

FIGURE 5

K:\23\15143-01\60GIS\Environmental\EA.aprx Land Ownership
Imagery Layer: Esri, HERE, Garmin, USGS, EPA, NPS

Zone A Groundwater (*Several Months' Time of Travel or Surface Water 1000-ft Buffer*)

Zone B Groundwater (*2-Year Time of Travel or Surface Water 1-mile Buffer*)

Feet
0 600 1,200

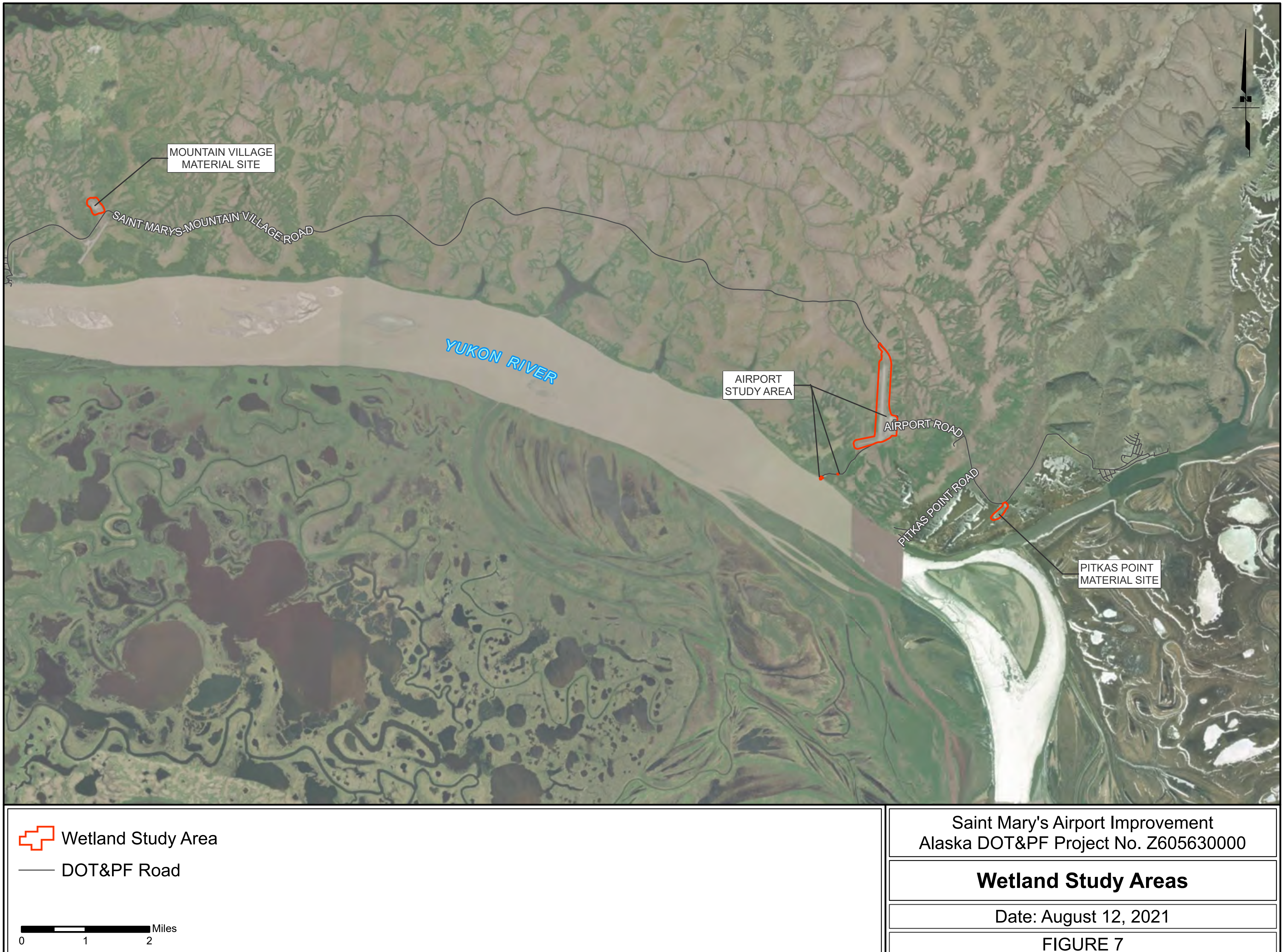
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Drinking Water Protection Zones

Date: August 12, 2021

FIGURE 6

K:\23\15143-01\60GIS\Environmental\EA.aprx Pitkas Pt DEC Drinking Water Protection



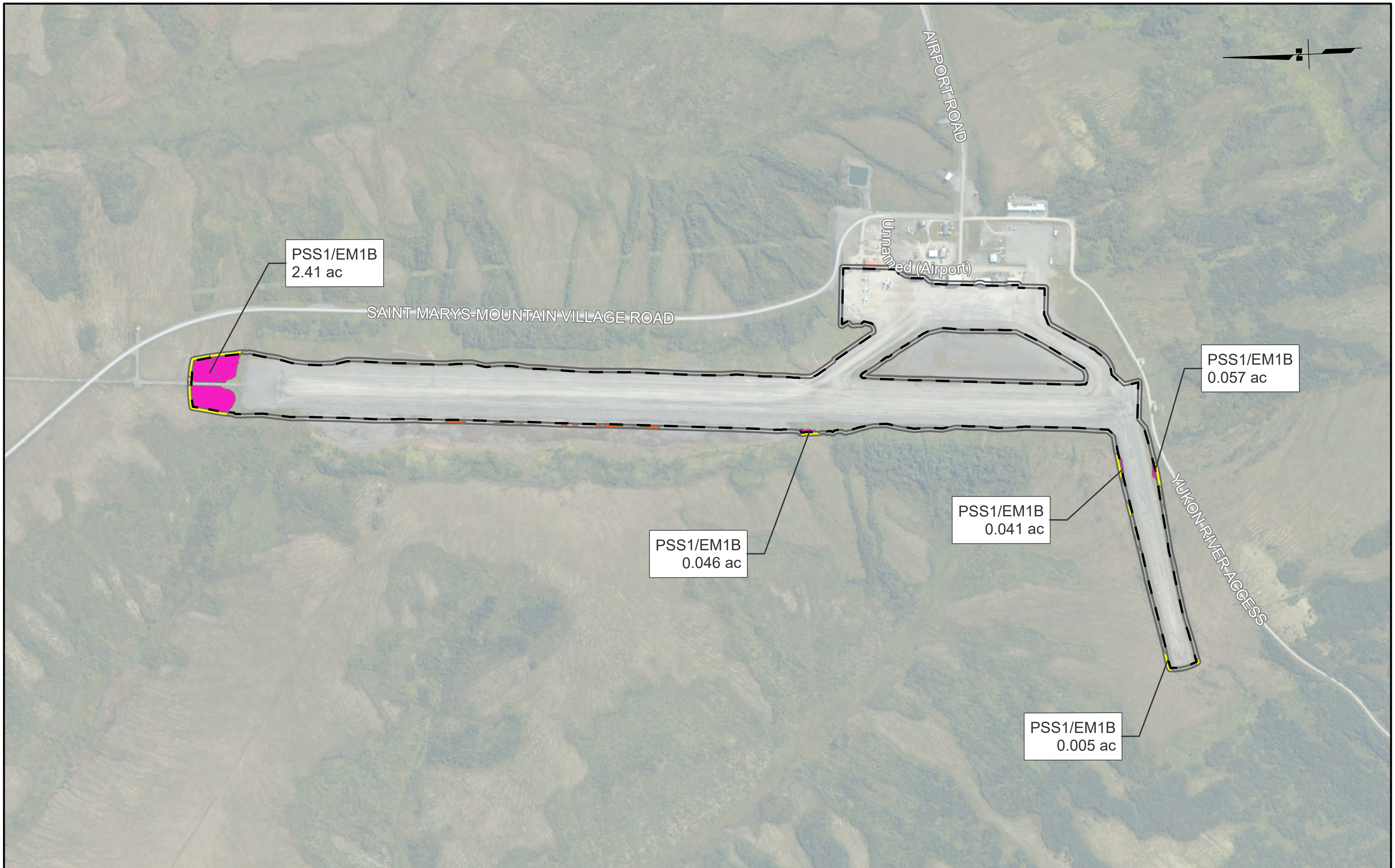
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Wetland Study Areas

Date: August 12, 2021

FIGURE 7

K:\23\15143-01\60GIS\Environmental\EA.aprx Wetland Study Areas
Imagery Layer: Earthstar Geographics



Project Grading Limits
Temporary Impact

Impacted Wetland (Cowardin)
PSS1/EM1B

Temporary Impacted Wetland (Cowardin)
PEM1C (*0.328 ac*)
PSS1/EM1B (*1.054 ac*)

Feet
0 500 1,000

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Wetland Impacts (Saint Mary's)

Date: August 12, 2021

FIGURE 8

K:\23\15143-01\60GIS\Environmental\EA.aprx St Mary Wetland Impact

Proposed Causeway
Proposed Culvert Replacement
Proposed Staging Area

Impacted Wetland (Cowardin)
PEM1/SS1C
R2UBH

0 120 240 Feet

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Wetland Impacts
(Proposed Causeway and Culvert)

Date: August 12, 2021

FIGURE 9

K:\23\15143-01\60GIS\Environmental\EA.aprx Causeway Wetland Impact

APPENDIX B:

DRAFT ENGINEER'S DESIGN REPORT

Saint Mary's Airport (KSM)

Airport Improvements Project

DOT&PF No. Z605630000

Draft Engineer's Design Report

Prepared by:

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August 2021

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Draft Engineer's Design Report

Saint Mary's Airport (KSM)

Airport Improvements Project

DOT&PF No. Z605630000

Prepared for:

State of Alaska
Department of Transportation and Public Facilities
Northern Region Design & Construction - Aviation

Prepared by:

DOWL
3535 College Road, Suite 100
Fairbanks, AK 99709

August 2021

TABLE OF CONTENTS

TABLES

APPENDICES

LIST OF ACRONYMS

AC .... FAA Advisory Circular
AOA .... Airport Operations Area
ALP .... Airport Layout Plan
ARC .... Airport Reference Code
CABC .... Crushed Aggregate Base Course
CASC .... Crushed Aggregate Surface Course
CSPP .... Construction Safety & Phasing Plan
DOT&PF .... Alaska Department of Transportation & Public Facilities
EEB .... Electrical Equipment Building
FAA .... Federal Aviation Administration
FAR .... Federal Aviation Regulations
GS .... Glideslope
ICAP .... Indirect Cost Allocation Plan
ILS .... Instrument Landing System
KSM or PASM .... Saint Mary's Airport
LOC .... Localizer
M&O .... Maintenance and Operations
MIRL .... Medium Intensity Runway Edge Lights
MALSR ..... Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
NAVAID .... Navigational Aid
OFA .... Object Free Area
PAPI .... Precision Approach Path Indicator
REIL .... Runway End Identifier Lights
RPZ .... Runway Protection Zone
RSA .... Runway Safety Area
RWY .... Runway
TDG .... Taxiway Design Group
TOFA .... Taxiway Object Freeway Area
TSA .... Taxiway Safety Area
TWY .... Taxiway
TL .... Taxilane
VASI .... Visual Approach Slope Indicator

Notice to Users

This report reflects the current state of design and reflects design decisions made at the time of publication. Changes frequently occur during the design process that may significantly affect final design. Persons who may rely on information contained in this document should check with DOT&PF for the current design. Contact the Project Manager, Christopher Johnston, at 907-451-2322 or chris.johnston@alaska.gov for this information.

1.0 INTRODUCTION

1.1 Foreword

Saint Mary's Airport (KSM) is located approximately seven road miles west of the community of Saint Mary's, which lies on the north bank of the Andreafsky River five miles from the confluence with the Yukon River. Saint Mary's is located 450 air miles west-northwest of Anchorage and 515 air miles southwest of Fairbanks. The community is served by barge and air transport. The Saint Mary's barge landing on the Andreafsky River provides the only deep-water dock in the Yukon Delta. A 22-mile local gravel road links the village of Saint Mary's to the villages of Andreafsky, Pitka's Point, and Mountain Village. This road is not maintained during winter months.

KSM has two runways: Runway 17/35 is a gravel runway measuring 6,000-feet by 150-feet, and Runway 6/24 is a gravel runway measuring 1,520-feet by 60-feet. Gravel taxiways (Taxiways A and B) connect Runway 17/35 to the 250-foot by 1,360-foot main apron. The southern half of the main apron is paved (150,000 SF) and the remainder of the apron is surfaced with gravel. Taxiway A also connects Runway 17/35 to the 295-foot by 345-foot gravel General Aviation (GA) Apron (DOT&PF 2020).

1.2 Scope of Work

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) proposes to upgrade existing facilities at KSM. Work will include the following:

<u>DOWL Design Elements:</u>

- Resurfacing of unpaved Runway 17/35 and extending the Runway Safety Area (RSA) north approximately 450 feet.
- Resurfacing of unpaved Runway 6/24 and widening of existing RSA embankment by approximately 35 feet.
- Resurfacing unpaved Taxiways A and B
- Resurfacing the transient apron and the unpaved portion of the main apron
- Repaving the main asphalt apron
- Addressing drainage issues within the embankment and structural sections throughout.
- Drainage improvements, including new conveyance ditches and culvert replacement
- Demolition of existing FAA-owned Navigational Aids, including Runway 17 Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) and existing Visual Approach Slope Indicators (VASI).
- Demolition of existing lighting equipment.
- Layout of new lighted signs.

<u>FAA Navigational Aid Design Elements</u>

The FAA will complete design of new FAA Navigational Aids via a Reimbursable Agreement between FAA and DOT&PF. FAA Design elements include:

- New Precision Approach Path Indicators (PAPI) for each end of Runway 17/35
- New Runway End Identifier Lights (REIL) at the Runway 17 threshold and the Runway 35 displaced threshold.

Electrical Design Elements

New electrical design will be completed under a separate contract. Electrical design components include the following:

- Replacement of all existing runway edge lighting with new Medium Intensity Runway Edge Lighting (MIRL) systems, including new lighting regulators.
- Replacement of existing Medium Intensity Taxiway Edge Lighting (MITL) on Taxiways A and B, and west apron, including new regulators.
- Design of new power service to new lighted airfield signs on provided layout.
- Replacement of the primary wind cone and foundation.
- Replacement of the segmented circle.
- Replacement of the supplementary wind cone and foundation.
- Replacement of the Electrical Equipment Building and backup generator.
- Replacement of the airport beacon.

The DOT&PF anticipates that construction of this project will begin in 2022 and is expected to last two construction seasons.

1.3 Draft Engineer’s Design Report (EDR) Objectives

This draft EDR is intended to provide a narrative of the design process; it describes the technical aspects of the project design, including a review of existing conditions, statement of design criteria and assumptions, modifications to DOT&PF standards, phasing elements, and preliminary quantity and cost estimates. Note that since the geotechnical investigation at the project site is still pending, substantial design changes to materials and typical sections that would not normally occur after this point in the design process may be necessary.

Section 2, Design Analysis, generally follows the DOT&PF Alaska Aviation Preconstruction Manual, Attachment E *Engineer’s Design Report Outline.*

2.0 DESIGN ANALYSIS

2.1 Airport Layout Considerations

Dimensions, grades, horizontal, and vertical layout will conform to the current FAA Advisory Circular (AC) 150/5300-13A, Change 1, *Airport Design*. Airport dimensions will generally follow the near-term layout provided in the recent Airport Layout Plan (ALP) update, with exceptions as noted in the tables below. Runway 17/35 will be designed to Airport Design Group (ADG) B-III, including extending the RSA embankment north of Runway 17 and displacing the runway 35 threshold north to provide the standard 600' RSA prior to each runway threshold. Runway 17/35 design dimensions are shown in **Table 2-1** below.

Table 2-1 – Summary of Runway 17/35 Design Dimensions

Dimension	Existing	ADG B-III Standard	Design
Runway Length	6,000'	-	6,000'
Runway Width	150'	100'[1]	150'
Runway Shoulder Width	20'	20'	20'
RSA Width	300'	300'	300'
RSA Length beyond Runway Threshold (Runway 17 / Runway 35 end)	195'/185'	600'/600'	600'/600'
Runway Object Free Area (OFA) Width	800'	800'	800'
Runway OFA Length Beyond Runway Threshold	1000'	600'	600'

[1]Existing 150' runway width will be maintained to support critical Lockheed C-130 (FAA Design Group C-IV) revenue operations without special operational procedures that would be required with a 100' runway width. See *St. Mary's Airport Layout Plan Narrative Report*, July 2020.

Runway 6/24 will be designed to ADG A-I, except the RSA width will be widened to the ultimate ADG B-II standard as shown in the ALP. Runway 6/24 design dimensions are shown in **Table 2-2 below**.

Table 2-2 – Summary of Runway 6/24 Design Dimensions

Dimension	Existing	ADG A-I Standard	Design
Runway Length	1,520'	-	1,520'
Runway Width	60'	60'	60'
Runway Shoulder Width	10'	10'	10'
RSA Width	115'	120'	150'[1]

Dimension	Existing	ADG A-I Standard	Design
RSA Length beyond Runway Threshold	240'/225'	240'	240'
Runway Object Free Area (OFA) Width	250'	250'	250'
Runway OFA Length Beyond Runway Threshold	200'	200'	200'

[1]The Runway Safety Area width will be designed to the B-II ADG as shown in the ultimate configuration in the current Airport Layout Plan.

Taxiways A and B will be designed to Taxiway Design Group (TDG) 3 standards as shown in the current ALP and detailed in **Table 2-3** below.

Table 2-3 – Summary of Taxiways A & B Design Dimensions

Dimension	Existing	TDG 3 Standard	Project Design
Taxiway Width	75'	50'[1]	75'
Taxiway Shoulder Width	20'	20'	20'
Taxiway Edge Safety Margin	10'	10'	10'
Taxiway Safety Area (TSA) Width	118'	118'	118'
Taxiway Object Free Area (TOFA) Width	186'	186'	186'

[1]The existing 75-foot taxiway width will be maintained, as a reduction in taxiway width would likely impact scheduled freight operations and could reduce the safety and utility of the airport.

Taxiway fillet dimensions will generally follow existing layouts to maintain existing aircraft operations.

2.2 Soils & Grading

Historic Project and Subsurface Data Overview

The following is a summary of key elements from a review of the available historic subsurface investigations available:

- The original runways, taxiways, and aprons were paved in 1977. The pavement had failed by 1978 and was removed from all areas except the main apron. Local soils were used for embankment and aggregates.

- Subsequent projects have resurfaced the runways, taxiways, and aprons with locally obtained aggregate.

- All local soil materials are a variation of sandstone and siltstone, exhibiting low degradation and Nordic Abrasion Test values.

- Existing gravel surfacing material is substandard, with low degradation values that contribute to product breakdown over time, contributing to high amounts of fines. Several previous projects have used locally available aggregates that consistently exhibit low degradation values.

- There are existing embankment drainage issues in many locations. Water is present in the surface and subsurface of many runway, taxiway, and apron areas.

- On Runway 17/35, a 1971 report indicates that all native material was removed down to bedrock and replaced with imported fill. Degradation of surfacing materials over time has been observed and is a contributing factor to the high fines and moisture contents.

- Runway 6/24 appears to have been built on approximately 6’ of fill above 2.5’ of native material consisting of compressed peat and silt. Permafrost degradation is likely occurring beneath the runway embankment.

- The paved portion of the apron originally included 3 inches of asphalt over base course. Currently it consists of approximately 1.5 inches of asphalt. This layer is very brittle and exhibits cracking and heaving under aircraft loading. Historic borings have shown variable groundwater levels and permafrost remaining in some locations. Base and subbase materials have been documented at greater than 15% fines content.

Significant historical geotechnical data has been collected. However, additional subsurface exploration is planned for this project to determine thermal state, presence of thaw sensitive materials or ice, extent of soil degradation, and drainage information that will aid in design of key project elements, including runway resurfacing methods, embankment construction, and new PAPI and REIL foundations. The design team is coordinating with DOT&PF on a focused geotechnical investigation to provide additional borings and subsurface data. Results from this investigation will be included in future reports once they are available. The results of this investigation may substantially impact material selection and typical sections throughout this project.

Required Soils

Soils and aggregates required for this project include FAA and DOT&PF Aviation Specification Crushed Aggregate Surfacing Course (P-299), Borrow (P-152) for the runways, taxiways, and aprons; and Subbase Course (P-154) for embankment. The borrow material will be suitable excavated material from the project or local material sources and will be a 1-inch minus gradation per the borrow definition in Specification P-152. Crushed Aggregate Base Course (P-209) and Hot Mix Asphalt (P-401) aggregates are proposed for the new asphalt on the paved apron and are also expected to be imported.

Uncertainties

Final design of the runway, taxiway, and apron typical sections is pending the results of the geotechnical field program expected to be completed in late summer of 2021. The typical sections and material quantities included in this PIH Draft Engineer’s Design Report are preliminary and based on historical data and assumptions concerning soil conditions. As such, the design, specifications, and cost of the project may need to be substantially revised based on the geotechnical field program’s results.

Available Aggregates

An onsite investigation and review of existing reports was conducted to determine local availability of surfacing aggregates (surface course, base course, and asphalt aggregate), subbase course, and borrow material in existing material sites close to St. Mary's Airport. Originally, sources in Nome, Marshall, Mountain Village, and St. Mary's were considered possible sources for the surfacing aggregates. After the investigation and document review, it was determined that the quality of material from the Mountain Village and St. Mary's material sites would not be suitable for use as surfacing aggregate due to low degradation values. Further, the Mt. Village material is typically of lesser quality than the St. Mary's material and was therefore dismissed as a subbase or borrow source due to the extra haul length required. Current recommendations for design include the following:

- All surfacing aggregates, including Crushed Aggregate Surface Course (P-209), Crushed Aggregate Base Course (P-209), and asphalt aggregates (P-401), will be imported to St. Mary's by barging.

- Borrow (P-152) and Subbase Course (P-154) for embankment fill material and RSA structural sections outside of runway, taxiway, and apron surfaces are proposed to come from existing material sites near the airport or from suitable project excavation.

Internal Drainage & Frost Depth

Internal drainage within the runways, taxiway, and apron areas is generally poor, with high fines contents likely contributing to capillary action, drawing water to the surface. Our proposed typical sections for areas with heavy aircraft loading (all but Runway 6/24) include a geotextile layer that extends from centerline to edge of embankment. This will be a geotextile for separation and drainage within the structural section and will be capable of wicking moisture out of the embankment section. The use of a wicking geotextile of this nature will require ditching or adequate fill slope adjacent to embankment edges to prevent backwards wicking of water from embankment areas back into the structural section. Proposed ditches are described in the drainage section below.

2.3 Drainage

2.3.1 Existing Runoff Patterns

A preliminary review of site conditions and known drainage features indicates runoff generally sheet flows from existing runways, taxiways, and apron areas into surrounding vegetation. Runoff from Taxiway B and the apron areas is collected on the west side and conveyed in ditches to the southeast corner of the intersection of Taxiway B and Runway 17/35, where it enters one of two culverts. One culvert extends north under Taxiway B, and the other extends west under Runway 17/35 and daylights beyond the RSA embankment. The Taxiway B culvert is the lower invert by a few inches. The runway culvert is reported to be partially filled with gravel surfacing, but this could not be confirmed during the spring site visit. The inlet is a known ponding area during spring thaw.

Proposed design elements are depicted in the PIH plans, and generally include the following:

- Construction of new conveyance ditches on the east and west sides of Runway 17/35. This will include new ditches located outside the RSA embankment with a minimum depth currently planned at two feet below the wicking geotextile layer. Conveyance ditches will extend from a high point on Runway 17/35 near Taxiway B to the north and south, generally in areas that currently do not drain off existing embankment. New conveyance ditches have been designed for the 10-year design flow per section 5-2.1 of FAA Advisory Circular (AC) 150/5320-5D *Airport Drainage Design*. This design is detailed later in this section.

- Expansion of existing drainage ditches on the west edge of the paved apron and south side of Taxiway B. These ditches will be increased in size and depth to ensure water drains from the new asphalt pavement, gravel apron areas, and taxiway sections. These ditches will connect to the culvert inlets near the southeast corner of the Runway 17/35/Taxiway B intersection.

- Replacement of the two existing culverts: the 36” culvert under Taxiway B and the 24” culvert under Runway 17/35. Both culverts are anticipated to be replaced with new 36” diameter culverts to ensure adequate drainage capacity. Replacement of the culvert under Runway 17/35 may require the use of pipe jacking or pipe bursting methods to ensure half-width operations can be maintained throughout construction. This will be explored in more detail later in design. Installation of this culvert will be coordinated with the phasing plans to ensure Runway 17/35 maintains operations throughout construction.

2.3.2 Rainfall and Runoff Data

A rainfall intensity of 0.07 in/hour was used for capacity design. This was obtained from the National Weather Service Hydrometeorological Design Studies Center Precipitation Frequency Data Server (PFDS) for the St. Mary’s station using the 10-year recurrence interval, 24-hour duration (https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_ak.html).

2.3.3 Capacity and Structure Design

New conveyance ditches have been designed in conformance with Section 2-3 and Section 5 of AC 150/5320-5D *Airport Drainage Design* using the runoff data above and assuming trapezoidal channels. The rainfall intensity derived above was input into the Rational Method equation to determine peak discharge flow rates within each drainage area. These flow rates were then input into Manning’s equation to determine depth of flow in each new trapezoidal ditch. Drainage calculations are included in **Appendix A**.

All new conveyance ditches will have sufficient capacity for the 10-year, 24-hour duration storm. Actual ditch dimensions and depth have been increased above these minimums to provide additional capacity during spring runoff to ensure water does not interact with the proposed geotextile for drainage within the structural sections.

2.3.4 Ponding, Erosion Control, and Extraordinary Features

There are known ponding issues at the airport during spring runoff and significant rainfall events. As noted above, the bottom width and overall depth of proposed conveyance ditches have been increased to reduce the effects of ponding. New ditch bottoms will also be excavated to bedrock where possible while maintaining positive drainage. The forthcoming geotechnical investigation is expected to provide additional information regarding soil and bedrock conditions and proposed conveyance ditch locations.

2.4 Pavement Design

The asphalt portion of the main apron is in a very poor condition and is not suitable for overlay. A new asphalt pavement section is proposed to replace this asphalt pavement. Advisory Circular (AC) 150/5320-6F *Airport Pavement Design and Evaluation* and the *FAARFIELD* pavement design application were used to develop a new pavement section for the main apron.

Frost Design

New asphalt pavement will be designed using the reduced subgrade strength method outlined in AC 150/5320-6F. Additional frost depth consideration for limited subgrade frost penetration or full frost protection design methods would require significant layers of insulation and non-frost susceptible layers, which is assumed to be beyond the scope and funding availability of this project.

Fleet Mix

The design fleet mix was developed based on information provided in the ALP Narrative Report (ALP narrative) provided by DOT&PF. Bombardier Dash 8-100 operations were adjusted to match current RAVN scheduled air service operations and C-130 cargo operations were adjusted based on discussions with the airport manager. Growth factors for the 20-year pavement design life were interpolated from Table 2 in the ALP narrative. The resulting fleet mix is shown in **Table 2-4** below.

Table 2-4 – Design Aircraft Fleet Mix

Aircraft	FAARFIELD Representative Aircraft	Max Takeoff Weight (MTOW)[1]	Annual Operations	Annual Departures	Growth Rate
Bombardier Dash 8-100	Dash 7	34,500	520	260	4.2%
Beechcraft 1900	Super King Air 350	17,120	990	495	4.2%
Cessna 208 Caravan	Cessna 208B	8,000	3,700	1,850	4.2%
Cessna 207	Stationair-206	3,600	4,600	2,300	4.2%
C-130	C-130	155,000	160	80	4.2%

[1]Design MTOW adjusted for Dash 8-100 (Ravn Aircraft), Beechcraft 1900, Cessna 208 Caravan, and Cessna 207.

Subgrade Conditions & CBR

Based on a review of historic geotechnical data, subsurface soils indicate a frost group 2 (FG-2) gravelly soil with 10%-20% fines content. A CBR of 10 was used for preliminary design and is expected to be a conservative for these silty sand (SM) to silty gravel (GM) conditions.

Proposed Pavement Sections

The FAA pavement design software FAARFIELD was used to design the proposed asphalt apron pavement section. Several options were considered, including a traditional section as well as options including cement treated base and cement stabilized subgrade options. The proposed asphalt apron section consists of Hot Mix Asphalt (P-401) over Crushed Aggregate Base Course (P-209), over Borrow (P-152). A geotextile for separation and drainage will also be placed on the subgrade similar to other unpaved airport areas to minimize water infiltration into the pavement section layers. A 6-inch layer of insulation board is also proposed below the Borrow to protect against frost action. The resulting pavement section is shown in **Table 2-5** below.

Table 2-5 – Asphalt Apron Pavement Section

Material	Thickness (inches)
P-401 Asphalt Mixture Surface Course	4.0
P-209 Crushed Aggregate Base Course	6.0
Geotextile for Separation & Drainage	-
Borrow (P-152)	8.0
Insulation Board	6.0
Total Asphalt Pavement Section Depth	**24.0**

FAARFIELD requires the use of non-standard layers to complete the design of unpaved sections. Adjustments were made to the program to evaluate several Runway 17/35 surfacing options. The proposed unpaved section for areas experiencing heavy aircraft traffic, including Runway 17/35, Taxiways A and B, and the Transient Apron are shown in **Table 2-6** below. This section will only be used within the designed width of the Taxiways A and B (75’ width) and Runway 17/35 (150’ width), as well as within the Transient Apron areas. The section shown in **Table 2-7** is proposed on runway shoulders, taxiway shoulders, TSA, RSA, and the heavy aircraft shoulder. This section utilizes P-152 Borrow to reduce the quantity of imported P-299 Crushed Aggregate Surface Course required for the project, which results in significant cost savings.

Table 2-6 – Unpaved Heavy Aircraft Section

Material	Thickness (inches)
P-299 Crushed Aggregate Surface Course	9.0
P-152 Borrow	12.0
Geotextile for Separation & Drainage	-
Total Unpaved Heavy Aircraft Section Depth	**21.0**

Table 2-7 – Heavy Aircraft Shoulder Section

Material	Thickness (inches)
P-152 Borrow	21.0

The proposed unpaved section for areas experiencing only light aircraft loading, including Runway 6/24, is included in **Table 2-8** below.

Table 2-8 – Unpaved Light Aircraft Section

Material	Thickness (inches)
P-299 Crushed Aggregate Surface Course	9.0
P-152 Borrow	6.0
Total Unpaved Light Aircraft Section Depth	15.0

Similar to the heavy aircraft section, the shoulders and RSA of Runway 6/24 will solely use 1-inch minus Subbase Course for the full depth. This is shown in **Table 2-10** below.

Table 2-9 –Light Aircraft Shoulder Section

Material	Thickness (inches)
P-152 Borrow	15.0

2.5 Signage

This project will remove existing lighted airport signs and install new lighted signs. A preliminary layout of proposed signs has been completed and is included in the plans. In general, signs are replaced in-kind or upgraded to meet existing FAA sign layout standards. Additional signs are proposed to delineate the intersection of Runway 35, Runway 24, and Taxiway A more clearly.

2.6 Lighting

This project includes removal and replacement of the following airfield lighting equipment:

- Removal of existing Runway 17/35 MIRL and existing Runway 6/24 MIRL and installation of a new MIRL system on each runway, including new lighting regulators.

- Removal of existing Taxiways A and B MITL and installation of a new MITL system on each taxiway, including new lighting regulators. Taxiway lighting will extend around radii and tangents on the west side of the transient and paved main aprons.

- Removal and replacement of primary lighted wind cone and segmented circle.

- Removal and replacement of secondary wind cone.

Existing runway edge lighting may be utilized for temporary lighting during Runway 17/35 half-width operations.

Lighting component design will be completed by a separate consultant under a separate contract with DOT&PF.

2.7 Navigational Aids (Navaids)

This project will include the following changes to FAA-owned Navaids:

- Removal of existing Runway 17 MALSR.
- Removal of existing Runway 17 and Runway 35 VASI.
- Installation of new Precision Approach Path Indicators (PAPI) for each end of Runway 17/35
- Installation of new REIL at the Runway 17 end and at the new Runway 35 displaced threshold.

Design of new Navaids will be completed by the FAA under a reimbursable agreement with DOT&PF. Design responsibility of the electrical system for the Navaids will be determined once the separate DOT&PF contract for electrical design is executed.

2.8 Material Source Analysis

The following material sources have been identified as potential sites for the aggregates needed to complete the proposed airport improvements. Some materials are required to be imported from outside of St. Mary’s to ensure suitable material that will meet DOT&PF Aviation specifications.

Crushed Aggregate Surface Course (P-299)

<u>Nome</u>
The Sound Quarry in Nome is an established quarry with known quantity and acceptable qualities of aggregate meeting project specifications.

<u>Marshall</u>
This site is a new source near Marshall on Pilcher Mountain and requires development by the owner. Permitting, equipment mobilization, and construction of a haul road from this material site to the Yukon River, and a new barge landing are required. This site could provide a significant cost savings to the project due to its proximity to St. Mary’s. DOT&PF is currently assisting with environmental studies, public involvement, and coordination with the owner in light of this benefit. The unknowns of owner progress and timing on design and permitting might preclude this site from being a viable option for this project.

Borrow (P-152)

The primary source for borrow will be salvaged material excavated from the existing runway, taxiway, and apron areas as well as material available at the Pitkas Point pit as described below. Excavated material will need to be hauled to the stockpile are or Pitkas Point pit and processed prior to use to ensure it meets DOT&PF specifications for borrow, which includes suitable material that passes a 1-inch sieve.

<u>Pitkas Point</u>
Pitkas Point is the preferred source for any new material required due to the apparent harder sandstone (confirmed by recent test results), as compared to other local material sites. It is important to confirm there is sufficient quantity to supply the project. One concern is unacceptable amounts of Shale mixed in the material. A geotechnical investigation and topographic survey are planned to confirm the site material quality and quantity.

Subbase Course (P-154)

Subbase Course (P-154) is available from several existing local material sources, including “West Ridge”, Pitkas Point, St. Mary’s Pit, or suitable excavated soils from the existing runways. This will be a standard FAA P-154 Subbase Course, passing a 3-inch sieve.

Asphalt Aggregates (P-401)

Asphalt aggregates have similar requirements to surface course soils with higher degradation values. This material will be imported to the site from either Nome or Marshall.

Crushed Surfacing Base Course (P-209)

Similar to the asphalt and surfacing aggregates, the P-209 specification requires higher degradation values that cannot be met by local aggregates; this material will be imported to the site from either Nome or Marshall.

2.9 Barge Haul Analysis

<u>Nome</u>
It is estimated that this 240-mile (one way) route will take 3.5 days for a single round trip to St. Mary’s carrying approximately 2,200 tons of material. There could be additional delays with this route to wait for suitable tides to enter the mouth of the Yukon River, and weather could impact crossing the Norton Sound. A 10% factor is added to this barge route to account for these factors.

<u>Marshall</u>
This route is 60 miles (one way) on the Yukon River and will not have to deal with tides or open water weather conditions. Fog can sometimes impede river navigation, but it is not common. No additional cost factor has been added to this route.

Current project estimates assume that material will be imported from the more expensive alternative, Nome.

2.10 Barge Landings

City of St. Mary's Barge Landing
The City of St. Mary's barge landing is readily available for use without development. This site requires a 1,200 cubic yard stockpile area (estimated footprint of ~10,000 sf) at the wharf for most of the summer. Haul trucks traveling through the town would create safety and dust concerns and will require coordination with and approval of the City. This barge landing location also requires the use of a longer, steeper haul route as described later in this section.

Airport Barge Landing
The airport barge landing is dependent on several factors for it to become a viable barge landing for use in this project. These factors include permitting, construction of a new barge landing facility in the Yukon River and associated equipment at the edge of the river, coordination with and potential approval from Boreal Fisheries, and coordination with the community of Saint Mary's regarding subsistence fisheries at this location. This site is on Airport property, leads to a significantly shorter haul route to the Airport, and the haul route is expected to accommodate larger haul trucks due to the flatter grades. Challenges include potential conflicts with the Boreal Fisheries operations, securing a permitted window for in-water construction of the barge landing that works with construction timing (and river ice), and the impact to subsistence fishing. The barge landing is proposed to be temporary, so all improvements will be removed after construction is complete.

Barge Landing Options: Two options will be advanced with the permitting to provide contractors with flexibility, assuming both options are viable:

- Option 1: Causeway into the river with truck haul for offloading the barge; a variation on this would be to drive sheet pile to contain the soil.

- Option 2: Pilings with conveyor for offloading the barge.

Both options will be updated with bathymetric survey data, when available.

Permitting. Anticipated required permits include:

- Essential Fish Habitat Consultation (National Marine Fisheries Service)
- Title 16 permit (ADF&G)
- Wetland Permit, to be included in the large project permit (USACE)

2.11 Haul Route Analysis

St. Mary's Barge Landing to St. Mary's Airport
This route is an approximately 11-mile round trip from the barge site to the Airport. Drawbacks are steep grades possibly exceeding 10%, trucking through town and occupying the barge landing upland area (material staging) for most of the summer, and road weight restrictions limiting the haul truck sizes. Maintenance of this haul route is expected to be required. Dust impacts in St. Mary's could be significant at times and will require mitigation measures.

Airport Barge Landing to St. Mary's Airport
This route is more direct at 3.2 miles round trip with no grades exceeding 8%. The road is of unknown structure and is expected to require some level of surface enhancement and

maintenance to support the haul trucks. A geotechnical exploration program is proposed for the route to be included as supplemental information for use by the contractor to determine the effort required. This will allow DOT&PF to place enhancement and maintenance costs on the contractor through the bid documents.
Current project cost estimates assume that the more expensive St. Mary's Barge Landing will be used for this project.

2.12 Project Phasing

Construction is anticipated to be completed over two construction seasons. Phase 1 will include importing aggregates to a local airport pit and the construction of the Runway 17 RSA expansion. The remaining phases of work will be in the second construction season and will include resurfacing of all airport surfaces and replacement of all runway and taxiway lighting.

Runway 17/35 operations must be maintained throughout construction; this is a critical phasing element. To accomplish this, the project phasing includes the use of half-width operations on Runway 17/35 during construction within the Runway 17/35 RSA. Half width operations will comply with the FAA Alaska Region Airports Division – Runway Half Width Operation Construction Guidance memorandum and preliminary project phasing meeting this guidance is included in the draft Construction Safety and Phasing Plan (CSPP). Half-width construction will include daylight operations on Runway 17/35 and construction at night with temporary changes to critical airport dimensions as shown below in **Table 2-10**.

Table 2-10 – Runway 17/35 Half-Width Operation Dimensions

Element	Normal Airport Condition	Half-Width Condition
Runway 17/35 Width	150’	100’[1]
Runway 17/35 Safety Area Width	300’	150’
Runway Edge Light Distance from Runway Edge	10’	2’ – 10’
RSA Transverse Slope	1.0% - 2.0%	2.0% - 5.0%

[1]This temporary width assumes a portion of the existing RSA embankment will serve as usable runway during construction.

3.0 MODIFICATIONS TO AGENCY STANDARDS

3.1 Modifications to DOT&PF Design Standards

There are no proposed modifications to DOT&PF Design Standards.

3.2 Modifications to FAA Design Standards

There are no proposed modifications to FAA Design Standards included in this project.

3.3 Modifications to DOT&PF Construction Standards

There are currently no proposed significant changes to the DOT&PF standard aviation specifications. Existing AASHTOWare Project (AWP) bid items will be used for all bid items, and measurement and payment section of technical specifications will be reviewed to ensure all applicable pay items are included in these specifications.

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4.0 COST ESTIMATE

4.1 Engineer's Estimate

An estimate of construction quantities and associated construction costs is included in **Table 4-1** below. This estimate includes costs for barging surfacing aggregates from Nome and hauling to the airport via the St. Mary's barge landing. If surfacing aggregates are obtained from Marshall and the Airport Barge Landing is used, the unit prices for imported aggregates are expected to be decreased.

Table 4-1 – Preliminary Baseline Construction Estimate

Bid Item Subtotal	$ 25,121,405
Construction Engineering (15%)	$ 3,768,211
Indirect Cost Allocation Plan (ICAP) (6.34%)	$ 1,831,602
Contingency (10%)	$ 3,072,122
Plans-in-Hand (PIH) Project Engineer's Estimate	$ 33,793,339

A detailed Project Engineer's Estimate is included in **Appendix B**. This estimate is based on design quantities, site inspections, recent bid data for similarly sized airport DOT&PF projects, experience on similar projects, and contacts made with local contractors.

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5.0 PROJECT SCHEDULE

5.1 Time Constraints

Hauling of imported materials and stockpiling near the airport will be required during the first construction season. Embankment work to extend the Runway 17 RSA is also expected to occur in the first construction season. Drainage improvements, airfield electrical improvements, Runway 6/24 RSA embankment widening, and resurfacing of both runways, both taxiways, and apron areas are anticipated to be completed in the second year of construction.

5.2 Recommended Schedule

Design, bidding, and construction are expected to follow the approximate schedule outlined below:

- Plans-in-Hand (PIH): 8/20/2021
- Pre-PS&E: 10/12/2021
- Final PS&E: 2/3/2022
- Bidding: March 2022
- Construction (Season 1): Summer 2022
- Construction (Season 2): Summer 2023

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APPENDIX A: DRAINAGE CALCULATIONS

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DOWL

8320 154th Avenue NE Redmond, WA 98052
Tele: (425) 869-2670 FAX: (425) 869-2679

Calculated by: K. Eagle

Date: 8/20/2021

RWY 17-35 Ditch RT 1 (STA 22+00)

Storm Event	Q (cfs)	Left x:1	Bot. Width (ft)	Right x:1	Chan. Slope (ft/ft)	Open Channel (Rubble) n= 0.030 Depth (ft)	n	V (fps)
10 yr	0.713	4	6	4	0.006	0.12	0.03	0.90

Q=CIA

C: 0.8 (Street)
I (in/hr): 0.07 (10 yr, 24hr)
A (acres): 12.74047

Q (cfs): 0.713466

RWY 17-35 Ditch LT 1 (STA 44+00)

Storm Event	Q (cfs)	Left x:1	Bot. Width (ft)	Right x:1	Chan. Slope (ft/ft)	Open Channel (Rubble) n= 0.030 Depth (ft)	n	V (fps)
10 yr	0.289	4	6	4	0.004	0.08	0.03	0.55

Q=CIA

C: 0.8 (Street)
I (in/hr): 0.07 (10 yr, 24hr)
A (acres): 5.165289

Q (cfs): 0.289256

RWY 17-35 Ditch LT 2 (STA 59+00)

Storm Event	Q	Left	Bot.	Right	Chan.	Open Channel (Rubble) n= 0.030		
		x:1	Width	x:1	Slope	Depth	n	V
	(cfs)		(ft)		(ft/ft)	(ft)		(fps)
10 yr	0.053	4	6	4	0.006	0.03	0.03	0.33

Q=CIA

C: 0.8 (Street)
I (in/hr): 0.07 (10 yr, 24hr)
A (acres): 0.949656

Q (cfs): 0.053181

RWY 17-35 Ditch RT 2 (STA 59+00)

Storm Event	Q	Left	Bot.	Right	Chan.	Open Channel (Rubble) n= 0.030		
		x:1	Width	x:1	Slope	Depth	n	V
	(cfs)		(ft)		(ft/ft)	(ft)		(fps)
10 yr	0.131	4	6	4	0.006	0.04	0.03	0.47

Q=CIA

C: 0.8 (Street)
I (in/hr): 0.07 (10 yr, 24hr)
A (acres): 2.34068

Q (cfs): 0.131078

RWY 17-35 Ditch LT 3 (STA 66+00)

Storm Event	Q (cfs)	Left x:1	Bot. Width (ft)	Right x:1	Chan. Slope (ft/ft)	Open Channel (Rubble) n= 0.030 Depth (ft)	n	V (fps)
10 yr	0.312	4	6	4	0.003	0.10	0.03	0.50

Q=CIA

C: 0.8 (Street)
I (in/hr): 0.07 (10 yr, 24hr)
A (acres): 5.580349

Q (cfs): 0.3125

TWY B Ditch RT 1 (STA 305+00)

Storm Event	Q (cfs)	Left x:1	Bot. Width (ft)	Right x:1	Chan. Slope (ft/ft)	Open Channel (Rubble) n= 0.030 Depth (ft)	n	V (fps)
10 yr	0.274	4	6	4	0.025	0.05	0.03	0.98

Q=CIA

C: 0.8 (Street)
I (in/hr): 0.07 (10 yr, 24hr)
A (acres): 4.887741

Q (cfs): 0.273713

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APPENDIX B: AASHTOWARE (AWP) PIH ESTIMATE

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Plans-in-Hand (PIH) Project Engineer's Estimate

State Project Number: Z605630000 **Federal Project Number:**

Project Description: ST MARY'S AIRPORT IMPROVEMENTS

Project Line #	Proposal Line #	Item #	Description	Unit	Qty.	Price	Ext. Amount	Owner Furnished Material
Category: Basic Bid								
10		D701.010.0036	CS Pipe, 36-inch	LF	640.00	150.00	96,000.00	
20		D701.090.0000	Rip Rap	TON	30.00	75.00	2,250.00	
30		G100.010.0000	Mobilization and Demobilization	LS	All Required	1,000,000.00	1,000,000.00	
40		G115.010.0000	Worker Meals and Lodging, or Per Diem	LS	All Required	200,000.00	200,000.00	
50		G130.010.0000	Field Office	LS	All Required	25,000.00	25,000.00	
60		G130.020.0000	Field Laboratory	LS	All Required	15,000.00	15,000.00	
70		G130.060.0000	Nuclear Testing Equipment Storage Shed	EACH	1.00	10,000.00	10,000.00	
80		G131.010.0000	Engineering Transportation (Truck)	EACH	2.00	20,000.00	40,000.00	
90		G135.010.0000	Construction Surveying by the Contractor	LS	All Required	75,000.00	75,000.00	
100		G135.020.0000	Extra Three Person Survey Party	HR	25.00	300.00	7,500.00	
110		G200.010.0000	Contractor Quality Control Program	LS	All Required	50,000.00	50,000.00	
120		G210.010.0000	Contractor Safety Plan Compliance Document	LS	All Required	25,000.00	25,000.00	
130		G700.010.0000	Airport Flagger	CS	All Required	25,000.00	25,000.00	
140		G710.010.0000	Highway Traffic Maintenance	LS	All Required	40,000.00	40,000.00	
150		L125.010.0000	Airport Lighting	LS	All Required	500,000.00	500,000.00	
160		L125.130.0000	Airport Sign, L-858	EACH	9.00	5,000.00	45,000.00	
170		L125.180.0000	Temporary Runway Lighting System	LS	All Required	85,000.00	85,000.00	
180		L145.010.0000	Standby Generator and Enclosure	LS	All Required	220,000.00	220,000.00	
190		P151.010.0000	Clearing	ACRE	9.80	2,500.00	24,500.00	
200		P152.010.0000	Unclassified Excavation	CY	184,060.00	15.00	2,760,900.00	
210		P152.250.0000	Borrow Measured in Final Position	CY	171,270.00	30.00	5,138,100.00	
220		P154.010.0000	Subbase Course	CY	64,250.00	20.00	1,285,000.00	
230		P165.010.0000	Removal of Structures	LS	All Required	100,000.00	100,000.00	
240		P167.020.0000	Dust Palliative	LS	All Required	300,000.00	300,000.00	

Plans-in-Hand (PIH) Project Engineer's Estimate

State Project Number: **Z605630000** **Federal Project Number:**

Project Description: **ST MARY'S AIRPORT IMPROVEMENTS**

Project Line #	Proposal Line #	Item #	Description	Unit	Qty.	Price	Ext. Amount	Owner Furnished Material
250		P190.010.0000	Insulation Board	SF	158,720.00	4.00	634,880.00	
260		P209.020.0000	Crushed Aggregate Base Course	TON	5,700.00	130.00	741,000.00	
270		P299.010.0000	Crushed Aggregate Surface Course	CY	42,960.00	130.00	5,584,800.00	
280		P401.010.0010	Hot Mix Asphalt Type I, Class A	TON	4,210.00	915.00	3,852,150.00	
290		P401.020.5828	Asphalt Binder, PG 58-28	TON	240.00	1,000.00	240,000.00	
300		P610.010.0000	Structural Portland Cement Concrete	CY	26.00	500.00	13,000.00	
310		P640.020.0000	Segmented Circle (Panel-Type)	LS	All Required	45,000.00	45,000.00	
320		P641.010.0000	Erosion, Sediment, and Pollution Control Administration	LS	All Required	15,000.00	15,000.00	
330		P641.030.0000	Temporary Erosion, Sediment, and Pollution Control	LS	All Required	50,000.00	50,000.00	
340		P641.040.0000	Temporary Erosion, Sediment, and Pollution Control Additives	CS	All Required	10,000.00	10,000.00	
350		P641.070.0000	SWPPP Manager	LS	All Required	25,000.00	25,000.00	
360		P650.020.0000	Soil Anchor Tie-down	SET	4.00	4,000.00	16,000.00	
370		P670.010.0000	Hazard Marker Barrier, Plastic	EACH	40.00	450.00	18,000.00	
380		P671.010.0000	Runway Closure Marker, Vinyl Mesh	EACH	4.00	3,000.00	12,000.00	
390		P671.020.0000	Runway Closure Marker, Illuminated	EACH	4.00	15,000.00	60,000.00	
400		P671.040.0000	Taxiway Closure Marker, Vinyl	EACH	2.00	2,500.00	5,000.00	
410		P681.010.0000	Geotextile, Separation	SY	15,030.00	2.50	37,575.00	
420		P682.010.0000	Geotextile, Drainage	SY	338,550.00	5.00	1,692,750.00	

Category Basic Bid Total:		**$25,121,405.00**
Minus Contractor Furnished CENG Items:		$0.00
Exc Subtotal:		$25,121,405.00
Construction Engineering Percent/Amount:	15%	$3,768,210.75
Minus Contractor Furnished CENG Items:		$0.00
State Forces CENG Amount:		**$3,768,210.75**

Plans-in-Hand (PIH) Project Engineer's Estimate

State Project Number: Z605630000 **Federal Project Number:**

Project Description: ST MARY'S AIRPORT IMPROVEMENTS

Project Line #	Proposal Line #	Item #	Description	Unit	Qty.	Price	Ext. Amount	Owner Furnished Material
			Basic Bid Owner Furnished Material Total:				**$0.00**	
			Category Subtotal (Pay Items + SF CENG + Furn Materials):				$28,889,615.75	
			Indirect Cost Allocation Plan (ICAP) Percent/Amount:			6.34%	**$1,831,601.64**	
			Category Basic Bid Estimate Total:				**$30,721,217.39**	
			Pay Item Total:		**Z605630000**		**$25,121,405.00**	**42 Items**
			SF CENG Amount:				**$3,768,210.75**	
			Owner Furnished Materials (Not part of the Contract):				**$0.00**	
			ICAP Amount:				**$1,831,601.64**	
			Project Estimate Total:				**$30,721,217.39**	
			Estimate Bid Contingency Percent/Amount:			10.00%	**$3,072,121.74**	
			Project Estimate Total + Estimate Bid Contingency:				**$33,793,339.13**	

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APPENDIX C:

USFWS – INFORMATION FOR PLANNING AND CONSULTATION RESULTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Fairbanks Fish And Wildlife Conservation Office
101 12th Avenue
Room 110
Fairbanks, AK 99701-6237
Phone: (907) 456-0203 Fax: (907) 456-0208

In Reply Refer To: May 30, 2021
Consultation Code: 07CAFB00-2021-SLI-0120
Event Code: 07CAFB00-2021-E-00292
Project Name: Saint Mary's Airport Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Fairbanks Fish And Wildlife Conservation Office
101 12th Avenue
Room 110
Fairbanks, AK 99701-6237
(907) 456-0203

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Anchorage Fish And Wildlife Conservation Office
4700 Blm Road
Anchorage, AK 99507
(907) 271-2888

Project Summary

Consultation Code: 07CAFB00-2021-SLI-0120
Event Code: 07CAFB00-2021-E-00292
Project Name: Saint Mary's Airport Improvements
Project Type: TRANSPORTATION
Project Description: The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary's Airport Improvements project. The purpose of the proposed project is to upgrade existing aviation facilities to meet current FAA standards.

The project is needed as the primary north/south runway (17/35) does not currently meet the FAA Standard of a 600-foot (ft) Runway Safety Area (RSA) length and its surface has degraded over time. The cross-wind runway (6/24) does not currently meet the FAA standard safety area width of 150 ft and its runway surface has degraded over time. All runway and taxiway lighting components and most Navigational Aids are more than 24 years old and at the end of their useful life. Vegetation within the proposed RSA consists of shrubs and trees which would require clearing to support a new embankment. Drainage ditches around the airport facilities would need to be shifted based on the proposed changes in airport layout.

A number of potential material sources are currently being investigated for use by this project. The following options will be included in the environmental review of the project:

• Obtain material from existing, permitting material sites in Saint Mary's
• Obtain material from an existing commercial source in Nome and transport via barge to Saint Mary's. This would require development of a temporary barge landing at the borealis fish camp to allow material to be transported up the Yukon River Access Road, approximately 1.3 miles to the airport. Use of this option may require widening of this existing road). The temporary barge landing would consist of using fill to extend an existing pier in the Yukon River approximately 100 ft.
• Develop a new material site, haul road, and barge landing in Marshall
• Obtain material from two existing sources in Mountain Village and transport material over the existing Mountain Village-Saint Mary's road approximately 15 miles between the two communities. This option may require minor improvements to the existing road

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@61.96317035,-162.77985072760384,14z

Counties: Kusilvak County, Alaska

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC

U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Kusilvak County, Alaska

Local offices

Anchorage Fish And Wildlife Conservation Office

(907) 271-2888
(907) 271-2786

4700 Blm Road
Anchorage, AK 99507

Fairbanks Fish And Wildlife Conservation Office

(907) 456-0203

(907) 456-0208

MAILING ADDRESS
101 12th Avenue
Room 110
Fairbanks, AK 99701-6237

PHYSICAL ADDRESS
101 12th Avenue, Room 110
Fairbanks, AK 99701-6237

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE.

"BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bristle-thighed Curlew Numenius tahitiensis — Breeds May 15 to Aug 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3913

Pacific Golden-plover Pluvialis fulva — Breeds May 20 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Whimbrel Numenius phaeopus — Breeds May 10 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX D:

ESSENTIAL FISH HABITAT ASSESSMENT

Essential Fish Habitat Assessment

Alaska Department of Transportation and Public Facilities

Saint Mary's Airport Improvements

September 2021

Prepared for:
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1 INTRODUCTION

The Alaska Department of Transportation and Public Facilities (DOT&PF) is proposing to develop a temporary barge landing in Saint Mary's, Alaska to support improvements needed at the Saint Mary's Airport. The barge landing will allow barges to safely dock and offload surfacing material. The barge landing work, which includes placing fill in approximately 0.51 acres and driving piles within the Yukon River, is anticipated to begin with installation of the temporary barge landing in spring 2022 and removal of the temporary barge landing in December 2024.

This assessment of Essential Fish Habitat (EFH) is being provided in compliance with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104- 267). EFH is defined by the Magnuson-Stevens Act as those "waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity."

The 1996 amendment established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan. Section 305(b)(2) of the Magnuson-Stevens Act requires Federal action agencies to consult with National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) on all actions, or proposed actions, authorized, funded, or undertaken by the agency that may adversely affect EFH. The proposed barge landing is located within the Yukon River, an area designated as EFH, and the below assessment satisfies EFH consultation requirements.

2 PROJECT PURPOSE

The purpose of this effort is to construct a new temporary barge landing on the Yukon River near Saint Mary's Airport. The barge landing is needed to support DOT&PF's planned improvements of the primary north/south runway, crosswind runway, taxiways, and apron areas at the Saint Mary's Airport.

Currently, there are no existing road-accessible material sites near the airport that could provide the required type, quality, and quantity of surfacing required for the airport upgrades. Although there is a barge landing in Saint Mary's, its use would require dump trucks to drive through the middle of the community and then 5.7 miles to the airport, which is neither acceptable to the community nor economical.

There is an existing access road to a causeway/dock structure on the north bank of the Yukon River at the airport barge landing adjacent to the Boreal Fisheries site near the airport. While silt has accumulated around the causeway and it no longer extends to deep enough water, the general location is suitable for a new barge landing and staging area.

Figure 1. Saint Mary's Airport Barge Landing Location

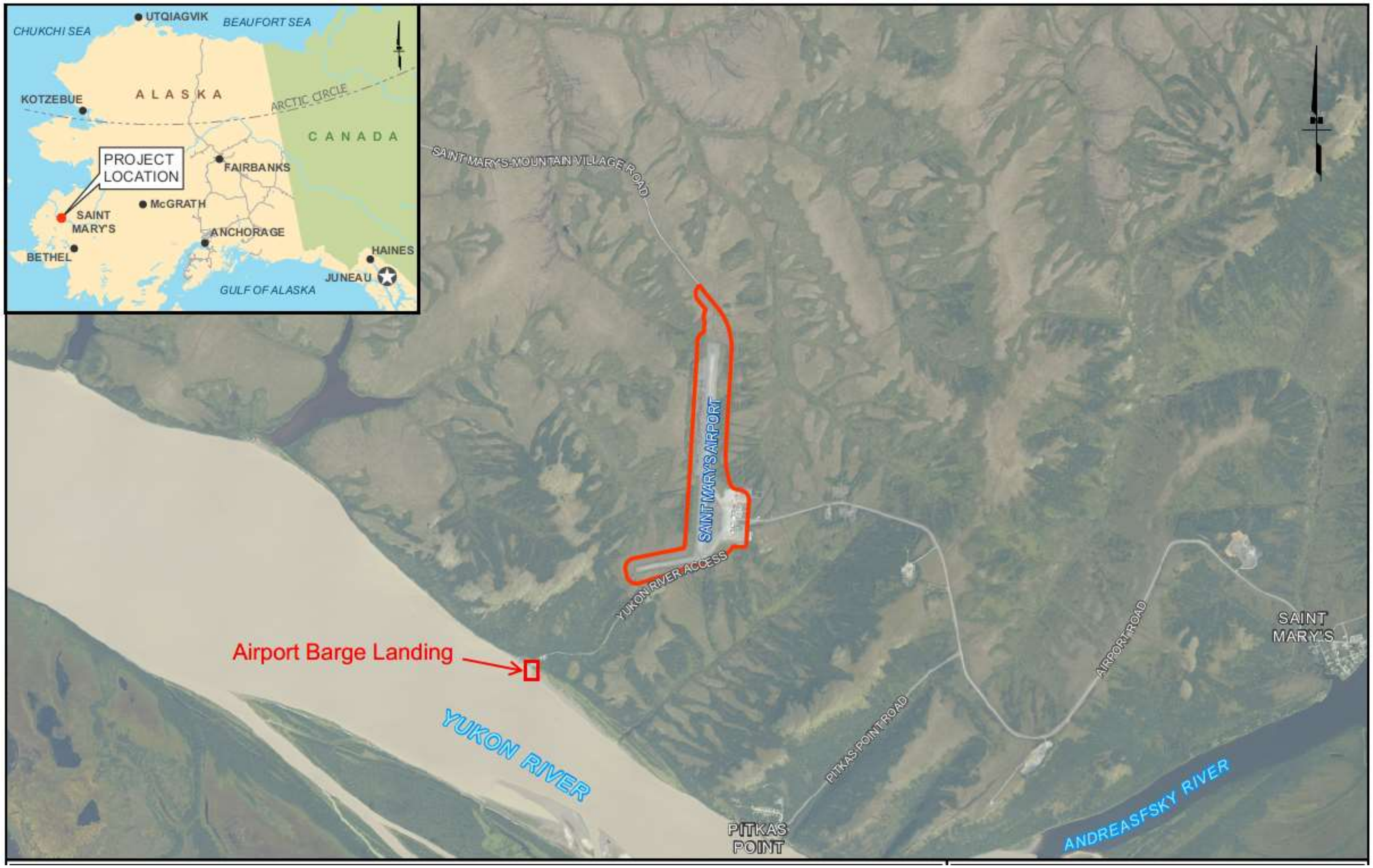
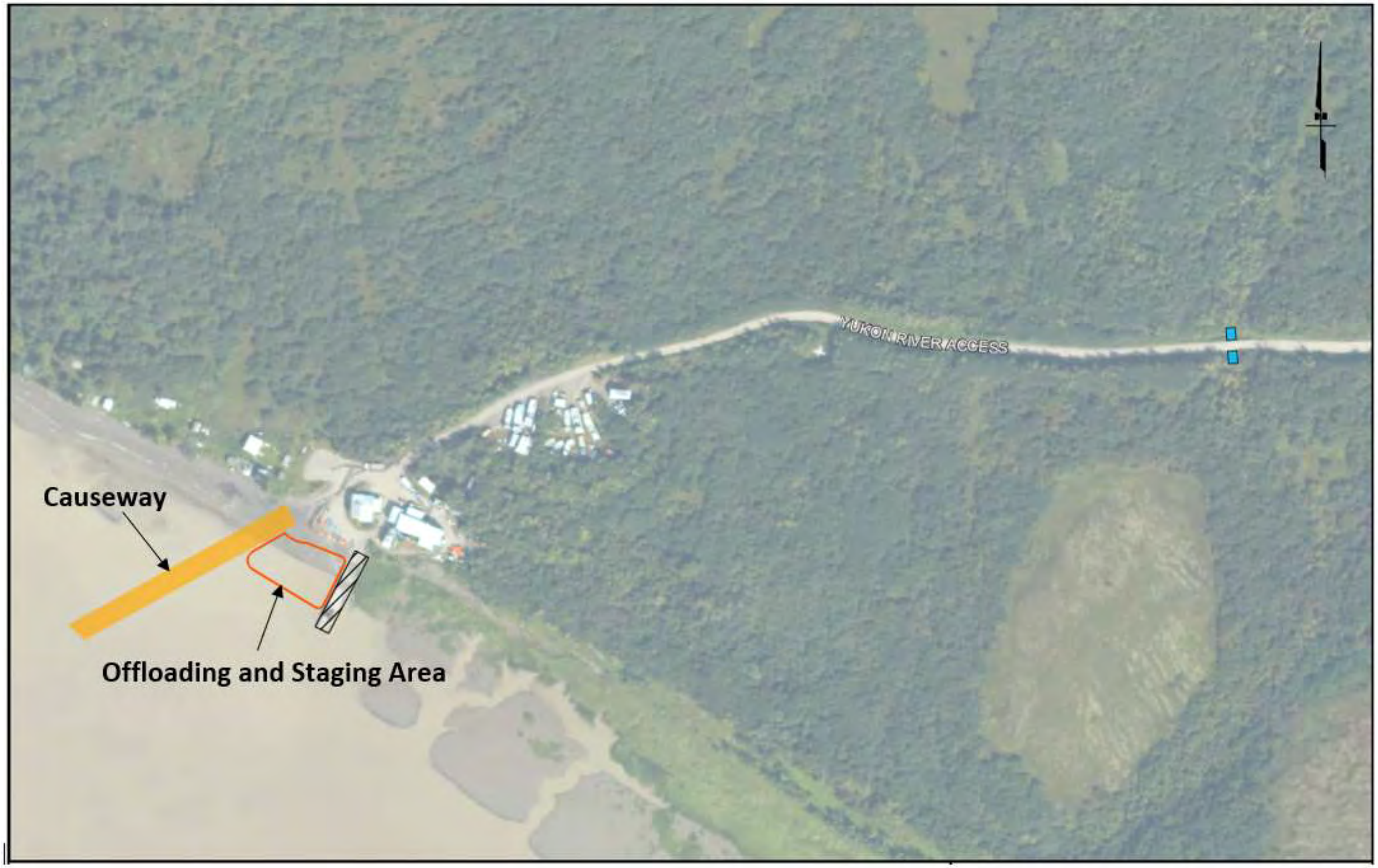


Figure 2. Saint Mary's Airport Barge Landing Components



3 PROPOSED ACTION

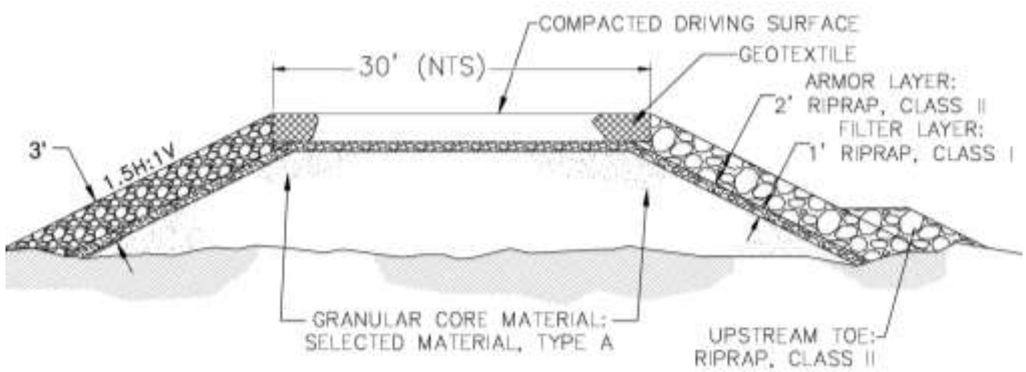
3.1 PROJECT LOCATION

The proposed Saint Mary's Airport barge landing is located on the north shore of the Yukon River in Western Alaska at Township 23 N, Range 77 W, Section 36, Seward Meridian; latitude 62.045090 and longitude -163.329720 (Figures 1 and 2). This location is at the end of an existing gravel road about 1.4 miles southeast of the Saint Mary's Airport. The location is about 13 miles upriver from Mountain Village and 1.5 miles and 5.5 miles downriver from Pitka's Point and Saint Mary's, respectively.

3.2 CONSTRUCTION DETAILS

The proposed design of the Airport Barge Landing would include a 0.28-acre solid fill causeway extending approximately 500 feet into the Yukon River. The causeway would be approximately 65 feet wide at the toe of slope, with a 430-foot-long by 30-foot-wide compacted driving surface. The upstream 1.5(H):1(V) causeway side slope would be reinforced with Class I riprap and armored with Class II riprap and additional Class II riprap at the toe of the slope. The causeway's downstream 1.5(H):1(V) side slope would have Class II riprap (Figure 3). The causeway end would extend another 70 feet into the river at an approximate 5 percent average slope, to approximately 10 feet below ordinary high water (OHW) and protected with Class II riprap.

Figure 3. Cross Section of the Saint Mary's Airport Barge Landing Causeway



Approximately 50 feet upstream of the barge landing, a 10,000-square-foot offloading and staging area would be constructed 8 feet above OHW. The offloading and staging area would be constructed of Type C selected granular core material with side slopes armored with geotextile overlain with Class I riprap, as required.

To construct the barge landing, fill would be brought to the site by truck via the access road from a nearby permitted location. A bulldozer would place the material from shore into the river. Riprap would be placed either from a barge or from the causeway and the offloading and staging area using an excavator. It is expected all the riprap for the barge landing would be brought to the site on a single barge.

Two mooring dolphins would be installed along the causeway. The dolphins would consist of four 10-inch diameter steel piles. Each 50-foot-long pile would be driven about 25 feet into the bed of the Yukon River using a vibratory hammer. It is expected that it will take 30 minutes to drive each pile and a four piles will be driven per day. Removal of the piles is expected to take approximately 15 minutes and would be completed over 2 day. It is expected that a barge (around 55 feet by 200 feet and 2,500 tons) equipped with a crane and vibratory hammer pile driver and supported by a skiff would complete the work.

Total fill areas and quantities for the causeway and staging and offloading area are shown in Table 1. Pile details are provided in Table 2.

Table 1. Saint Mary's Airport Barge Landing Fill in EFH

Project Feature	EFH Impacts	
	Fill Area (acres)	Fill Volume (cubic yards)
CAUSEWAY		
Selected Material, Type C	0.28	9,200
Class I Riprap		1,500
Class II Riprap		1,000
Total		11,700
STAGING AREA		
Selected Material, Type C	0.23	1,600
Class I Riprap		200
Total		1,800
TOTAL FILL IMPACTS	**0.51**	**13,500**

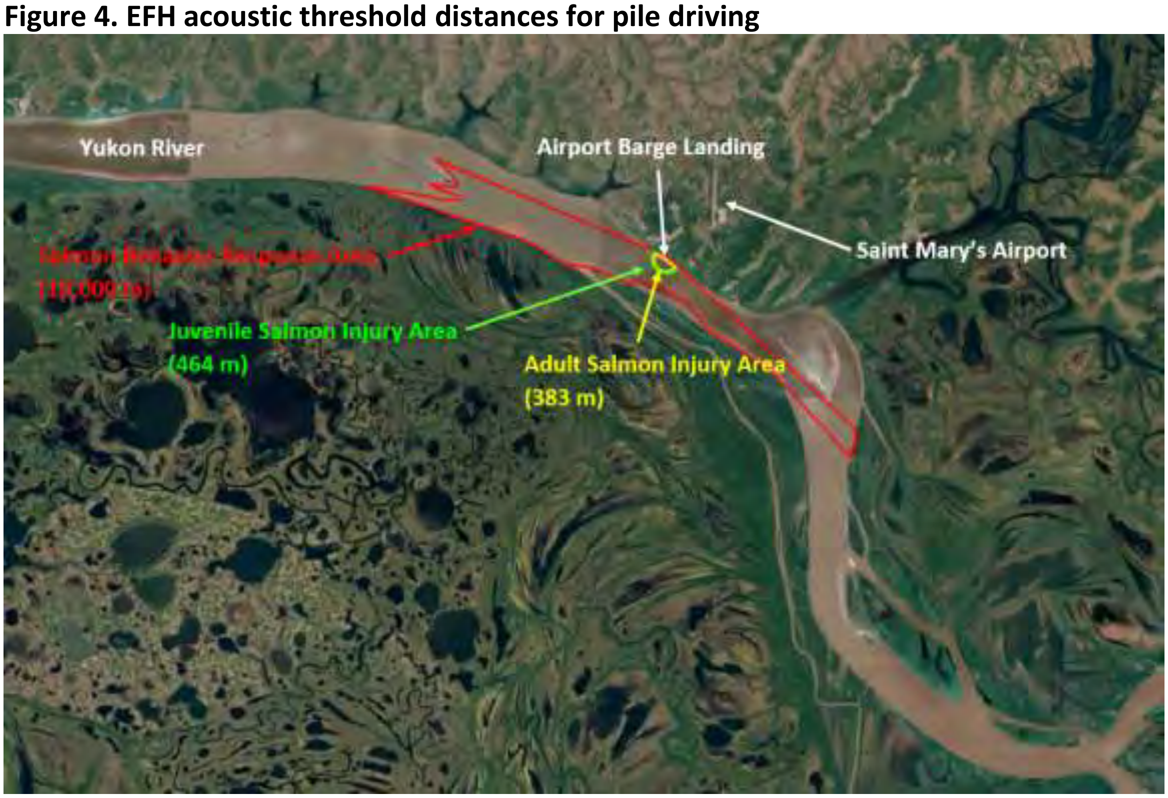
Table 2. Saint Mary's Airport Barge Landing Pile Summary

Project Feature	Pile Installation	Pile Removal
DOLPHINS (2)		
Pile Diameter (inches)	10	10
# of Piles	8	8
Max # Piles Vibrated per Day	4	4
Vibratory Time per Pile	30 minutes	15 min
Vibratory Time per Day	120 minutes	60 min
Total Vibratory Time	4 hours	2 hours
TOTAL HOURS	**6 hours**	
Number of Days	2	2
TOTAL DAYS	**4 days**	

3.3 DEFINITION OF ACTION AREA

The project action area designates the area where any effect will or could occur from the proposed action. For this assessment, the action area is the area of water that at any given time could be ensonified above acoustic thresholds for fish species with EFH and where salmons' behavior could be impacted by sound. The action area will be ensonified where direct underwater noise levels from vibratory installation of 10-inch piles is expected. Based on

Figure 4. EFH acoustic threshold distances for pile driving



modelling, the action area is confined to the Yukon River, extending approximately 10,000 meters from the proposed barge landing site (Figure 3).

4 ESSENTIAL FISH HABITAT IN THE ACTION AREA

The Yukon River in the action area is identified as an anadromous fish stream (ID #334-20-11000-2451), which is designated as EFH under the Magnuson-Stevens Act. The Alaska Department of Fish and Game (ADF&G) documents all five species of Pacific salmon and Chinook, Coho, and Chum Salmon as present in the proposed Airport Barge Landing action area at certain times during the year (ADF&G 2021a). These species are described below.

Other anadromous waters near the proposed Airport Barge Landing location include Andreafski River (#334-20-11000-2451; 3 miles upstream) and Archuelinguk River (#334-20-11000-2321; 15 miles downstream); however, they are outside the action area for this project.

4.1 ESSENTIAL FISH HABITAT SPECIES DESCRIPTIONS

4.1.1 Salmonid Species Descriptions

Chinook Salmon (*Oncorhynchus tshawytscha*)
According to ADF&G, about 183,000 adult Chinook Salmon migrate upstream through the project's action area annually between mid-to-late May through early July (ADF&G 2020b). After July 15, migration is typically completed. It is likely that Chinook Salmon juveniles are in the project area during outmigration immediately before or after ice-out in early May (Ohlberger et al. 2016); however, the timing varies between different cohorts of fish from different parts of the Yukon River and may be influenced by physical factors, such as water temperature (Miller et al. 2020).

Chum Salmon (*O. keta*)
An average 1.9 million adult Chum Salmon make up the summer run and migrate through the project's action area from early May through July 15, and about 740,000 adult Chum Salmon are present migrating through the project area between July 18 through early September during the fall run (ADF&G 2020b). Juvenile Chum Salmon outmigration downstream past the project's action area peaks in late June when millions of fry are dispersed by high river discharges through numerous distributary channels into coastal habitats. Juvenile out migration through the project area decreases as water temperatures increase (18-21°C) in mid-July (The National Academies 2005).

Coho Salmon (*O. kisutch*)
About 209,000 adult Coho Salmon travel upstream past the project's action area each year between mid-July through early September (ADF&G 2020a), typically during periods of high water (Yukon River Panel 2017). Coho Salmon juvenile outmigration timing from the Yukon River is less understood.

Pink Salmon (*O. gorbuscha*)

Adult Pink Salmon migrate upstream through the Airport Barge Landing action area between late June and mid-August. A total of 689,607 Pink Salmon were estimated to have migrated past the Pilot Station sonar (about 20 miles upriver from the project area) in 2018 (Dreese and Lozori 2019). Outmigration of juvenile Pink Salmon through the project area peaks before mid-June as they move rapidly through delta habitats (The National Academies 2005).

Sockeye Salmon (*O. nerka*)

Adult Sockeye Salmon travel past the Airport Barge Landing action area in July and August (Dreese and Lozori 2019). Eggs hatch during the winter, and the young salmon move into the rearing areas. In systems with lakes, juveniles usually spend up to three years in fresh water before migrating to the ocean in the spring as smolts. However, in systems without lakes, many juveniles migrate to the ocean shortly after emerging from the gravel in the spring (ADF&G no date). Little specific information is available on Yukon River Sockeye Salmon.

4.2 EXISTING CONDITIONS IN THE ACTION AREA

The proposed temporary barge landing, including the causeway and mooring dolphins and offloading and staging area, would be located in the Lower Yukon River near the Boreal Fisheries approximately 100 miles upstream from the Yukon River's mouth. There is some existing development in the area associated with Boreal Fisheries near Pitka's Point and Saint Mary's. Much of the riparian area is either unvegetated or somewhat vegetated with alders (*Alnus* spp.), willows (*Salix* spp.), grasses (*Paceae* spp.), and sedges (*Cyperaceae* spp.) (Figure 4).

Figure 5. The proposed St. Mary's Airport Barge Landing location on the lower Yukon River in May (above) and June (below) 2021.

At the proposed barge landing location, the Yukon River is approximately 0.75 mile wide. At a river cross section taken on June 26, 1996 at Pitka's Point, the Yukon River had a maximum depth of 40 feet. The velocity on that date and at that location was 3.17 feet per second. The river bottom in this area is primarily sediment and mud. At its mouth, the Yukon River transports about 60 million tons of suspended sediment annually into the Bering Sea (Brabets et al. 2000).

5 EFFECTS ASSESSMENT

Project actions including the placement of fill and pile driving could potentially cause impacts on EFH and EFH-dependent species (salmon or salmon habitat) in the Yukon River.

5.1 DISCHARGE OF FILL MATERIAL AND UPLANDS DEVELOPMENT

Although salmon spawning and rearing habitat has been avoided, approximately 0.5 acres would be filled and 8 piles would be placed within Yukon River salmon migration EFH. The riprap from the causeway and piles would be removed within two seasons and it is expected that the causeway would erode and be scoured away by the river and ice over time.

5.1.1 Short-Term Impacts

Sedimentation

Discharge of fill material to construct the barge landing and offloading and staging area will temporarily increase sedimentation, turbidity, and available light. These impacts will be temporary, but could contribute to the habitat loss due to impacts to biological functions and hydrologic conditions. Increased turbidity during fill activities can injure fish by temporarily impacting feeding efficiency (although, in this case, migrating adults would not be feeding and it is unlikely that out-migrating juveniles would be feeding) and clogging or damaging fish gills from suspended solids, leading to possible suffocation and increased energy demands. It is expected that turbidity from placement of fill could extend several kilometers downstream from the barge landing area during construction (Limpinsel et al. 2017); however, studies of the effects of turbid water on fish suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993; Wilber and Clarke 2001).

5.1.2 Long-term Impacts

Habitat Loss

About 0.51 acres of EFH would be filled to construct the Airport Barge Landing. Riprap would be removed when the project is complete, and the causeway would be expected to naturally erode or e removed by ice during spring breakup; however, it could take many years until the causeway disappears. The shoreline in the barge landing area provides habitat for migrating salmon, particularly juvenile salmon traveling within the shallow water edges of the Yukon River. Discharge of fill material in this area would reduce available fish habitat, potentially impacting habitats with important biological functions and hydrologic conditions. In addition, the causeway could create a physical barrier to migration by pushing outgoing juvenile salmon into deeper water, where they could be more susceptible to predation, and creating a minor obstacle to adult salmon migrating upstream.

Placement of fill also has the potential to impact hydrological conditions by obstructing flow, changing water velocity and direction, and altering riverine profile, which collectively can impact erosion and deposition (Limpinsel et al. 2017). In this case, the causeway may cause sediment deposition in shallow areas that are potentially important for juvenile and adult salmon migration refuge.

5.1.3 Indirect Impacts

Placement of fill for the causeway and offloading and staging area could exacerbate stormwater runoff. Stormwater runoff can affect sedimentation and siltation and increase contaminants in freshwater habitats. Nonpoint source contamination and debris may increase from introduced hardened surfaces and reduced land use buffers (Limpinsel et al. 2017).

Fish that are injured due to increased turbidity and the potential release of contaminants during discharge of fill may have indirect impacts on other species and the freshwater system as a whole. Decreased visibility and an increase in suspended fill discharge particles in the water column can have indirect impacts on other prey species by making them more susceptible to predation (Limpinsel et al. 2017). These effects would occur over a short period in an action area that has a small project footprint relative to the existing available habitat in the area. When combined with fish displacement from the area during construction, there is a minor potential to indirectly affect future fish populations in the area and a minimal risk to local commercial and subsistence harvests.

5.2 PILE INSTALLATION AND REMOVAL

5.2.1 Short-Term Impacts

Sound

Considering sound profiles and area topography, the estimated area in which sound will exceed injury thresholds for juvenile and adult salmon would extend from 383 to 464 meters from the Airport Barge Landing's dolphin sites (Figure 3).[1] This is the distance which current research accepted by NMFS shows that physical injury occurs to fish (accumulated sound exposure level [SEL] from multiple strikes reaches 187 dB re 1 µPa for large fishes [≥2 grams] or 183 dB re 1 µPa for small fishes [<2 grams]). There is currently not enough research to determine how sound impacts the earlier life stages of fish though it is known that smaller fish are more affected than larger fish by sound pollution (Limpinsel et al. 2017). Studies have shown physical injury to fish includes fatal damage to swim bladders in juveniles and compromised swim bladders in adult salmon (Buehler et al. 2015).

A larger area (about 15.8 square kilometers [6.1 square miles]) would be ensonified to a level that could impact salmon behavior (acoustic threshold of 155 decibels [dB] re 1µPa [micropascal] [root mean square] for vibrating). During pile installation and removal this level of noise could affect the distribution and behavior of juvenile salmon and stun small fish, making them more susceptible to predation (Limpinsel et al. 2017).

Sedimentation

The installation and removal of piles could disturb bottom sediments and may cause a temporary increase in suspended sediment. It is estimated that pile driving activities can produce total suspended sediment concentrations of approximately 5.0 to 10.0 mg/L above

[1] Vibratory pile driving source level of 175 SEL/195 RMS is estimated from documented received levels at 10 meters from vibratory piles for the Mad River Slough Pipeline Construction project (Buehler et al. 2015).

background levels within approximately 91 meters of the pile being driven (FHWA 2012). However, as described above, these levels would not be expected to have more than minor impacts on EFH or salmon.

5.3.2 Long-term Impacts

No long-term impacts are expected from the placement of piles since they will be removed after the Saint Mary's Airport Improvements are completed.

5.3.3 Indirect Impacts

EFH loss as a result of indirect impacts related to pile driving activities, such as barging equipment and piles to the site and staging barges in the area, are expected to be temporary and minimal relative to fish populations and overall available EFH.

5.3 VESSEL TRAFFIC

5.3.1 Short-Term Impacts

Short-term impacts to EFH from barges using the landing during construction of the Saint Mary's Airport Improvement could increase wakes and surge in the action area, which could lead to riverbank erosion and increased turbidity.

5.3.2 Long-term and Indirect Impacts

Long term and indirect impacts are not expected because causeway riprap and dolphins will be removed and the barge landing will not be used for commercial traffic after construction of the Saint Mary's Airport Improvements is complete.

6 CONSERVATION MEASURES

Incorporating the following conservation measures would help minimize adverse impacts to EFH and salmon in the action area.

- The project design minimizes the footprint of fill in EFH to the extent practicable, and no spawning or rearing habitats are impacted.
- Fill is sloped flatter than 1(H):1(V) to maintain shallow water and provide refuge for juvenile salmon.
- The project employs the fewest number of pilings necessary to support barge activities, minimizing construction noise and turbidity.
- Fill placement and pile installation and removal timeframes would be negotiated with ADF&G and NMFS to minimize impacts during sensitive time periods when salmon migrate through the area.
- Impact hammer use would be avoided and piles would be driven as deep as possible with a vibratory hammer for only about 6 hours over 4 days (non concurrent).
- Piles would be removed slowly to allow sediment to slough off at or near the mudline to reduce suspended sediment and turbidity.
- Practical measures to avoid, contain, and clean up petroleum spills from material barges would be implemented.

7 CONCLUSIONS AND DETERMINATION OF EFFECTS

The Saint Mary's Airport Barge Landing may adversely affect Yukon River EFH. Approximately 0.51 acres of EFH will be lost due to filling; however, some fill would naturally erode after the barge landing is closed and riprap and piles are removed. Because only vibratory (not impact) pile driving would be employed for less than 120 minutes per day over 4 nonconcurrent days, adverse impacts to EFH and salmon from pile driving would be minor. Temporary sedimentation from the placement of fill and pile driving and removal could occur, but would be minimized through conservation measures. EHF impacts due to vessel use of the barge landing, including potential shoreline erosion and risk of spills, would be minor and short-lived and mitigated.

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APPENDIX E:

2021 WETLAND DELINEATION REPORT

DOWL

Wetland Delineation Report

Saint Mary's Airport Improvements

July 2021

SAINT MARY'S AIRPORT IMPROVEMENTS

Wetland Delineation Report

Prepared for:

State of Alaska Department of Transportation and Public Facilities
P.O. Box 196900
Anchorage, Alaska 99519

Prepared by:

DOWL
4041 B Street
Anchorage, Alaska 99503

July 2021

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ACRONYMS

CWA	Clean Water Act
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GHCN	global historical climatology network
NRCS	Natural Resources Conservation Service
OBL	Obligate
PFO	palustrine forested
PUB	palustrine unconsolidated bottom
US	United States
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

1.0 INTRODUCTION

DOWL is providing environmental support services to the Alaska Department of Transportation and Public Facilities (DOT&PF) for the Saint Mary's Airport Improvement Project as the primary north/south runway (17/35) does not currently meet the Federal Aviation Administration (FAA) Standard of 600-foot (ft) Runway Safety Area (RSA) length and its surface has degraded over time. The community of Saint Mary's, Alaska is located on the northern bank of the Andreafsky River, near the confluence of the Yukon and Andreafsky Rivers in the Yukon-Kuskokwim Delta. The airport is located four air miles west of Saint Mary's and is directly adjacent to the Yukon River. The Saint Mary's airport is approximately 450 air miles west-northwest of Anchorage and 515 air miles southwest of Fairbanks. The airport is approximately seven miles (via road) west of the community of Saint Mary's, Alaska (Sections 19, 24, 25, and 30; Township 23 North, Range 76 West, Seward Meridian; latitude 62.06083 North and longitude 163.30183 West (United States Geological Survey [USGS] Quadrangle Maps Kwiguk A-3 SW (Appendix A; Figure 1).

Project Description

The improvements consist of construction of an approximately 415-ft long and 300-ft wide embankment at the north end of the runway (17); moving the landing point north approximately 400 feet at the south end of the runway (35); and widening the outer edges of the RSA embankments at the cross-wind runway (6/24) by 17.5 ft on each side. With the exception of the existing asphalt paved portion of the main apron, all other operational surfaces at the airport would be resurfaced with new crushed aggregate including the primary north/south runway, cross wind runway, and taxiway A and B. The airfield's existing drainage ditches and culverts would be evaluated for potential drainage improvements. Vegetation within the airport property, immediately adjacent to the runways would be cleared as needed for new embankment construction. All runway and taxiway lighting components on the airport, including most Navigational Aids would be replaced. Four potential material sources are currently being investigated for use by this project, of which three are existing and one would require development. They include:

- Two existing, permitted material sites in Saint Mary's
- One existing, permitted material site in Mountain Village
- One new material site, haul road, and barge landing in Marshall

Material obtained from the Saint Mary's or Mountain Village sites would be hauled on existing roads. Material obtained from Marshall would require development of a temporary barge landing at the airport barge landing site to allow material to be transported up the Yukon River Access Road, approximately 1.3 miles to the airport. Use of this option may require replacement of a culvert, and the temporary barge landing would require fill to extend an existing pier into the Yukon River by approximately 100 ft.

This project may impact jurisdictional waters of the United States (US). DOWL was contracted to conduct an investigation to identify areas that may fall under the United States Army Corps of Engineers (USACE) jurisdiction per Section 404 of the Clean Water Act (CWA). The data herein is intended to provide the USACE with sufficient information to determine regulatory jurisdiction of aquatic resources subject to Section 404 of the CWA, and to evaluate the hydrological connectivity of such resources to a traditional navigable waterway, territorial sea, or navigable interstate waterway.

In support of the project, DOWL conducted a wetland delineation in four study areas totaling approximately 604.1 acres, as shown in Table 1 and Figure 2 (Appendix A).

Table 1: Study Area Descriptions

Name	Description	Acres
Airport Study Area	Areas within 300 feet of existing disturbance of operational surface of airport; 50-foot wide area on both sides of Airport Access Road in area of potential culvert replacement; temporary barge landing area	234.6
Pitka's Point Study Area	Pitka's Point Material site Site (areas within 100 feet of existing extent)	19.9
Mountain Village Study Area	Areas within 100 feet of existing developed extent	31.3
Marshall Study Area	Area of potential material site development; 300 foot-wide area around four-mile long access road alignment; barge landing site	318.3
	Total	604.1

1.1 Environmental Setting

1.1.1 Regional Setting

Each study area except the Marshall study area is located within the Interior Forested Lowland and Uplands ecoregion (Gallant et al. 1995) which has a growing season from May 3rd to October 3rd (USACE 2007). This ecoregion is characterized by a patch work of ecological characteristics. Regionwide unifying features include a lack of Pleistocene glaciation, a continental climate, a mantling of undifferentiated alluvium and slope deposits, a predominance of forests dominated by spruce and hardwood species, and a very high frequency of lightning fires. On this backdrop of characteristics is superimposed a finer grained complex of vegetation communities resulting from the interplay of permafrost, surface water, fire, local elevational relief, and hillslope aspect (Gallant et al. 1995). Due to the vastness of the ecoregion, temperature and precipitation varies.

All study areas are within the southwestern margin of the Nulato Hills physiographic division where it meets the Yukon-Kuskokwim Coastal Lowland at the Yukon River (DOT&PF 2007). This province consists of a near sea-level plain with bedrock hills riding about the plain's surface. Sand and silts compose the lowland which has numerous lakes and meandering streams.

All study areas are adjacent to the nearly 20-million-acre Yukon-Kuskokwim National Wildlife Refuge, which is comprised of the Yukon and Kuskokwim River deltas. The Saint Mary's Airport study area is located in a portion of the refuge known as the Yukon- Kuskokwim Lowlands Unit.

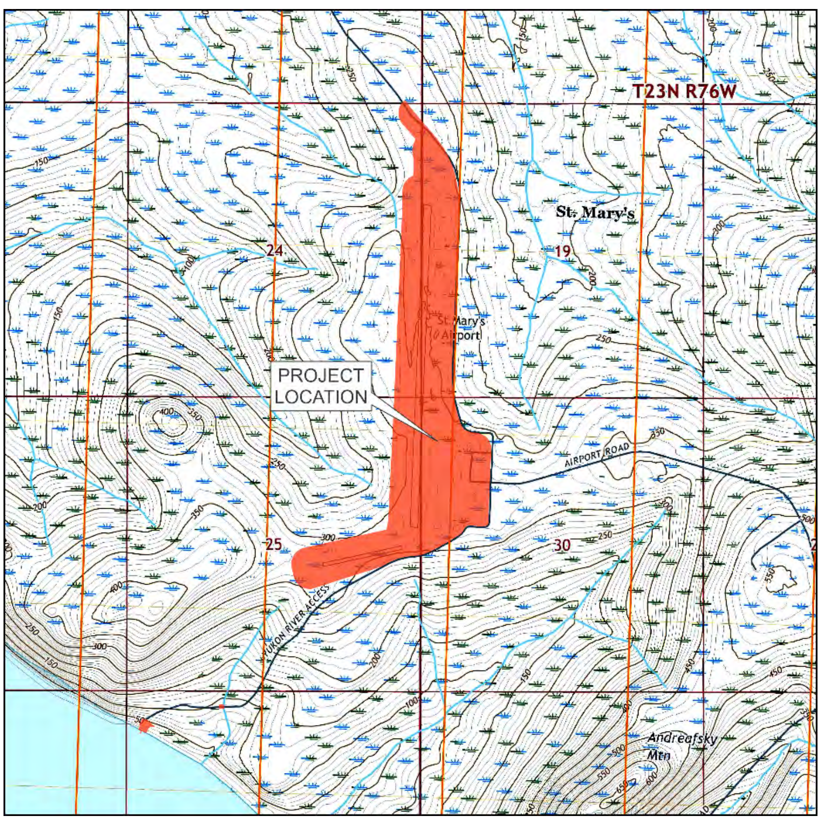
The Marshall study area is located within the Subarctic Coastal Plains ecoregion. Marshall is located on a small uplift above the Yukon basin, lying between the vast, flat Yukon Delta and mountains that rise to more than 1,000 feet above sea level. Air temperature can range from -54 to 86 degrees.

1.1.2 *Study Area Setting*

Vegetation in all study areas is typical of the lowland tundra found throughout the Yukon-Kuskokwim Delta. Adapted to conditions of high winds, little precipitation and discontinuous permafrost, the vegetation is largely graminoid herbaceous, scrub shrub, and dwarf scrub with occasional stands of open broadleaf forest. The Airport and Saint Mary's Material Site study areas are located along a ridge top, and near the airport are small stream headwaters that drain away in all directions, and eventually drain into the Yukon River. Thick stands of willow and alder are present in shallow drainages. Continuous permafrost is present near the airport (DOT&PF 2007).

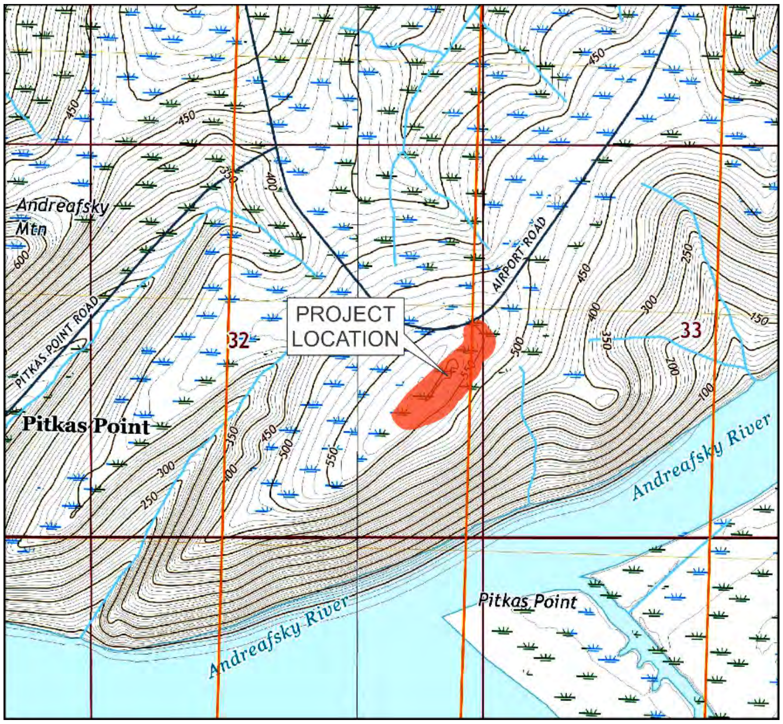
Marshall's maritime climate provides a wide variation between winter and summer temperatures. The eastern portion of the study area is on the side of Pilcher Mountain which is composed of mixed sub alpine tundra/shrub hillside vegetation with lichen and moss understory. Vegetation occurs along terraces, with felsenmere along the side slopes and western terrace edges (DOT&PF 2010). The middle portion of the study is predominantly tussock tundra and dwarf shrub-scrub habitats, with drainages containing an abundance of willow species. The western portion of the Marshall study area contains willow scrub and alder on a rock bluff approximately 25-40 above the Yukon River. The area between the riverbank and the top of the bluff, approximately 200-300 feet from shore, is covered in thick alder brush (PDC 2012).

Topography of all study areas are shown in Graphics 1-4.



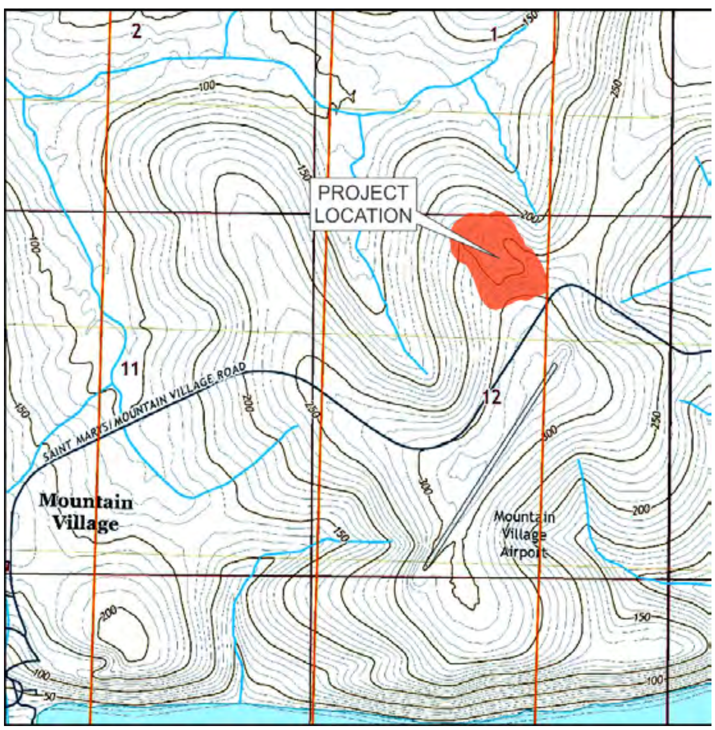
Graphic 1: Airport Study Area

USGS Kwiguk A-3 SW Quadrangle 2016, 1:25,000-Scale



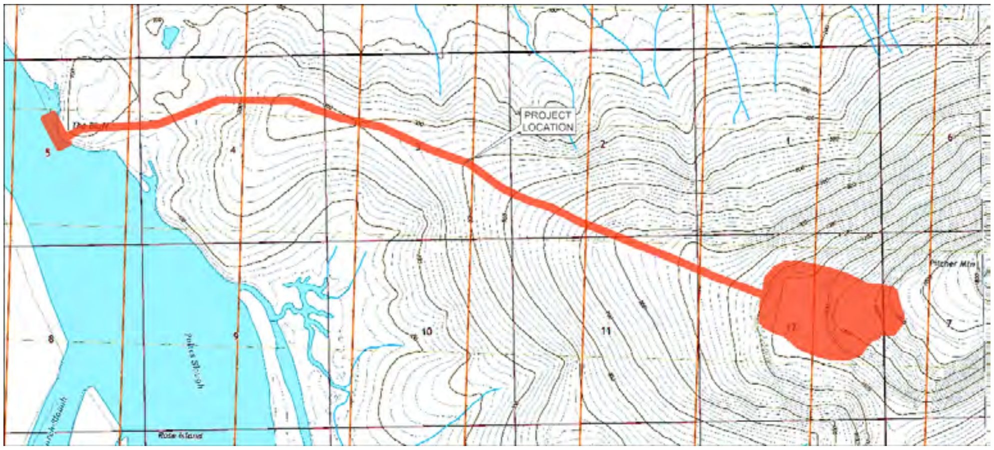
Graphic 2: Pitka's Point Study Area

USGS Kwiguk A-3 SE Quadrangle 2016, 1:25,000-Scale



Graphic 3: Mountain Village Study Area

USGS Kwiguk A-4 SE Quadrangle 2016, 1:25,000-Scale

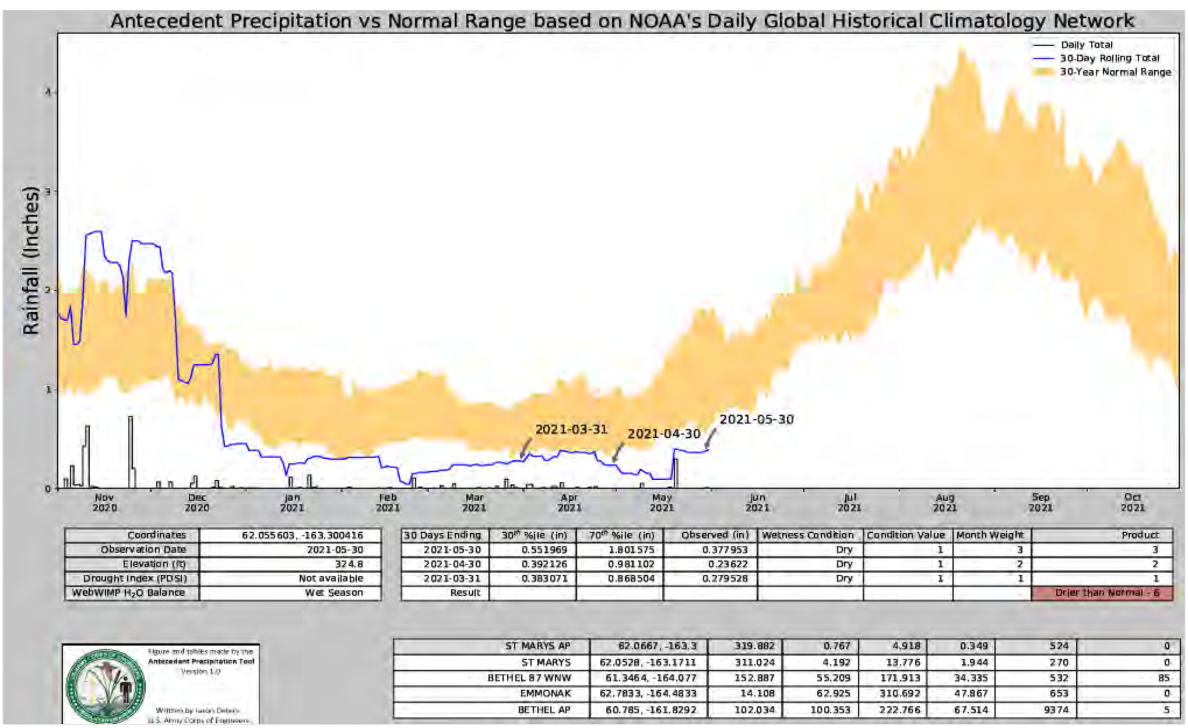


Graphic 4: Marshall Study Area

USGS Marshall D-1 NE Quadrangle 2016, 1:25,000-Scale

1.2 Precipitation and Surface Hydrology

The Antecedent Precipitation Tool Version 1.0 was utilized using Bethel as the closest station for NOAA's Daily Global Historical Climatology Network (GHCN) (Graphic 5). Daily precipitation values over a 30-day period were analyzed in order to examine the 3-month period preceding data collection activities to determine if surface hydrology or soil moisture conditions observed were drier than normal, normal, or wetter than normal (USACE 2020).



Graphic 5: Bethel NOAA Daily GHCN 2021 Precipitation Data

For the 3 months preceding fieldwork, precipitation observations were considered drier than normal (USACE 2020). Conditions immediately prior to the collection of field data in early June were drier than normal. The study area normally receives at least half an inch of rainfall during the month of May. In 2020, the average was well under 0.5 inches. An explanation of how drier conditions impact the delineation is included in Section 4.0.

2.0 METHODS

2.1 Existing Data and Preparatory Analysis

The following data were reviewed prior to conducting the field investigation:

- National Wetland Inventory (NWI)
- National Hydrographic Data
- USGS Quadrangles (1:25,000)
    - Kwiguk A3 SW
    - Kwiguk A3 SE
    - Kwiguk A4 SE
    - Marshall D1 NE
- As the United States Department of Agriculture soil data was unavailable, multiple geotechnical survey reports for the area were consulted to assist with understanding soil conditions and they include:
    - 2004 geotechnical report of the airport noted that the topography has a cover of ice-rich soil derived from wind-transported silt and weathered rock. Soils are discontinuously frozen with permafrost found in thinly vegetated, exposed areas just inside the margin of the brush line. Soil in the unfrozen zone contained lower moisture and subsidence was evident. In tundra areas, permafrost was usually observed penetrating deeper than the top of the bedrock.
- Aerial imagery
    - Mountain Village, 2019
    - Airport Study Area, 2019
    - Marshall, 2016
- Alaska Department of Fish and Game Anadromous Waters Catalog
- Existing wetland mapping from two previous delineations

2.2 Field Data Collection and Mapping

DOWL Environmental Specialists Josh Grabel and Sam Sterling conducted the wetland delineation fieldwork June 6-13, 2021 in accordance with *Part IV of the Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region [Version 2.0,* (USACE 2007)*]*. Wetlands were classified and grouped according to guidelines outlined in the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and all vegetation was classified to Level III of the Alaska Classification System (Viereck et al 1992). Data collection locations were selected to verify the preliminary mapping.

Data was collected at *test holes* using the three-parameter approach combining site-specific indicators of hydrophytic vegetation, hydric soils, and wetland hydrology. Field notes were taken to document landscape topography and general site characteristics. At each sampling location, soil pits were excavated to a depth of at least 24 inches, or to the presence of a restrictive digging layer. Soil and hydrology characteristics of texture, color, saturation, and depth to water table were recorded on Corps Routine Wetland Determination forms (Appendix B). Soil color was recorded using *Munsell Soil-Color Charts* (Munsell Color 2012). Data collected at test holes are prefixed with 'TH.' Additionally, *photo points* were taken to document site conditions, confirm dominant plant species, extrapolate data to similar habitat areas, or to make a wetland/upland determination when soil excavation was not necessary. Photo point locations are prefixed with 'PP.'

The following references were used to assist with the field identification of dominant vegetative species:

- Alaska Trees and Shrubs (Viereck, et al 2007)
- Plants of the Pacific Northwest Coast (Pojar, et al 2004)
- Plants of the Western Boreal Forest and Aspen Parkland (Johnson, et al 1995)
- Field Guide to Alaskan Wildflowers (Pratt 1989)
- Flora of Alaska and Neighboring Territories: A Manual of the Vascular Plants (Hultén
- 1968)
- Wetland Sedges of Alaska (Tande, et al 2003)
- Willows of Interior Alaska (Collet 2002)

An Apple iPad tablet with ESRI Arc Collector Global Positioning System with 10-feet accuracy was used to delineate wetland/upland boundaries, and ESRI ArcMap was used to calculate acreages. Final mapping was based on interpretation of aerial and site photos, topographic data, and field observations.

2.3 Wetland Functions

The functional rating of potentially jurisdictional areas was determined using the Alaska Wetland Assessment Method (AKWAM) method developed by the DOT&PF (DOT&PF 2011). Functions are the physical, chemical, and biological processes that occur in ecosystems (COE 2009). Shoreline stabilization is an example of a wetland function. Services are the benefits that human populations receive from functions that occur in ecosystems (COE 2009), such as wetlands' use for recreation or flood control. This method rates each wetland Assessment Area for up to 10 functions and services:

- Habitat for species of concern
- General wildlife support
- General fish support
- Water storage

- Sediment/nutrient/toxicant retention and removal
- Sediment/shoreline stabilization
- Production export/terrestrial and aquatic food chain support
- Groundwater discharge/recharge
- Uniqueness
- Recreation/education potential

The complete methodology used to assess functions and determine a value can be found online at http://dot.alaska.gov/stwddes/desenviron/assets/pdf/nwp/akwam1_0.pdf.

3.0 RESULTS

3.1 General Characteristics

In all study areas, wetlands are characterized by Tussock Cotton-Grass (*Eriophorum vaginatum*), Bigelow's Sedge (*Carex bigelowii*), Leafy Tussock sedge (*Carex aquatilis*), and shrubs such as Marsh Labrador Tea (*Rhododendron tomentosum)*. Willow shrubs such as Felt-leaf Willow (*Salix alaxensi*s) and Diamond-leaf Willow (*Salix pulchra*) were among the dominant species outside of wet meadows. In general, soils in wetlands had a thick organic layer underlain by permafrost.

Streams were largely absent from all study areas, which was due to the limits of the study area rather than a lack of streams. All wetlands within each study area were connected to tributaries of the Yukon River.

Most shrub thickets were indicative of uplands and typically had 75 percent or greater cover of shrubs five feet tall or taller. Common species included Diamond-Leaf Willow (*Salix pulchra),* Barclay's Willow (*Salix barclayi*), and Speckled alder (*Alnus incana*). The understory was composed of herbaceous graminoids such as Bluejoint (*Calamagrostis canadensis) and* Field Horsetail *(Equisetum arvense*).

Results are discussed by study area below. Data sheets for all test holes and all photos are in Appendix B.

3.1.1 Airport Study Area

The Airport study area contains approximately 43.7 acres of jurisdictional wetland (18.7%), 3.4 acres of non-jurisdictional wetland (1.4%), 0.3 acre of waters (0.1%), and approximately 187.2 (79.8%) acres of upland (79.9%). Data was collected at 16 locations, as detailed in Table 1 and Figure 3 (Appendix A).

Table 1: Airport Study Area Results by Cowardin Class

Cowardin	Habitat (Viereck)	Acres	Test Holes	Photo Points
Upland	Developed/Disturbed	123.1	TH-16	PP-1, PP-2, PP-3, PP-4, PP-5, PP-8, PP-12, PP-15, PP-18, PP-46, PP-49, PP-58, PP-59
	Open Low Shrub, Closed Low Shrub	38.1	TH-4, TH-14; TH-18, TH-20	PP-7, PP-47, PP-48, PP-50, PP-51, PP-52, PP-53, PP-55, PP-56
	Open Tall Shrub, Closed Tall Shrub	26.0	TH-1, TH-3, TH-5, TH-12, TH-13, TH-15, TH-19	PP-11, PP-13, PP-17, PP-38, PP-41, PP-43, PP-44, PP-45
PEM1C (non-jurisdictional)	Wet Graminoid Herbaceous	3.2		PP-14, PP-16
PSS1B (non-jurisdictional)	Open Low Shrub	0.2		PP-54, PP-57
PEM1/SS1C	Open Low Shrub	0.05		PP-6
PSS1C	Open Tall Shrub	1.6		PP-39, PP-40, PP-42
PSS1/EM1B	Open Low Shrub	42.0	TH-2, TH-6, TH-11, TH-17	PP-9, PP-10
R2UBH	Water	0.3		

Plant species observed in the Airport Study Area are shown in Table 2.

Table 2: Plant Species Observed in Airport Study Area

Scientific Name	Common Name	Indicator Status
Achillea millefolium	Common yarrow	FAC
Alnus viridus	Sitka alder	FAC
Alnus incana	Speckled alder	FAC
Angelica lucida	Seacoast angelica	FACU
Arctostaphylos uva-ursi	Red bearberry	UPL
Betula nana	Swamp birch	FAC
Calamagrostis canadensis	Bluejoint	FAC
Carex bigelowii	Bigelow's Sedge	FAC
Chamaenerion angustifolium	Narrow-leaf Fireweed	FACU
Empetrum nigrum	Black Crowberry	FAC
Equisetum arvense	Field Horsetail	FAC
Equisetum sylvaticum	Woodland Horsetail	FAC
Eriophorum vaginatum	Tussock Cotton-Grass	FACW
Gymnocarpium dryopteris	Northern Oak Fern	FACU
Pedicularis langsdorfii	Langsdorf's lousewort	FAC
Petasites frigidus	Arctic Sweet Coltsfoot	FACW
Populus balsamifera	Balsam Poplar	FACU
Pyrola asarifolia	Pink Wintergreen	FACU
Pyrola grandiflora	Arctic Wintergreen	FAC
Rannunculus repens	Creeping Buttercup	FAC
Rhododendron tomentosum	Marsh Labrador-Tea	FACW
Rubus chamaemorus	Cloudberry	FACW
Salix alaxensis	Felt-leaf Willow	FAC
Salix barclayi	Barclay's Willow	FAC
Salix pulchra	Diamond Leaf Willow	FACW
Salix richarCsonii	Richardson's Willow	FACW
Streptopus amplexifolius	Clasping Twistedstalk	FACU
Taraxacum officinale	Common Dandelion	FACU
Trientalis europaea	Arctic Starflower	FACU
Vaccinium uliginosum	Alpine Blueberry	FAC
Valeriana capitata	Clustered Valerian	FAC
Viola palustris	Alpine Marsh Flower	FACW

Notes: FAC = Facultative; FACU = Facultative Upland; FACW = Facultative Wetland; OBL = Obligate

Table 3 summarizes observed soils at test holes.

Table 3: Soil Observations at Test Holes within the Airport Study Area

Test Hole	Organic Mat Thickness (inches)	Permafrost	Hydric
TH-1	4	None	No
TH-2	17	at 8 inches	Yes
TH-3	3	None	No
TH-4	2	None	No
TH-5	4	None	No
TH-6	10	at 10 inches	Yes
TH-11	12	at 8 inches	Yes
TH-12	1	None	No
TH-13	10	None	No
TH-14	3	None	No
TH-15	4	None	No
TH-16	2	None	No
TH-17	10	at 10 inches	Yes
TH-18	6	None	No
TH-19	3	None	No
TH-20	15	None	No

3.1.2 Pitka's Point Study Area

The Pitka's Point study area contains 0.3 acre of wetland (1.6%) and 19.6 acres of upland (98.4%). Data was collected at two locations, as detailed in Table 4.

Table 4: Pitka's Point Study Area Results, by Cowardin Class

Cowardin	Habitat (Viereck)	Acres	Test Holes	Photo Points
Upland	Developed/Disturbed	10.4		PP-37
	Open Low Shrub	2.7		PP-32; PP-34
	Open Tall Shrub, Closed Tall Shrub	6.5	TH-10	PP-33, PP-35, PP-36
PSS1/EM1B	Open Low Shrub	0.3	TH-9	

Plant species observed in the Pitka's Point Area are shown in Table 5.

Table 5: Plant Species Common to the Pitka's Point Study Area

Scientific Name	Common Name	Indicator Status
Alnus incana	Speckled alder	FAC
Betula nana	Swamp birch	FAC
Calamagrostis canadensis	Bluejoint	FAC
Carex bigelowii	Bigelow's Sedge	FAC
Chamaenerion angustifolium	Narrow-leaf Fireweed	FACU
Empetrum nigrum	Black Crowberry	FAC
Equisetum arvense	Field Horsetail	FAC
Eriophorum vaginatum	Tussock Cotton-Grass	FACW
Rhododendron tomentosum	Marsh Labrador-Tea	FACW
Rubus chamaemorus	Cloudberry	FACW
Salix pulchra	Diamond Leaf Willow	FACW
Trientalis europaea	Arctic Starflower	FACU
Vaccinium uliginosum	Alpine Blueberry	FAC

Notes: FAC = Facultative; FACU = Facultative Upland; FACW = Facultative Wetland; OBL = Obligate

Table 6 summarizes observed soils at test holes.

Table 6: Soil Observations at Test Holes within the Pitka's Point Study Area

Test Hole	Organic Mat Thickness (inches)	Permafrost	Hydric
TH-9	14	at 8 inches	Yes
TH-10	4	None	No

3.1.3 Mountain Village Study Area

The Mountain Village study area contains 6.1 acres of wetland (19.5%), 1.0 acre of non-jurisdictional wetland (3.2%) and 24.2 acres of upland (77.3%). Data was collected at two locations, as detailed in Table 7.

Table 7: Mountain Village Study Area Results, by Cowardin Class

Cowardin	Habitat (Viereck)	Acres	Test Holes	Photo Points
Upland	Developed/Disturbed	21.5		PP-23, PP-31
	Open Low Shrub	0.7		
	Closed Tall Shrub	2.0	TH-8	PP-21, PP-24, PP-27, PP-29
PUBH (Non-jurisdictional)	Water	1.0		
PSS1/EM1B	Open Low Shrub	5.9	TH-7	PP-19; PP-20, PP-22, PP-26; PP-28, PP-30
	Open Tall Shrub	0.1		PP-25

Plant species observed in the Mountain Village Study Area are shown in Table 8.

Table 8: Plant Species Common to the Mountain Village Study Area

Scientific Name	Common Name	Indicator Status
Betula nana	Swamp birch	FAC
Calamagrostis canadensis	Bluejoint	FAC
Carex bigelowii	Bigelow's Sedge	FAC
Chamaenerion angustifolium	Narrow-leaf Fireweed	FACU
Equisetum sylvaticum	Woodland Horsetail	FAC
Eriophorum vaginatum	Tussock Cotton-Grass	FACW
Matricaria struthiopteris	Ostrich Fern	FACW
Rhododendron tomentosum	Marsh Labrador-Tea	FACW
Salix pulchra	Diamond Leaf Willow	FACW
Streptopus amplexifolius	Clasping Twistedstalk	FACU
Vaccinium uliginosum	Alpine Blueberry	FAC
Vaccinium vitis-idaea	Northern Mountain Cranberry	FAC

Notes: FAC = Facultative; FACU = Facultative Upland; FACW = Facultative Wetland; OBL = Obligate

Table 9 summarizes observed soils at test holes.

Table 9: Soil Observations at Test Holes within the Mountain Village Study Area

Test Hole	Organic Mat Thickness (inches)	Permafrost	Hydric
TH-7	8	At 8 inches	Yes
TH-8	8	At 8 inches	No

3.1.4 *Marshall Study Area*

The Marshall study area contains 186.9 acres of wetlands (58.7%), 7.9 acres of riverine (2.5%), and 123.4 acres of uplands (38.8%). Data was collected at 13 locations, as detailed in Table 10.

Table 10: Marshall Study Area Results, by Cowardin Class

Cowardin	Habitat (Viereck)	Acres	Test Holes	Photo Points
Upland	Barren	85.9		PP-60, PP-61, PP-64, PP-67, PP-68, PP-70, PP-73, PP-79
	Dry Graminoid Herbaceous	10.9		PP-66
	Open Low Shrub	17.4	TH-3A, TH-5A	
	Open Tall Shrub; Closed Tall Shrub	9.2	TH-9A, TH-12A, TH-13A	PP-90, PP-92
PEM1/SS1B	Open Low Shrub	66.6	TH-7A, TH-8A	PP-78, PP-82, PP-83
PEM1/SS1C	Open Low Shrub	4.1	TH-4A	PP-62
PEM1B	Wet Graminoid Herbaceous [1]	>0.1		PP-81
	Open Low Shrub	1.53		
PEM1C	Wet Graminoid Herbaceous	3.0		PP-77; PP-81
PEM1H	Wet Graminoid Herbaceous	0.1		PP-91
PSS1/EM1B	Open Low Shrub	102.9	TH-1A, TH-2A, TH-6A, TH-10A	PP-63, PP-71, PP-72, PP-74, PP-75, PP-76, PP-86, PP-87, PP-88, PP-89
PSS1/EM1C	Open Low Shrub; Closed Low Shrub	2.9		PP-65; PP-69, PP-77
PSS1B	Open Low Shrub; Closed Low Shrub	4.2	TH-11A	PP-84
	Closed Tall Shrub	1.2		PP-80, PP-85
R2UBH	Water	7.9		PP91

[1] Winter trails

Plant species observed in the Marshall Study Area are shown in Table 11.

Table 11: Plant Species Common to the Marshall Study Area

Scientific Name	Common Name	Indicator Status
Alnus incana	Speckled alder	FAC
Alnus viridus	Sitka alder	FAC
Arctous alpinus	Black torpedoberry	UPL
Betula nana	Swamp birch	FAC
Calamagrostis canadensis	Bluejoint	FAC
Carex aquatilis	Leafy Tussock sedge	OBL
Carex bigelowii	Bigelow's Sedge	FAC
Chamaenerion angustifolium	Narrow-leaf Fireweed	FACU
Dryopteris expansa	Spreading wood fern	FACU
Empetrum nigrum	Black Crowberry	FAC
Equisetum arvense	Field Horsetail	FAC
Eriophorum angustifolium	Tall Cotton-Grass	OBL
Eriophorum vaginatum	Tussock Cotton-Grass	FACW
Linnaea borealis	American Twinflower	FAC
Matricaria struthiopteris	Ostrich Fern	FACW
Pedicularis langsdorfii	Langsdorf's lousewort	FAC
Picea mariana	Black Spruce	FACW
Rhododendron tomentosum	Marsh Labrador-Tea	FACW
Ribes triste	Swamp Red Currant	FAC
Rubus chamaemorus	Cloudberry	FACW
Rubus pedatus	Strawberry Leaf Raspberry	FAC
Salix pulchra	Diamond Leaf Willow	FACW
Salix richardsonii	Richardson's Willow	FACW
Spirea stevenii	Steven's Meadowsweet	FACU
Streptopus amplexifolius	Clasping Twistedstalk	FACU
Trientalis europaea	Arctic Starflower	FACU
Vaccinium uliginosum	Alpine Blueberry	FAC
Vaccinium vitis-idaea	Northern Mountain Cranberry	FAC

Notes: FAC = Facultative; FACU = Facultative Upland; FACW = Facultative Wetland; OBL = Obligate

Table 12 summarizes observed soils at test holes.

Table 12: Soil Observations at Test Holes within the Marshall Study Area

Test Hole	Organic Mat Thickness (inches)	Permafrost	Hydric
TH-1A	10	At 10 inches	Yes
TH-2A	10	At 10 inches	Yes
TH-3A	12	None	No
TH-4A	3	None	Yes
TH-5A	4	None	No
TH-6A	12	At 8 inches	Yes
TH-7A	10	At 10 inches	Yes
TH-8A	10	At 10 inches	Yes
TH-9A	8	At 8 inches	Yes

3.2 Functional Assessment

Wetlands were assessed for functions and their overall value by Assessment Area, using the AKWAM method. Wetlands identified during the delineation were grouped into three Assessment Areas (Slope, Riverine, and Flat) based on their location relative to the Yukon River, hydrogeomorphic position, and extensive wetland complexes. Slope and Riverine HGM assessment areas were relatively small compared to Flat HGM wetland complexes that dominate the study area.

One Riverine HGM wetland is adjacent the Yukon River at the Marshall Pilcher Mountain Barge Landing Area. The 0.1 acre of wetland is composed of emergent vegetation growing alongside a river sough. The most prominent functions are wildlife support, general fish support, production export/food chain support, and groundwater discharge locations.

Slope HGM wetlands compose of 17.3 acres of the study area. These wetlands are made up of herbaceous, scrub shrub, and forested Cowardin classes that are saturated or seasonally flooded due to precipitation, groundwater, or snowmelt. The most prominent functions are general wildlife support, sediment/nutrient/toxicant removal, production export/food chain support, and groundwater discharge.

Flat HGM wetlands dominate the study area at over 219.4 acres. These wetlands are composed of herbaceous and scrub shrub Cowardin classes that are saturated or seasonally flooded due to melting snowpack and precipitation. They are underlain by permafrost and include wet meadows, low shrubs, and dwarf ericaceous vegetation types. The most prominent functions are general wildlife support, sediment/nutrient/toxicant removal, production export/food chain support, and uniqueness.

Figures for the functions analysis are in Appendix A, Figure 4, and data sheets for the three Assessment Areas are included in Appendix C.

Category 1 is the highest ranking and Category 4 is the lowest ranking possible to classify wetlands. The riverine HGM assessment area is a Category 1 wetland based on high functioning for general fish support.

Category 2 have high to moderate functioning wetlands. These wetlands are those that: 1) provide habitat for very sensitive or important wildlife or plants; 2) are either difficult to replace (such as bogs); or 3) provide very high functions, particularly for wildlife habitat. These wetlands may occur more commonly than Category 1 wetlands, but still need a high level of protection. Slope HGM assessment areas are a Category 3 based on moderate functional assessment scoring and low to moderate for any significant criteria.

Category 3 have moderate to low functioning wetlands. These wetlands can provide important functions and values. They can be important for a variety of wildlife species and can provide watershed protection functions depending on where they are located. Generally these wetlands will be smaller and/or less diverse in the landscape than Category 2 wetlands. These wetlands usually have experienced some form of degradation, but to a lesser degree than Category 4 wetlands. Flat HGM assessment areas are included in Category 3 based on low-moderate functional assessment scoring and low to moderate for any significant criteria.

4.0 DISCUSSION

4.1 Climatic Conditions

Data was collected during drier than normal conditions and under drier conditions, wetland areas may not exhibit wetland hydrology. As an example, in order for an areas to be considered wetland, the water table must be observed within 12 inches of the surface, but during dry conditions, a 'dry season' water table may be deeper. Such conditions were observed in one location, TH 10, where the water table was observed 18 inches from the surface. Because drier than normal conditions were present, the 'dry-season' water table indicator was met. Shallow permafrost existed in most wetland test holes with no water table presence.

4.2 Jurisdiction

On April 21, 2020, the US Army Corps of Engineers (USACE) and Environmental Protection Agency published the Navigable Waters Protection Rule in the Federal Register (33 CFR Part 328), finalizing a revised definition of waters of the U.S. (WOTUS) under the Clean Water Act. The New WOTUS Rule (Rule) took effect June 22, 2020. There are four categories of WOTUS outlined in the Rule:

1. Territorial seas and traditional navigable waters (TNW)
2. Tributaries
3. Lakes, ponds, and impoundments of jurisdictional waters
4. Adjacent wetlands that physically touch other jurisdictional waters

4.2.1 Airport Study Area

The airport study area contains a traditional navigable water (Yukon River) and adjacent wetlands that physically touch other jurisdictional waters (tributaries). The study area also contains undisturbed wetlands that are considered jurisdictional. These wetlands occupy most of the project area.

In addition, the study area includes man-made wetlands created in uplands with no surface hydrologic connection during a typical year, that are considered non-jurisdictional. These include a low spot along the west side of the St. Mary's Airport Runway consisting of herbaceous wetland vegetation growing in surface water ponded on gravel fill material placed during runway construction, and two drainage features for runway surface drainage with wetland criteria but no surface connectivity to tributaries or other wetland features (15 acres). The two drainage features collect water from culverts at the airport infield at the inlet and become upland drainage features downslope. They are man-made drainage features that were created in uplands.

4.2.2 Pitka's Point Study Area

Wetlands in the Pitka's Point study area have a surface hydrological connection during a typical year to either adjacent wetlands or tributaries that connect to the Andreafsky River or the Yukon River. These wetlands are all jurisdictional.

4.2.3 Mountain Village Study Area

At the Mountain Village Material Site, wetlands in the study area have a surface hydrological connection during a typical year to tributaries of the Yukon River. These wetlands are jurisdictional. There is a manmade drainage pond constructed within fill material that drains the pit and several mining ponds in the disturbed central portion of the material site (0.25 acre). These are manmade, mining water containment and drainage features and would be considered non-jurisdictional.

4.2.4 Marshall Study Area

Wetlands in the Marshall study area have a surface hydrological connection during a typical year to either adjacent wetlands or tributaries that connect to Poltes Slough (Yukon River). These wetlands are all jurisdictional.

5.0 REFERENCES

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APPENDIX A - FIGURES

Project Location *(62.0617, -163.3008)*

DOT&PF Road

0 0.5 1 Mile

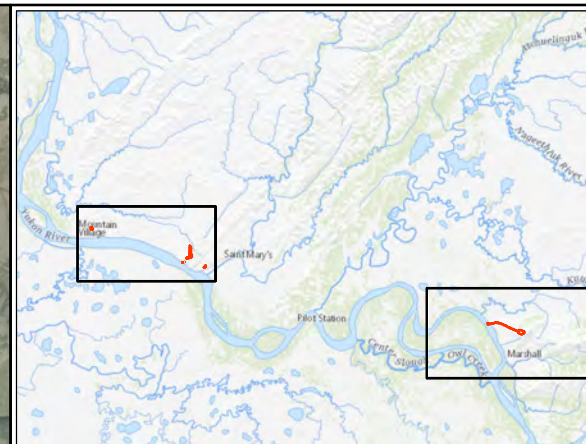
Project Location & Vicinity

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: June 23, 2021

FIGURE 1

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Location & Vicinity Map



Study Area
DOT&PF Road

Miles
0 1.25 2.5

Project Study Areas

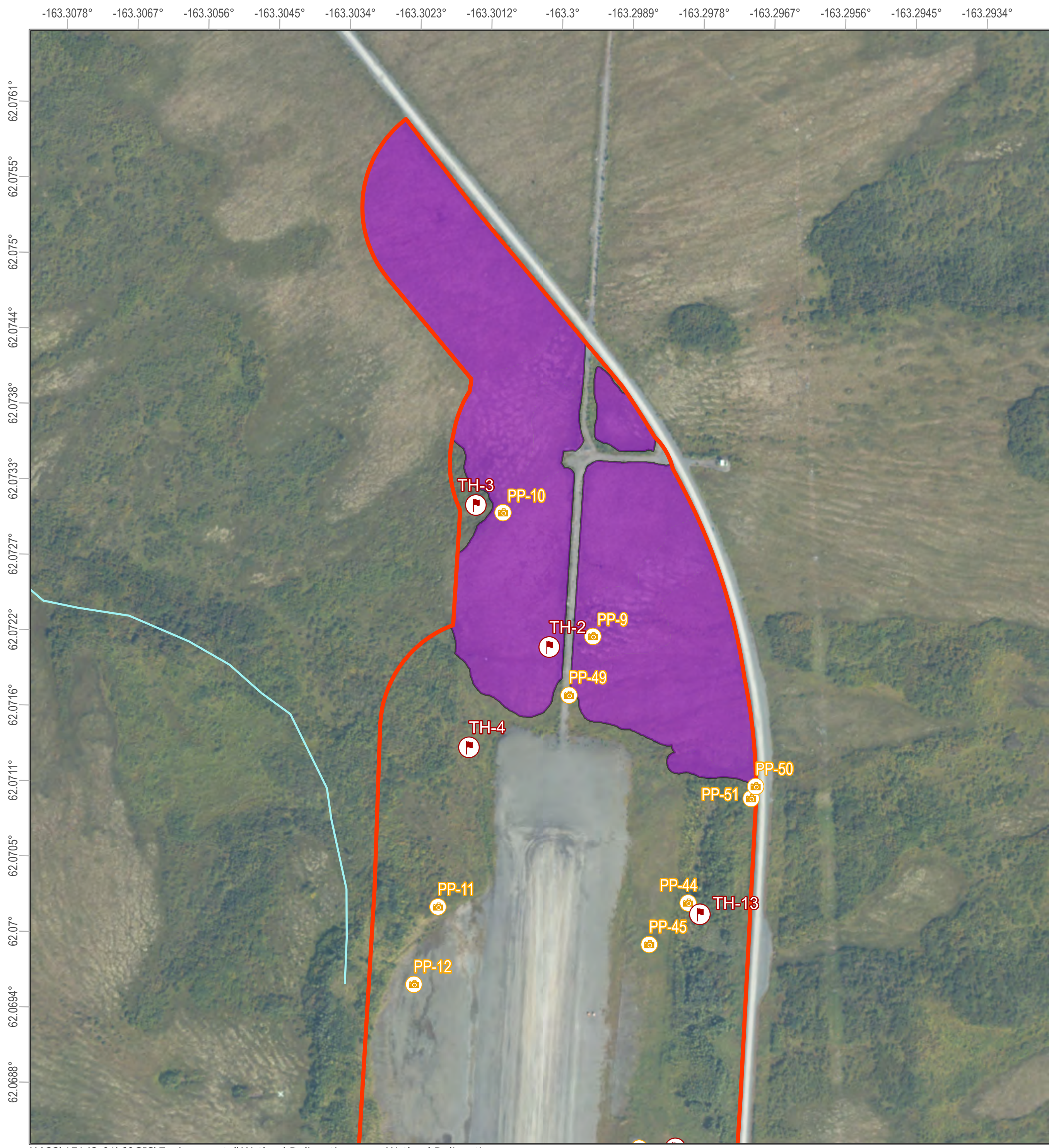
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: June 23, 2021

FIGURE 2

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Project Study Areas

Imagery Layer: Earthstar Geographics, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.



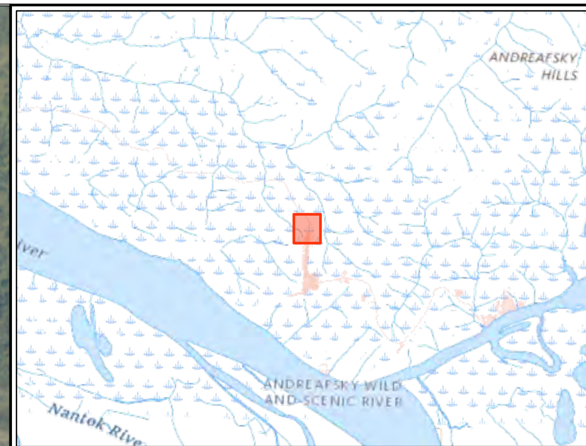


Photo Point
Test Hole
Stream (Alaska DNR)
Study Area

Cowardin

PSS1/EM1B
UPLAND

Feet
0 200 400

Aerial Year: 2019

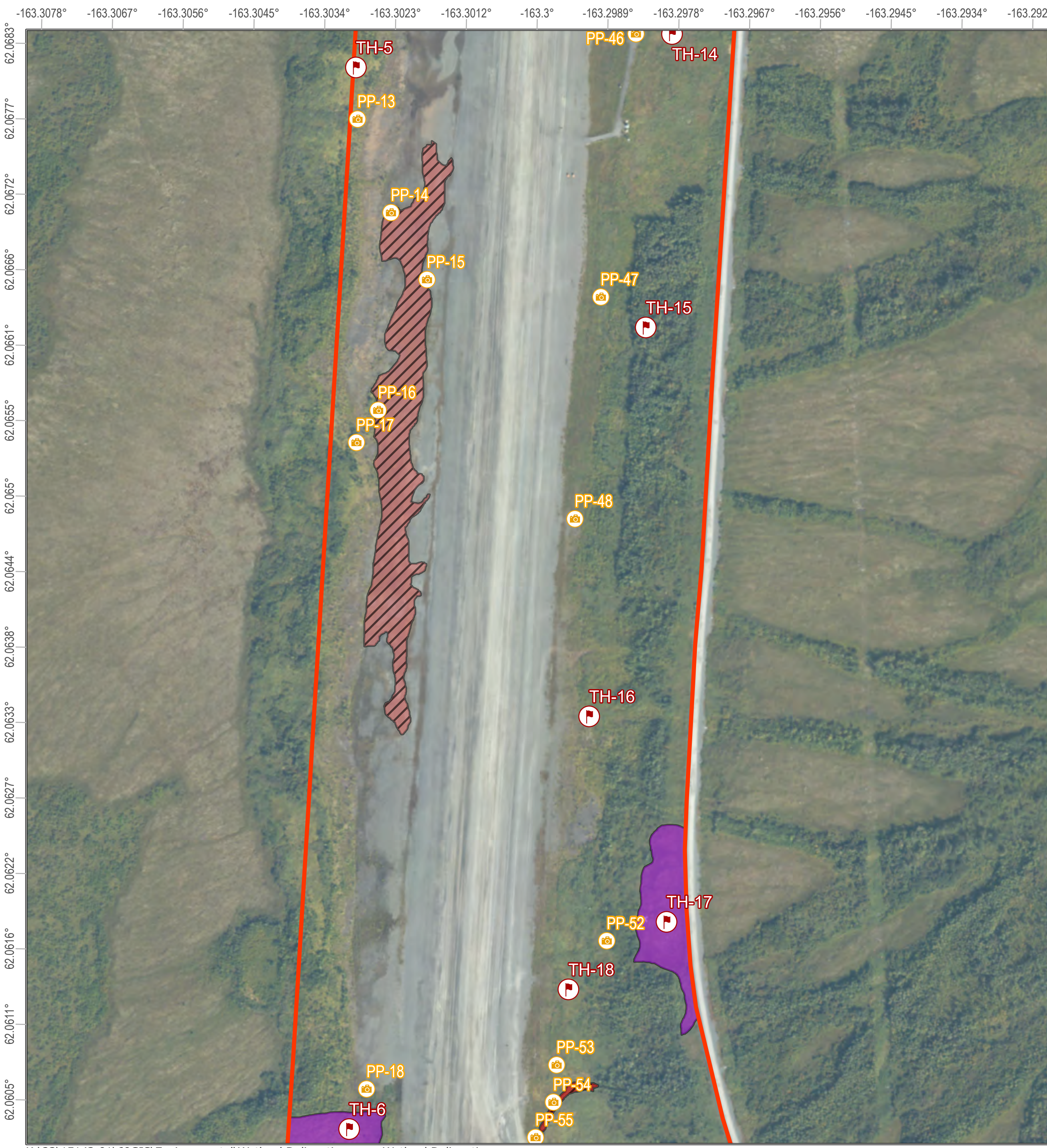
Airport Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 3A

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation
Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.



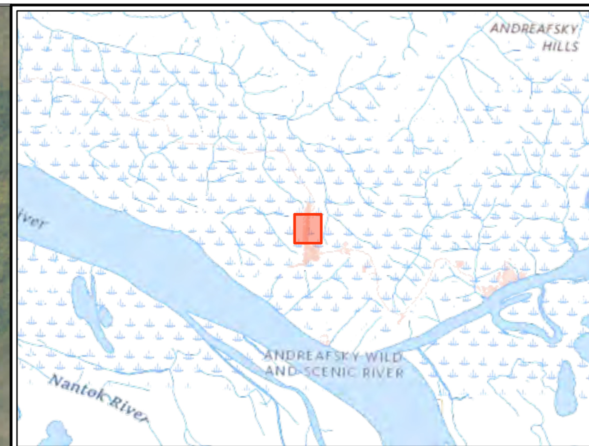


Photo Point

Test Hole

Study Area

Non-Jurisdictional Wetland

Cowardin

PEM1C

PSS1/EM1B

PSS1B

UPLAND

Feet
0 200 400

Aerial Year: 2019

Airport Study Area
Wetland Delineation

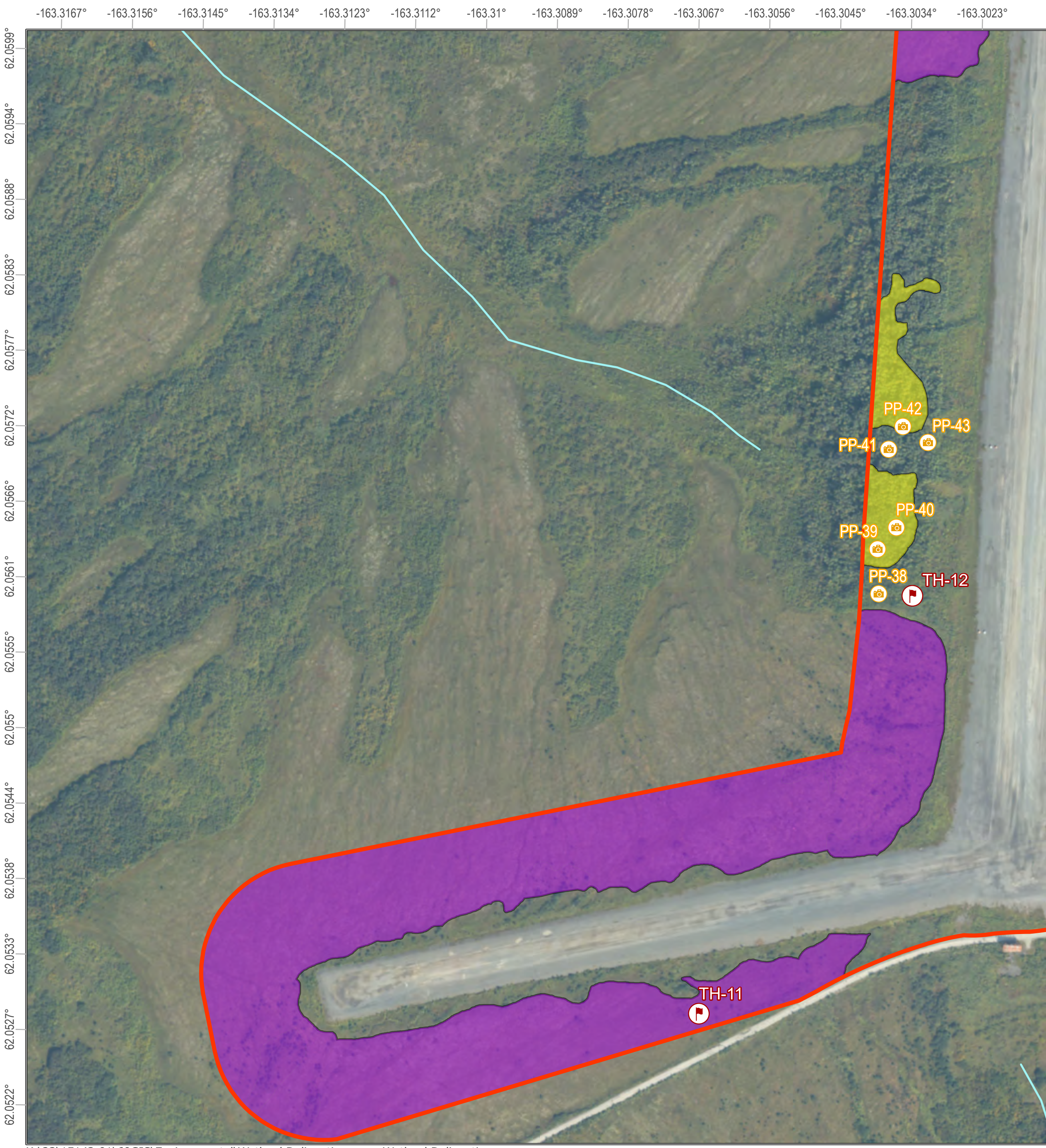
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 3B

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.



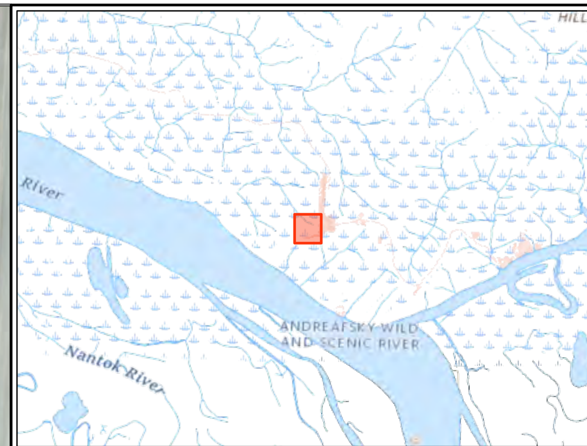


Photo Point
Test Hole
Stream (Alaska DNR)
Study Area

Cowardin

PSS1/EM1B
PSS1C
UPLAND

0 200 400 Feet

Aerial Year: 2019

Airport Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 3C

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

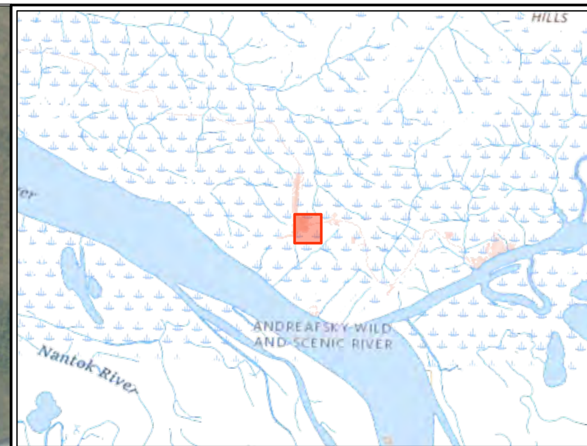


Photo Point

Test Hole

Stream (Alaska DNR)

Study Area

Non-Jurisdictional Wetland

Cowardin

PSS1B

UPLAND

Feet
0 200 400

Aerial Year: 2019

Airport Study Area
Wetland Delineation

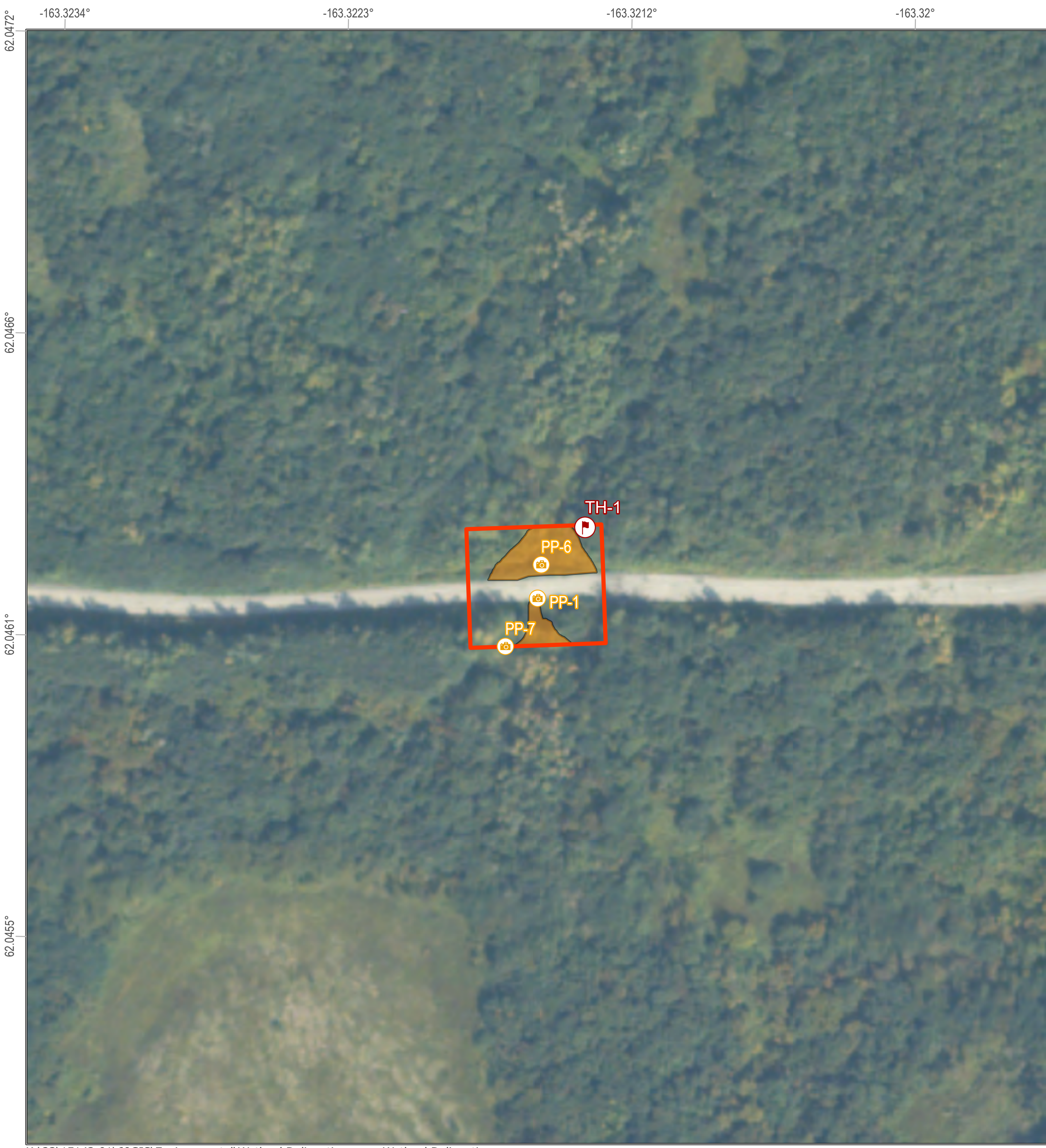
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 3D

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.



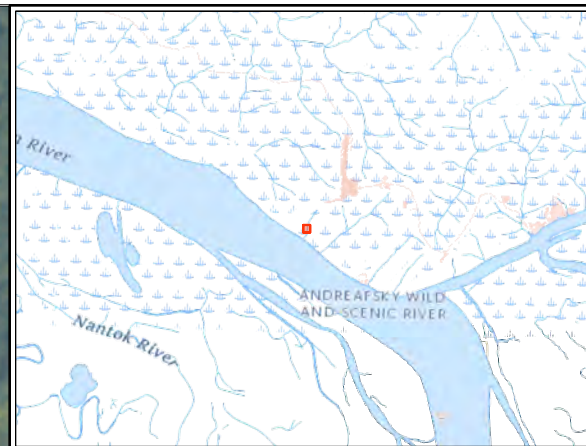


Photo Point

Test Hole

Study Area

Cowardin

PEM1/SS1C

UPLAND

Feet
0 50 100

Aerial Year: 2019

Airport Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 3E

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

Photo Point
Ordinary High Water
Study Area
Cowardin
R2UBH
UPLAND

Feet
0 80 160

Aerial Year: 2019

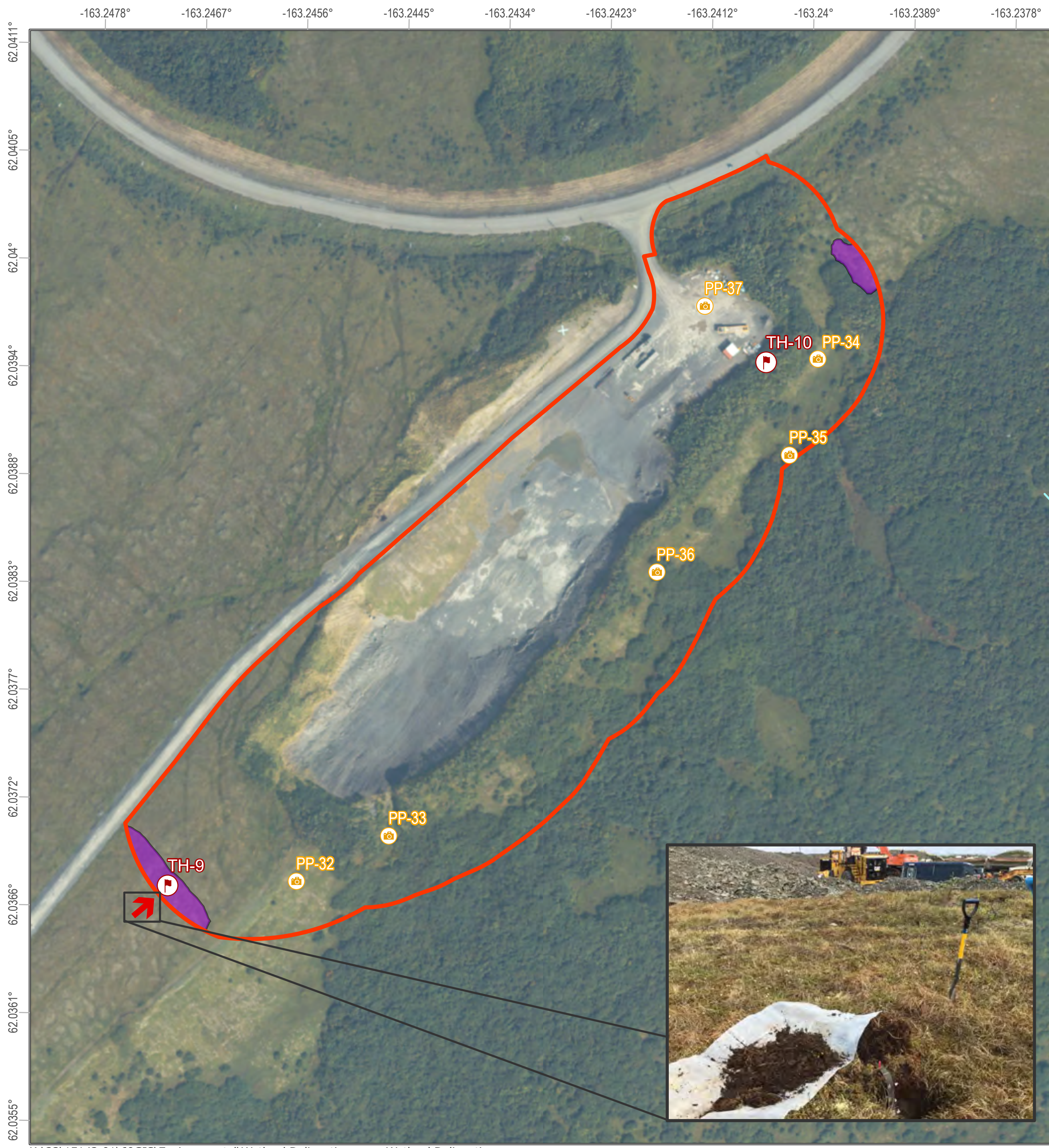
Airport Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 3F

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation
Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.



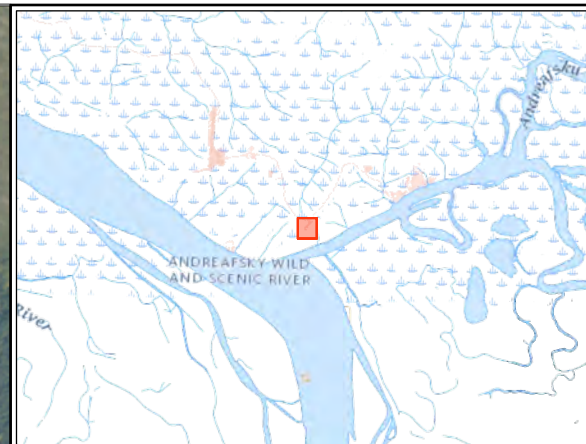


Photo Point
Test Hole
Stream (Alaska DNR)
Study Area
Cowardin
PSS1/EM1B
UPLAND

Feet
0 140 280

Aerial Year: 2019

Pitkas Point Material Location
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 4A

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

Photo Point
Test Hole
Stream (Alaska DNR)
Study Area
Non-Jurisdictional Wetland *(Disturbed)*

Cowardin

PSS1/EM1B
PUBH
UPLAND

Feet
0 140 280

Aerial Year: 2019

Mountain Village Material Location Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 5A

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation
Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

Photo Point

Test Hole

Study Area

Cowardin

PEM1H

PSS1/EM1B

R2UBH

UPLAND

Feet

0 200 400

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6A

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

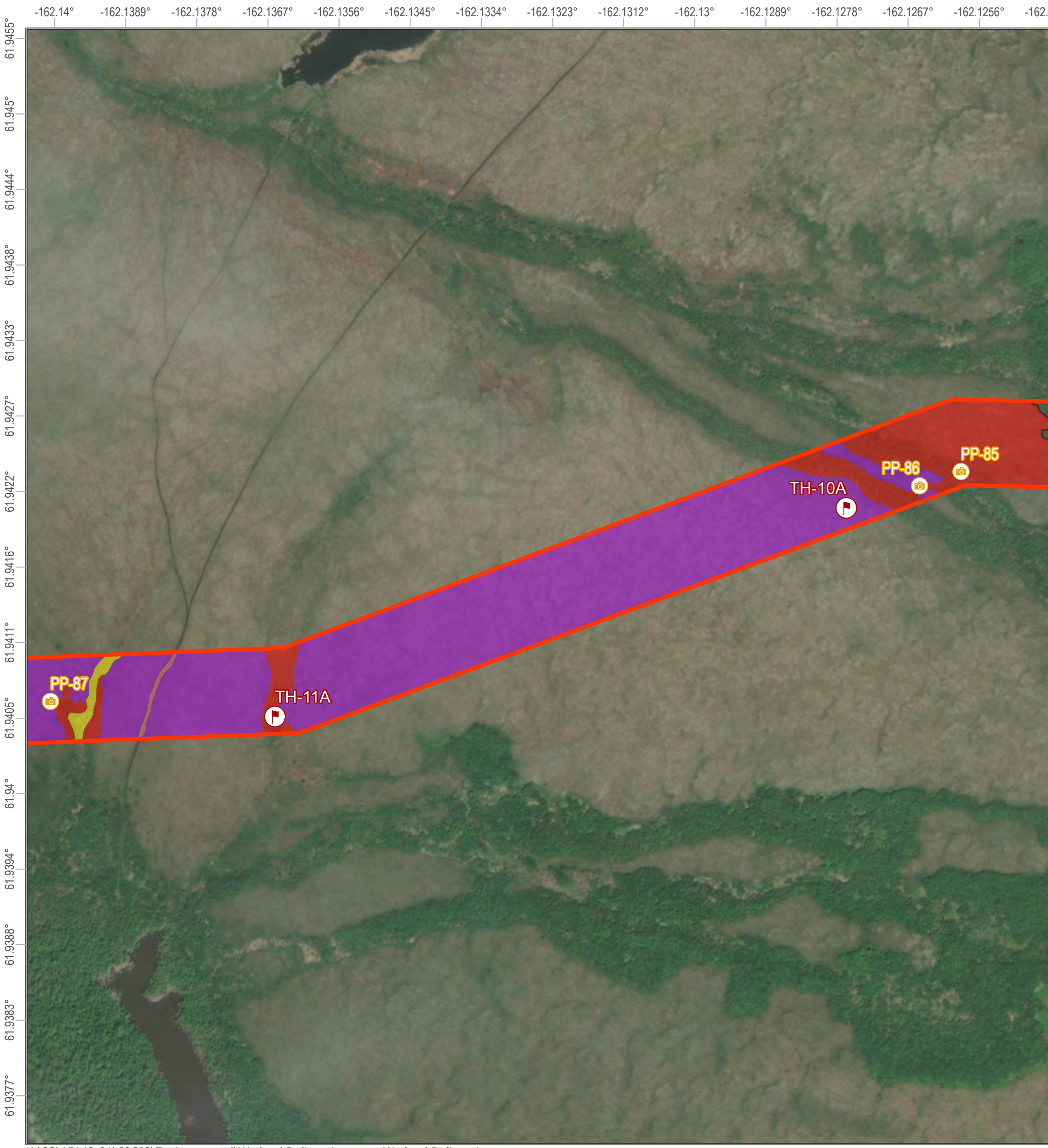


Photo Point
Test Hole
Study Area

Cowardin

PEM1C
PSS1/EM1B
PSS1B
PSS1C
UPLAND

Feet
0 200 400

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6B

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

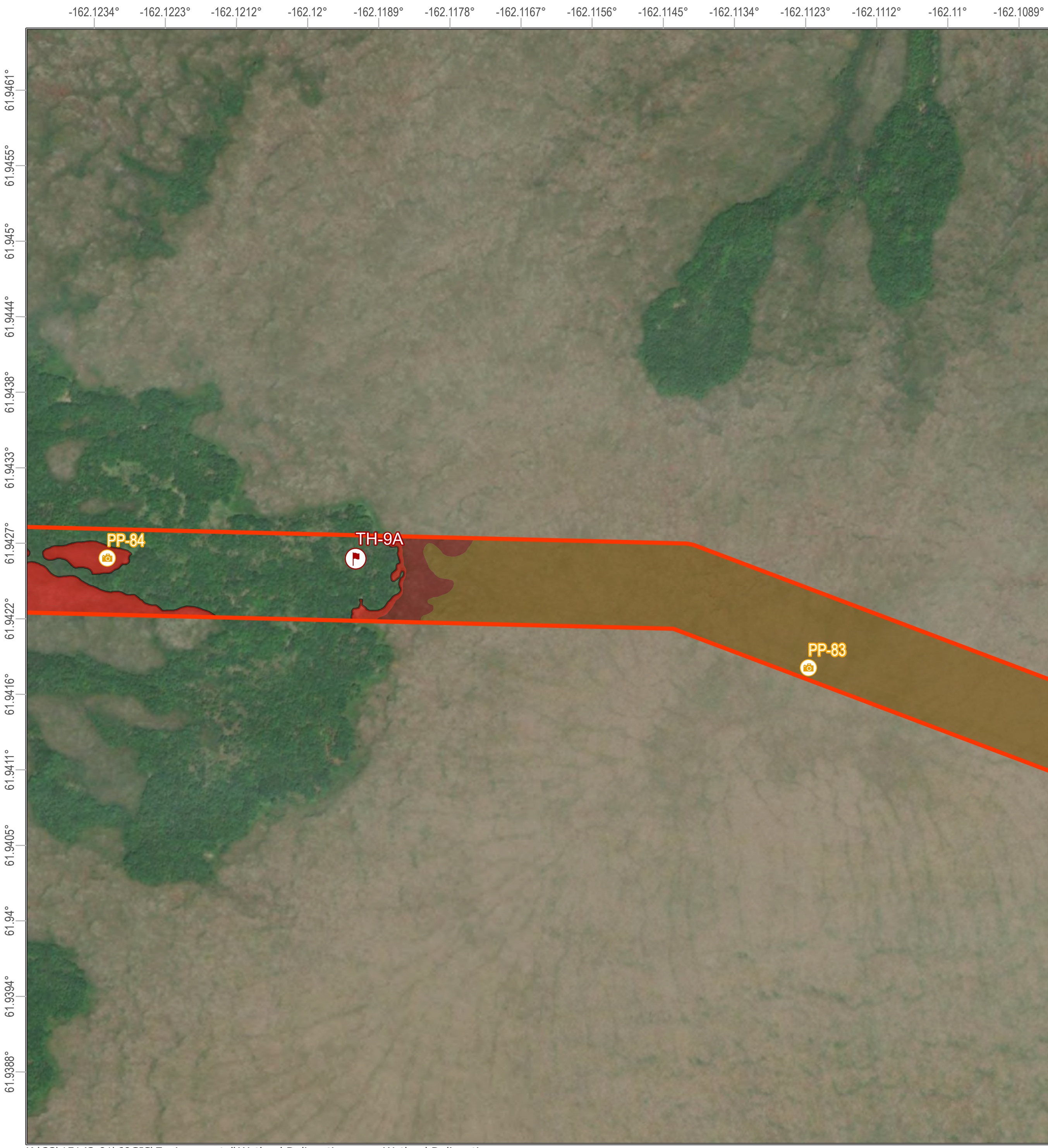


Photo Point

Test Hole

Study Area

Cowardin

PEM1/SS1B

PEM1B

PSS1B

UPLAND

Feet
0 200 400

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6C

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

Photo Point

Study Area

Cowardin

PEM1/SS1B

UPLAND

Feet
0 200 400

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6D

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

Photo Point

Test Hole

Study Area

Cowardin

PEM1/SS1B

PEM1B

PEM1C

UPLAND

Feet
0 200 400

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6E

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

Photo Point
Test Hole
Study Area

Cowardin

PEM1/SS1B
PEM1C
PSS1/EM1B
PSS1B
UPLAND

0 200 400 Feet

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6F

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation
Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

Photo Point

Study Area

Cowardin

PEM1/SS1B

PEM1B

PEM1C

PSS1/EM1C

UPLAND

Feet
0 200 400

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6G

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

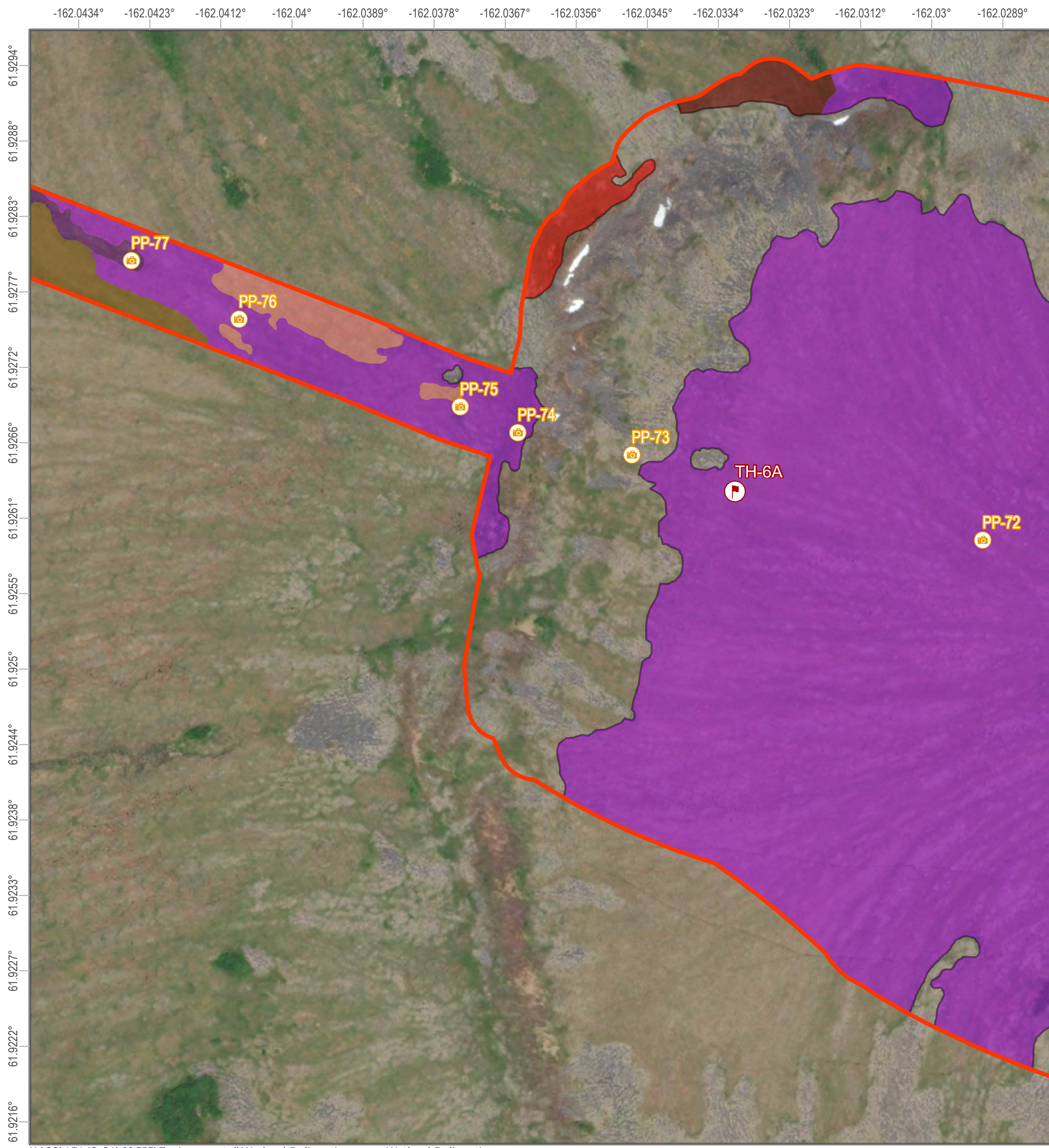


Photo Point
Test Hole
Study Area

Cowardin

PEM1/SS1B
PEM1B
PEM1C
PSS1/EM1B
PSS1/EM1C
PSS1B
UPLAND

Feet
0 200 400

Aerial Year: 2016

Marshall Study Area
Wetland Delineation

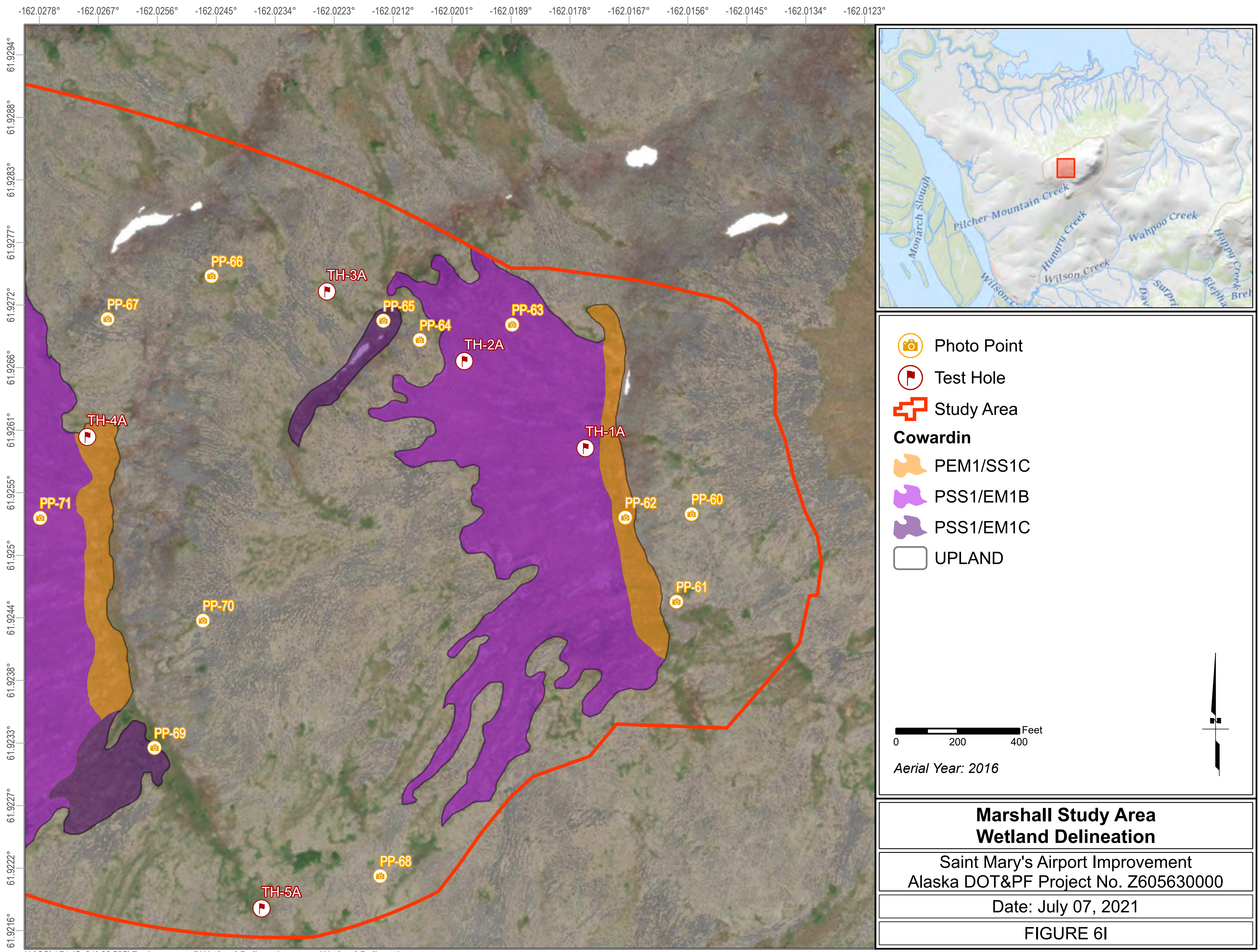
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6H

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar



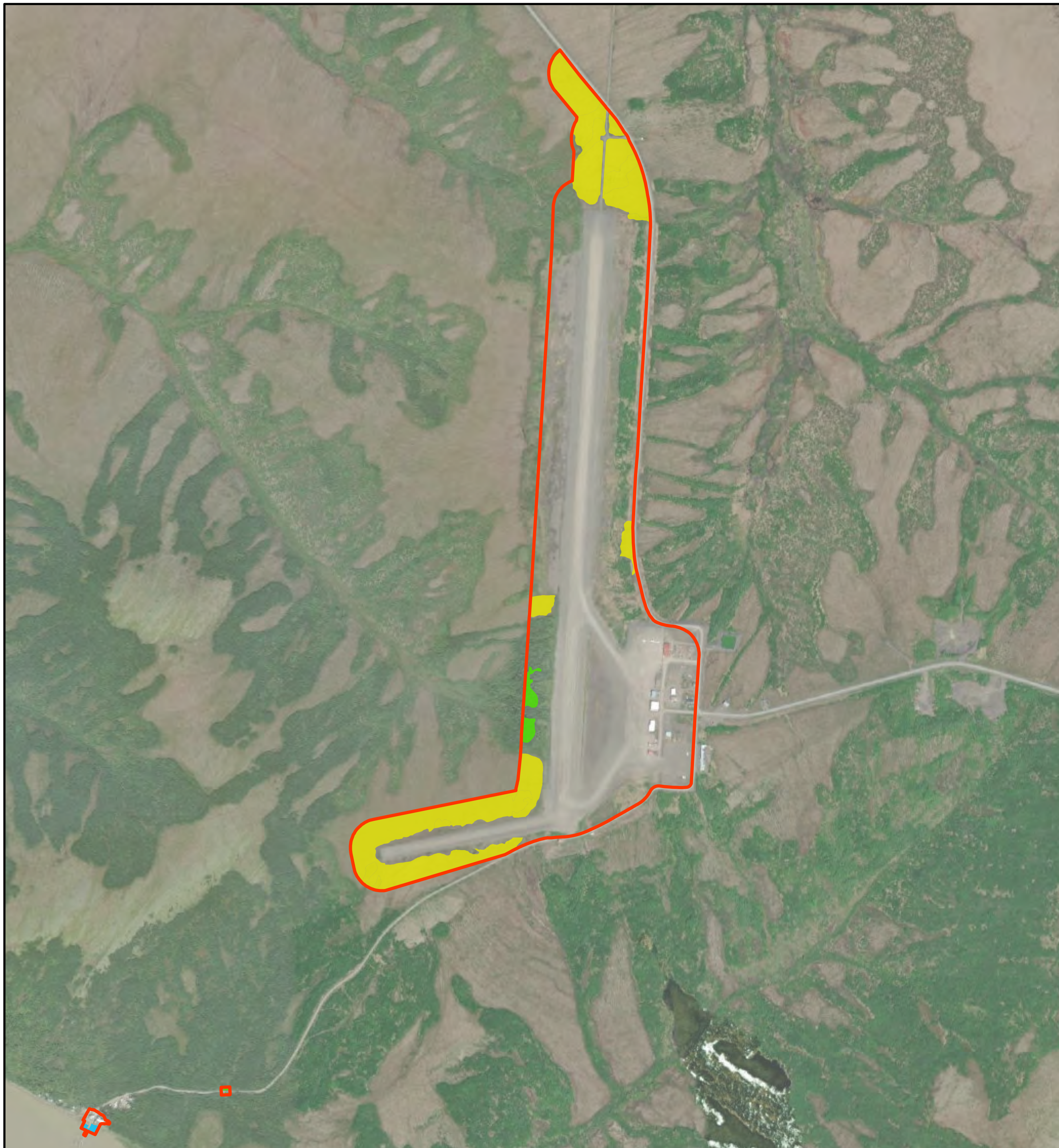
Marshall Study Area
Wetland Delineation

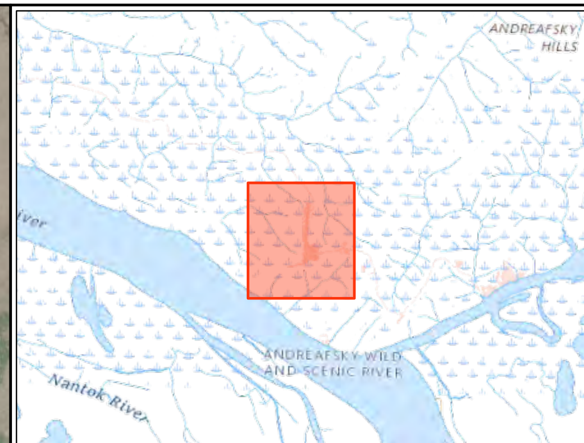
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 07, 2021

FIGURE 6I

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Wetland Delineation
Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar





Study Area

Functional Assessment

Flat

Riverine

Slope

Feet
0 850 1,700

Airport Study Area Functional Assessment

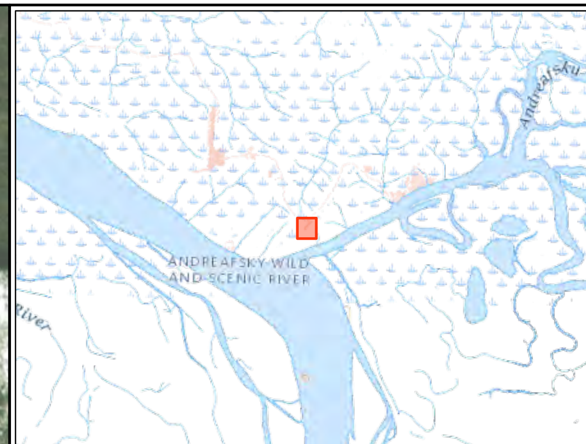
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 02, 2021

FIGURE 7A

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Functional Assessment

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar



Study Area

Functional Assessment

Flat

0 140 280 Feet

Pitkas Point Material Location
Functional Assessment

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 02, 2021

FIGURE 7B

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Functional Assessment
Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar

Study Area

Functional Assessment

Flat

Slope

0 140 280 Feet

Mountain Village Material Site Functional Assessment

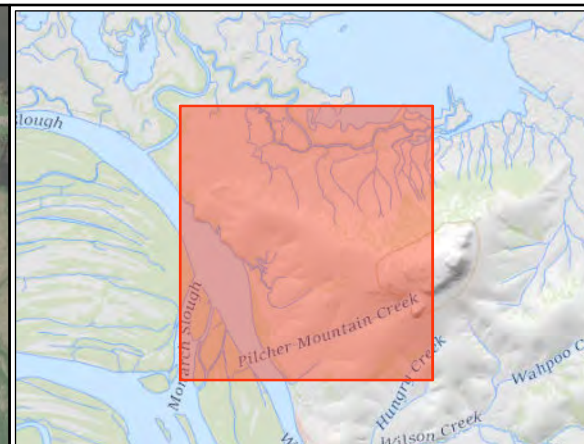
Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 02, 2021

FIGURE 7C

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Functional Assessment

Imagery Layer: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020., Maxar



Study Area

Functional Assessment

Flat

Riverine

Slope

0 2,000 4,000 Feet

Marshall Study Area
Functional Assessment

Saint Mary's Airport Improvement
Alaska DOT&PF Project No. Z605630000

Date: July 02, 2021

FIGURE 7D

K:\23\15143-01\60GIS\Environmental\Wetland Delineation.aprx Functional Assessment

Imagery Layer: Earthstar Geographics, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

APPENDIX B – FIELD DATA

B1: CORPS WETLAND DETERMINATION DATA SHEETS

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/7/21

Applicant/Owner: DOT & PF Sampling Point: TH-1

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): convex Slope (%): 3

Subregion: Western AK Lat: 62.046330 Long: -163.321255 Datum: WGS 84

Soil Map Unit Name: N/A NWI classification: R5UBH

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Dry conditions last 3 months (ATP model) Mounded hillside

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Aln vir	80	Y	FAC
2.			
3.			
4.			
5.			
6.			
Total Cover:	80		
50% of total cover: 40 20% of total cover: 16			
Herb Stratum			
1. Cal can	40	Y	FAC
2. Gym dry	30	Y	FACU
3. Tri eur	5	N	FACU
4. Equ arv	7	N	FAC
5. Cha ang	1	N	FACU
6. Equ syl	2	N	FAC
7.			
8.			
9.			
10.			
Total Cover:	85		
50% of total cover: 42.5 20% of total cover: 17			

Plot size (radius, or length x width) 1/10th acre % Bare Ground 5

% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	—	x 2 = —
FAC species	129	x 3 = 387
FACU species	36	x 4 = 144
UPL species	—	x 5 = —
Column Totals:	165 (A)	531 (B)

Prevalence Index = B/A = 3.22

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Oi	
4-10	10YR 3/2	100					SiL	
10-12	clear ice							Seasonal frost
12-24	10YR 4/3	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: ——

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks: Seasonal frost easy to dig through. Likely perched on clay layer. Clear ice 2" thick.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Well drained, seasonal frost at 10-12"

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/7/21

Applicant/Owner: DOT + PF Sampling Point: TH-2

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): lowland

Local relief (concave, convex, none): none Slope (%): 0-1

Subregion: Western AK Lat: 62.072170 Long: -163.300017 Datum: WGS84

Soil Map Unit Name: n/a NWI classification: PEM1/SS1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks: Dry conditions last 3 months (APT Model)
End of runway

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Bet nan	15	N	FAC
2. Emp nig	20	Y	FAC
3. Vac uli	25	Y	FAC
4. Rho tom	17	Y	FACW
5.			
6.			
Total Cover:	77		
50% of total cover: 38.5 20% of total cover: 15.4			
Herb Stratum			
1. Eri vag	65	Y	FACW
2. Rub cha	15	N	FACW
3. Ped lan	2	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	82		
50% of total cover: 41 20% of total cover: 16.4			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —

% Cover of Wetland Bryophytes 5 (Where applicable) Total Cover of Bryophytes 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	97	x 2 = 194
FAC species	62	x 3 = 186
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	159 (A)	389 (B)

Prevalence Index = B/A = 2.39

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: 15% lichen

SOIL

Sampling Point: TH-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					Oi	
8-17	10YR 3/6	100					Oi	frozen sphagnum/org
17-18	10YR 4/1	100					SiCL	frozen

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Y Histosol or Histel (A1)
- N Histic Epipedon (A2)
- | Hydrogen Sulfide (A4)
- | Thick Dark Surface (A12)
- | Alaska Gleyed (A13)
- | Alaska Redox (A14)
- V Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- | Alaska Alpine Swales (TA5)
- V Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 8"

Hydric Soil Present? Yes X No ____

Remarks:
AA(+) in all layers
Permafrost at 8"-17", restrictive clay layer @ 17" frozen

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- | Sediment Deposits (B2)
- | Drift Deposits (B3)
- | Algal Mat or Crust (B4)
- | Iron Deposits (B5)
- V Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- | Sparsely Vegetated Concave Surface (B8)
- | Marl Deposits (B15)
- V Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2)
- N Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- | Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)
- Y Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- | Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Moderate tussocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/7/21
Applicant/Owner: DOT & PF Sampling Point: TH-3
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): hummocks
Local relief (concave, convex, none): concave Slope (%): 1
Subregion: Western AK Lat: 62.073205 Long: -163.301214 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: PEM1/SS1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Dry conditions last 3 months CATP Model)

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Sal pul	30	Y	FACW
2. Emp nig	50	Y	FAC
3. Vac uli	10	N	FAC
4.			
5.			
6.			
Total Cover:	90		
50% of total cover: 45 20% of total cover: 18			
Herb Stratum			
1. Ang luc	5	N	FACU
2. Car big	25	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	30		
50% of total cover: 15 20% of total cover: 6			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	30	x 2 = 60
FAC species	85	x 3 = 255
FACU species	5	x 4 = 20
UPL species	—	x 5 =
Column Totals:	120 (A)	335 (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: 10% lichen

SOIL

Sampling Point: TH-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					Oi	
3-24	10YR 5/3	70	10YR 4/6	30	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [V] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [V] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

AA(-) in all layers
2% cobbles at 20"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [V] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [V] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [V] Oxidized Rhizospheres along Living Roots (C3)
- [N] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [V] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Large hummocks, water seep on one side of pit at bottom of organic that was compressed not saturation

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/7/21
Applicant/Owner: DOT&PF Sampling Point: TH-4
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside
Local relief (concave, convex, none): concave Slope (%): 1-2
Subregion: Western AK Lat: 62.071420 Long: -163.301247 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: unusually dry period

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Sal pul	40	Y	FACW
2.			
3.			
4.			
5.			
6.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum			
1. Equ syl	2	N	FAC
2. Pet fri	5	N	FACW
3. Equ arv	30	Y	FAC
4. Val cap	15	N	FAC
5. Pyr gra	20	Y	FAC
6. Cha ang	5	N	FACU
7. Tar off	T	N	FACU
8. Tri eur	3	N	FACU
9. Ran rep	15	N	FAC
10. Str amp	5	N	FACU
Total Cover:	100		
50% of total cover: 50 20% of total cover: 20			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	45	x 2 = 135
FAC species	82	x 3 = 246
FACU species	10	x 4 = 40
UPL species	—	x 5 = —
Column Totals:	137 (A)	421 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					Oi	
2-24	7.5YR 3/1	90	5YR 4/6	10	C	PL	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [N] Alaska Redox (A14) *
- [N] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: —
Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:
AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Well drained

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/7/21
Applicant/Owner: DOT&PF Sampling Point: TH-5
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): hilltop
Local relief (concave, convex, none): concave Slope (%): 0-1
Subregion: Western AK Lat: 62.068205 Long: -163.302832 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: PEM1/SS1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes X No ~~X~~		

Remarks: Unusually dry period

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___	20% of total cover: ___		
Sapling/Shrub Stratum			
1. Sal pul	5	Y	FACW
2. Sal bar	2	Y	FAC
3.			
4.			
5.			
6.			
Total Cover:	7		
50% of total cover: 3.5	20% of total cover: 1.4		
Herb Stratum			
1. Cal can	92	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	0		
50% of total cover: ___	20% of total cover: ___		

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	x 1 = —
FACW species 5	x 2 = 10
FAC species 94	x 3 = 282
FACU species —	x 4 = —
UPL species —	x 5 = —
Column Totals: 99 (A)	292 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:
- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Cal can dominant area, possibly overburden from original airstrip construction

SOIL

Sampling Point: TH-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Oi	
4-24	10YR 4/2	100					SiCL	Very cobbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- * Dry-Season Water Table (C2)
- N Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3)
- N Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 22
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 22

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water seeping in at 22"

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/7/21
Applicant/Owner: DOT&PF Sampling Point: TH-6
Investigator(s): JRG, SRG Landform (hillside, terrace, hummocks, etc.): hilltop
Local relief (concave, convex, none): none Slope (%): 0-1
Subregion: Western AK Lat: 62.060389 Long: -163.302603 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Bet nan	15	Y	FAC
2. Vac uli	10	Y	FAC
3. Emp nig	20	Y	FAC
4.			
5.			
6.			
Total Cover:	45		
50% of total cover: 22.5 20% of total cover: 9			
Herb Stratum			
1. Eri vag	25	Y	FACW
2. Car big	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	45		
50% of total cover: 22.5 20% of total cover: 9			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes 15 (Where applicable) Total Cover of Bryophytes 15

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	25	x 2 = 50
FAC species	65	x 3 = 195
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	90 (A)	245 (B)

Prevalence Index = B/A = 2.72

Hydrophytic Vegetation Indicators:
- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: TH-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	5YR 3/4	50					Oi	> same layer
	5YR 2.5/2	50					Oi	
10-18	10YR 2/1	40					SiCL	> 2nd matrix
	10YR 3/6	60						
18-22	10YR 5/1	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [Y] Histic Epipedon (A2)
- [N] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [✓] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [✓] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 10

Hydric Soil Present? Yes X No ____

Remarks:
AA (-) in all layers
Permafrost perching saturation
in organic layer

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [N] High Water Table (A2)
- [Y] Saturation (A3)
- [N] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [✓] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [✓] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [✓] Geomorphic Position (D2)
- [Y] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 2

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Moderate tussocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/8/21

Applicant/Owner: DOT&PF Sampling Point: TH-7

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hummocks

Local relief (concave, convex, none): none Slope (%): 1-2

Subregion: Western AK Lat: 62.104696 Long: -163.685177 Datum: WGS84

Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present? Yes X No ___		
Wetland Hydrology Present? Yes X No ___		

Remarks: Dry conditions last 3 months, light recent rain

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Bet nan	35	Y	FAC
2. Rho tom	15	Y	FACW
3. Vac uli	10	N	FAC
4. Vac vit	15	Y	FAC
5. Sal pul	3	N	FACW
6.			
Total Cover:	78		
50% of total cover: 39 20% of total cover: 15.6			
Herb Stratum			
1. Car big	25	Y	FAC
2. Eri vag	55	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	80		
50% of total cover: 40 20% of total cover: 16			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —

% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	73	x 2 = 219
FAC species	85	x 3 = 255
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	158 (A)	474 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Lichen 5%, Low Shrub Tundra

SOIL

Sampling Point: TH-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Oi	
8-12	10YR 2/2	100					SiCL	AA(+), B horizon
12-14	10YR 5/1	90	10YR 4/6	10	C	PL	SiCL	AA(+), E horizon

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- ✓ Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- ✓ Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- Y Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 8

Hydric Soil Present? Yes X No ____

Remarks:
AA (+) in mineral layers
Black histic

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- ✓ Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- Y Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
wetland hydrology present with 2ndary indicators

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/8/21

Applicant/Owner: DOT&PF Sampling Point: TH-8

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hummocks

Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion: Western AK Lat: 62.102553 Long: -163.684668 Datum: WGS 84

Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Dry period last 3 months, recent small rain event

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Sal pul	40	Y	FACW
2.			
3.			
4.			
5.			
6.			
Total Cover:	40		
50% of total cover: 20 20% of total cover: 8			
Herb Stratum			
1. Cal can	65	Y	FAC
2. Mat str	20	Y	FACW
3. Equ syl	5	N	FAC
4. Cha ang	3	N	FACU
5. Str amp	T	N	FACU
6.			
7.			
8.			
9.			
10.			
Total Cover:	93		
50% of total cover: 46.5 20% of total cover: 18.6			

Plot size (radius, or length x width) 1/10th acre % Bare Ground 10

% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	60	x 2 = 120
FAC species	70	x 3 = 210
FACU species	3	x 4 = 12
UPL species	—	x 5 = —
Column Totals:	133 (A)	342 (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: OWS vegetation community

SOIL

Sampling Point: TH-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					Oi	
8-14	10YR 3/2	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [V] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [V] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: permafrost
Depth (inches): 8

Hydric Soil Present? Yes ____ No X

Remarks:
AA(-) in all layers
Refusal at 14" from permafrost

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [V] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [V] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [Y] Oxidized Rhizospheres along Living Roots (C3)
- [N] Presence of Reduced Iron (C4)
- [N] Salt Deposits (C5)
- [N] Stunted or Stressed Plants (D1)
- [N] Geomorphic Position (D2)
- [Y] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
wetland hydrology present with 2ndary indicators
Dry soil pit

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/8/21
Applicant/Owner: DOT&PF Sampling Point: TH-9
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): hilltop
Local relief (concave, convex, none): none Slope (%): 0-1
Subregion: Western AK Lat: 62.036780 Long: -163.246914 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: PSS1/EM1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____		**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present? Yes X No ____		
Wetland Hydrology Present? Yes X No ____		

Remarks: Dry period last 3 months, recent light rain

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Emp nig	15	Y	FAC
2. Bet nan	10	N	FAC
3. Sal pul	5	N	FACW
4. Rho tom	20	Y	FACW
5. Vac uli	17	Y	FAC
6. Vac vit	13	N	FAC
Total Cover:	80		
50% of total cover: 40 20% of total cover: 16			
Herb Stratum			
1. Rub cha	2	N	FACW
2. Car big	45	Y	FAC
3. Eri vag	35	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	82		
50% of total cover: 41 20% of total cover: 16.4			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	62	x 2 = 124
FAC species	100	x 3 = 300
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	162 (A)	424 (B)

Prevalence Index = B/A = 2.62

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Oi	
10-14	7.5YR 2.5/2	100					Oe	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- ✓ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- ✓ Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- Y Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 8

Hydric Soil Present? Yes X No ____

Remarks:
AA(-) in all layers
Frozen organics
* Black histic hydric soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- ✓ Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- N Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Mod tussocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/8/21

Applicant/Owner: DOT & PF Sampling Point: TH-10

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): hilltop

Local relief (concave, convex, none): none Slope (%): 0-1

Subregion: Western AK Lat: 62.039535 Long: -163.240453 Datum: WGS 84

Soil Map Unit Name: N/A NWI classification: PSS1/EM1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks: Dry period last 3 months, recent small rain event

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Aln inc	5	Y	FAC
2.			
3.			
4.			
Total Cover:	5		
50% of total cover: 2.5	20% of total cover: 1.0		
Sapling/Shrub Stratum			
1. Aln inc	25	Y	FAC
2. Sal pul	45	Y	FACW
3.			
4.			
5.			
6.			
Total Cover:	70		
50% of total cover: 35	20% of total cover: 14		
Herb Stratum			
1. Cal can	75	Y	FAC
2. Tri eur	5	N	FACU
3. Equ arv	2	N	FAC
4. Cha ang	3	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	85		
50% of total cover: 42.5	20% of total cover: 17		

Plot size (radius, or length x width) 1/10th acre % Bare Ground —

% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	45	x 2 = 90
FAC species	152	x 3 = 456
FACU species	8	x 4 = 32
UPL species	—	x 5 = —
Column Totals:	205 (A)	578 (B)

Prevalence Index = B/A = 2.82

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: TH-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/2	100					Oi	
4-12	10YR 3/2	100					SiCL	~~very~~ gravelly
12-20	10YR 3/2	100					SiL	Very gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- V Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- V Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

AA(-) in all layers
Rock refusal at 20"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- V Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- V Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- V Oxidized Rhizospheres along Living Roots (C3)
- N Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- V Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Well drained soils

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/8/21
Applicant/Owner: DOT&PF Sampling Point: TH-11
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside
Local relief (concave, convex, none): Concave Slope (%): 2-3
Subregion: Western AK Lat: 62.052995 Long: -163.306357 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: PEM1/SS1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___	Is the Sampled Area within a Wetland?	Yes X No ___
Hydric Soil Present? Yes X No ___		
Wetland Hydrology Present? Yes X No ___		

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Aln vir	10	N	FAC
2. Bet nan	30	Y	FAC
3. Rho tom	15	N	FACW
4. Vac uli	20	N	FAC
5. Emp nig	25	Y	FAC
6.			
Total Cover:	100		
50% of total cover: 50 20% of total cover: 20			
Herb Stratum			
1. Eri vag	40	Y	FACW
2. Rub cha	5	N	FACW
3. Car big	20	Y	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	65		
50% of total cover: 32.5 20% of total cover: 13			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	60	x 2 = 120
FAC species	105	x 3 = 315
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	165 (A)	435 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: TH-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Oi	
8-12	7.5YR 2.5/1	100					Oe	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [Y] Histic Epipedon (A2)
- [N] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 8

Hydric Soil Present? Yes X No ____

Remarks:
Water pooling in bottom of pit

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [Y] High Water Table (A2)
- [Y] Saturation (A3)
- [N] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [Y] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes X No ____ Depth (inches): 10
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 10

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Mod tussocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/8/21
Applicant/Owner: DOT&PF Sampling Point: TH-12
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Terrace
Local relief (concave, convex, none): none Slope (%): 1-2
Subregion: Western AK Lat: 62,056103 Long: -163,303140 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks: Dry period last 3 months, recent light rain

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		

50% of total cover: ____ 20% of total cover: ____

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Sal pul	55	Y	FACU
2. Aln inc	25	Y	FAC
3. Pop bal	10	N	FACU
4. Sal ric	5	N	FACW
5.			
6.			
Total Cover:	~~?~~95		

50% of total cover: 47.5 20% of total cover: 19

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Equ arv	25	Y	FAC
2. Cal can	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	~~?~~35		

50% of total cover: 17.5 20% of total cover: 7
Plot size (radius, or length x width) 1/10th acre % Bare Ground 15
% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	60	x 2 = 120
FAC species	60	x 3 = 180
FACU species	10	x 4 = 40
UPL species	—	x 5 = —
Column Totals:	130 (A)	340 (B)

Prevalence Index = B/A = 2.62

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2/2	100					Oi	
1-4	10YR 4/3	70	10YR 3/2	30	C	M	SiCL	
4-24	10YR 5/3	100					SiCL	Cobbles

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Well drained

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21
Applicant/Owner: DOT&PF Sampling Point: TH-13
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Toeslope
Local relief (concave, convex, none): none Slope (%): 0-1
Subregion: Western AK Lat: 62.070225 Long: -163.297568 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: PSS1/EM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes X No ___		

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. ———			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Sal pul	60	Y	FACW
2.			
3.			
4.			
5.			
6.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Herb Stratum			
1. Equ arv	10	N	FAC
2. Cal can	25	Y	FAC
3. Tri eur	5	N	FACU
4. Ran rep	3	N	FAC
5. Vio pal	15	Y	FACW
6. Cha ang	10	N	FACU
7.			
8.			
9.			
10.			
Total Cover:	68		
50% of total cover: 34 20% of total cover: 13.6			

Plot size (radius, or length x width) 1/10th acre % Bare Ground 5%
% Cover of Wetland Bryophytes — Total Cover of Bryophytes 10%
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	75	x 2 = 150
FAC species	38	x 3 = 114
FACU species	15	x 4 = 60
UPL species	—	x 5 = —
Column Totals:	128 (A)	324 (B)

Prevalence Index = B/A = 2.53

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Lycopodium dendroidium 10%

SOIL

Sampling Point: TH-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Oe	
10-14	10YR 3/3	100					SiL	A horizon
14-22	10YR 5/1	80	10YR 3/6	20	C	M	SiL	
22-24	10YR 4/2	60	10YR 4/6	40	C	M	SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [N] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [N] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: —
Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:
Seasonal frost 8-14"
AA (-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [N] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [N] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [N] Stunted or Stressed Plants (D1)
- [Y] Geomorphic Position (D2)
- [N] Shallow Aquitard (D3)
- [N] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Toeslope

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21

Applicant/Owner: DOT+PF Sampling Point: TH-14

Investigator(s): JRG, SPS Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): none Slope (%): 2-3

Subregion: Western AK Lat: 62.068498 Long: -163.297881 Datum: WGS84

Soil Map Unit Name: N/A NWI classification: PSS1/EM1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____	Is the Sampled Area within a Wetland?	Yes ____ No X
Hydric Soil Present? Yes ____ No X		
Wetland Hydrology Present? Yes ____ No X		

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Pop bal	5	N	FACU
2. Sal ala	30	Y	FAC
3. Sal pul	10	Y	FACW
4.			
5.			
6.			
Total Cover:	45		
50% of total cover: 22.5 20% of total cover: 9			
Herb Stratum			
1. Ang luc	5	N	FACU
2. Tar off	10	N	FACU
3. Cal can	60	Y	FAC
4. Equ arv	30	Y	FAC
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	105		
50% of total cover: 52.5 20% of total cover: 21			

Plot size (radius, or length x width) 1/10th acre % Bare Ground ——

% Cover of Wetland Bryophytes —— (Where applicable) Total Cover of Bryophytes ——

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	10	x 2 = 20
FAC species	120	x 3 = 360
FACU species	20	x 4 = 80
UPL species	—	x 5 = —
Column Totals:	150 (A)	460 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					Oi	
3-14	10YR 4/2	100					SiL	
14-24	10YR 4/2	100					SiL	Very gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: —
Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:
AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No Y Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No Y Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
well drained

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21

Applicant/Owner: DOT&PF Sampling Point: TH-15

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside

Local relief (concave, convex, none): none Slope (%): 1-3

Subregion: Western AK Lat: 62.066334 Long: -163.298201 Datum: WGS84

Soil Map Unit Name: N/A NWI classification: PSS1/EM1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X		

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Sal ala	5	Y	FAC
2. Pop bal	15	Y	FACU
3.			
4.			
Total Cover:	20		
50% of total cover: 10	20% of total cover: 4		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Sal ala	60	Y	FAC
2. Sal pul	5	N	FACW
3.			
4.			
5.			
6.			
Total Cover:	65		
50% of total cover: 32.5	20% of total cover: 13		

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Equ pra	40	Y	FACW
2. Cal can	15	Y	FAC
3. Vio pal	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	60		
50% of total cover: 30	20% of total cover: 12		

Plot size (radius, or length x width) 1/10th acre % Bare Ground 5

% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	50	x 2 = 100
FAC species	80	x 3 = 240
FACU species	15	x 4 = 60
UPL species	—	x 5 = —
Column Totals:	145 (A)	400 (B)

Prevalence Index = B/A = 2.76

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: TH-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Oi	
4-18	10YR 4/2	80	10YR 5/1	20	D	M	SiL	
18-24	10YR 5/3	90	10YR 5/4	10	C	M	SiL	Very cobbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ______

Water Table Present? Yes ____ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ______

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Well drained

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21
Applicant/Owner: DOT&PF Sampling Point: TH-16
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside
Local relief (concave, convex, none): Convex Slope (%): 1-3
Subregion: Western AK Lat: 62.063462 Long: -163.298967 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: PSS1/EM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Pop bal	30	Y	FACU
2. Sal pul	45	Y	FACW
3. Emp nig	25	Y	FAC
4. Aln inc	10	N	FAC
5.			
6.			
Total Cover:	110		
50% of total cover: 55 20% of total cover: 22			
Herb Stratum			
1. Cal can	20	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	20		
50% of total cover: ___ 20% of total cover: ___			

Plot size (radius, or length x width) 1/10th acre % Bare Ground 15
% Cover of Wetland Bryophytes — Total Cover of Bryophytes 10
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	x 1 = —
FACW species 45	x 2 = 135
FAC species 55	x 3 = 165
FACU species 30	x 4 = 120
UPL species —	x 5 = —
Column Totals: 130 (A)	420 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Lichen 5%

SOIL

Sampling Point: TH-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Oi	
2-8	10YR 4/2	100					SiL	
8-10	Rock - C horizon							Very gravelly
10-20	10YR 4/4	100					SiL	Very cobbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [✓] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [✓] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: ——

Depth (inches): ——

Hydric Soil Present? Yes ____ No X

Remarks:

Rock refusal

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [✓] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [✓] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [✓] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Well drained

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21
Applicant/Owner: DOT&PF Sampling Point: TH-17
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside
Local relief (concave, convex, none): none Slope (%): 1-3
Subregion: Western AK Lat: 62.061961 Long: -163.297688 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: PSS1/EM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		
Hydric Soil Present? Yes X No ___	Is the Sampled Area within a Wetland?	Yes X No ___
Wetland Hydrology Present? Yes X No ___		

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		

50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Emp nig	20	Y	FAC
2. Vac uli	10	Y	FAC
3. Bet nan	5	N	FAC
4. Rho tom	15	Y	FACW
5.			
6.			
Total Cover:	50		

50% of total cover: 25 20% of total cover: 10

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Eri vag	50	Y	FACW
2. Car big	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	70		

50% of total cover: 35 20% of total cover: 14

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes 5 (Where applicable) Total Cover of Bryophytes 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	65	x 2 = 130
FAC species	55	x 3 = 165
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	120 (A)	295 (B)

Prevalence Index = B/A = 2.46

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: lichen 5%

SOIL

Sampling Point: TH-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Oi	
10-12	10YR 6/1	100					SiCL	AA(+), A horizon
10-16	7.5YR 2.5/3	100					SiCL	AA(+), B horizon

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [Y] Histic Epipedon (A2)
- [N] Hydrogen Sulfide (A4)
- [|] Thick Dark Surface (A12)
- [|] Alaska Gleyed (A13)
- [|] Alaska Redox (A14)
- [✓] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [|] Alaska Alpine Swales (TA5)
- [✓] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 10

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [N] High Water Table (A2)
- [Y] Saturation (A3)
- [N] Water Marks (B1)
- [|] Sediment Deposits (B2)
- [|] Drift Deposits (B3)
- [|] Algal Mat or Crust (B4)
- [|] Iron Deposits (B5)
- [✓] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [|] Sparsely Vegetated Concave Surface (B8)
- [|] Marl Deposits (B15)
- [|] Hydrogen Sulfide Odor (C1)
- [|] Dry-Season Water Table (C2)
- [✓] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [|] Drainage Patterns (B10)
- [✓] Oxidized Rhizospheres along Living Roots (C3)
- [✓] Presence of Reduced Iron (C4)
- [N] Salt Deposits (C5)
- [|] Stunted or Stressed Plants (D1)
- [✓] Geomorphic Position (D2)
- [Y] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ________
Water Table Present? Yes ____ No X Depth (inches): ________
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 3

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Moderate tussocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21
Applicant/Owner: DOT&PF Sampling Point: TH-18
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Depression
Local relief (concave, convex, none): concave Slope (%): 0-1
Subregion: Western AK Lat: 62.061450 Long: -163.299207 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: PSS1 | EM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ~~X~~ No ~~X~~	

Remarks: Dry period 3 months prior to delineation

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Sal pul	25	Y	FACW
2. Pop bal	10	Y	FACU
3.			
4.			
5.			
6.			
Total Cover:	35		
50% of total cover: 17.5 20% of total cover: 7			
Herb Stratum			
1. Cal can	70	Y	FAC
2. Cha ang	5	N	FAC
3. Pet fri	3	N	FACW
4. Ach mil	2	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	80		
50% of total cover: 40 20% of total cover: 16			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	—	x 1 = —
FACW species	28	x 2 = 56
FAC species	77	x 3 = 231
FACU species	10	x 4 = 40
UPL species	—	x 5 = —
Column Totals:	115 (A)	326 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: TH-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Oi	
6-16	10YR 4/3	90	7.5YR 4/6	10	C	PL	SiCL	roots in mineral layer
16-20	10YR 5/1	100					SiCL	
20-24	10YR 4/3	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [V] Alaska Gleyed (A13)
- [N] Alaska Redox (A14)
- [N] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [V] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [N] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [V] Hydrogen Sulfide Odor (C1)
- [Y] Dry-Season Water Table (C2)
- [N] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [N] Drainage Patterns (B10)
- [Y] Oxidized Rhizospheres along Living Roots (C3)
- [N] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [V] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes X No ____ Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 16

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

water seeping into pit at 16"

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21
Applicant/Owner: DOT&PF Sampling Point: TH-19
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): drainage
Local relief (concave, convex, none): concave Slope (%): 1-3
Subregion: Western AK Lat: 62.060185 Long: -163.296708 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: PSS1/EM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present? Yes ___ No X		
Wetland Hydrology Present? Yes X No ___		

Remarks: Dry period last 3 months
End of drainage swale, near culvert

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Sal pul	25	Y	FACW
2. Sal ala	30	Y	FAC
3.			
4.			
5.			
6.			
Total Cover:	55		
50% of total cover: 27.5 20% of total cover: 11			
Herb Stratum			
1. Pyr asa	20	Y	FACU
2. Equ pra	25	Y	FACW
3. Cal can	5	N	FAC
4. Ach mill	10	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	60		
50% of total cover: 30 20% of total cover: 12			

Plot size (radius, or length x width) 20'x40' % Bare Ground 10
% Cover of Wetland Bryophytes ___ Total Cover of Bryophytes ___
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	50	x 2 = 100
FAC species	45	x 3 = 135
FACU species	20	x 4 = 80
UPL species	—	x 5 = —
Column Totals:	115 (A)	315 (B)

Prevalence Index = B/A = 2.73

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

US Army Corps of Engineers Alaska Version 2.0

SOIL

Sampling Point: TH-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					Oi	
3-10	2.5Y 4/1	100					SiL	very gravelly
10-24	10YR 4/2	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Y Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Y Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: ——

Depth (inches): ——

Hydric Soil Present? Yes ___ No X

Remarks:

AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Y Sediment Deposits (B2)
- Y Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Y Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Y Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Y Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)
- N Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2)
- N Shallow Aquitard (D3)
- N Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Leaf debris drifted against vegetation stems, drainage patterns in dried veg can vegetation + b/t leaves

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: St. Mary's Borough/City: St. Mary's Sampling Date: 6/9/21

Applicant/Owner: DOT + PF Sampling Point: TH-20

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hummocks

Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion: Western AK Lat: 62.054304 Long: -163.298790 Datum: WGS 84

Soil Map Unit Name: N/A NWI classification: PEM1/SS1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N , Soil N , or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover:		20% of total cover:	

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Bet Nan	70	Y	FAC
2. Aln Vir	20	N	FAC
3. Vac Uli	15	N	FAC
4. EMP Nig	10	N	FAC
5. Arc Uva	5	N	UP
6.			
Total Cover:	120		
50% of total cover:	60	20% of total cover:	24

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Eri Vag	5	N	FACW
2. Ach Mill	10	N	FAC
3. Cal can	15	Y	FAC
4. Cha Ang	2	N	FACU
5. Rho Tom	10	N	FACW
6. Car Big	15	Y	FAC
7.			
8.			
9.			
10.			
Total Cover:	57		
50% of total cover:	28.5	20% of total cover:	11.4

Plot size (radius, or length x width) 1/10 acre % Bare Ground —

% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	15	x 2 = 30
FAC species	155	x 3 = 465
FACU species	2	x 4 = 8
UPL species	5	x 5 = 25
Column Totals:	170 (A)	528 (B)

Prevalence Index = B/A = 2.98

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: 5% lichen

SOIL

Sampling Point: TH-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Oi	
6-11	7.5YR 2.5/2	100					Oe	Seasonal frost
11-15	7.5YR 2.5/3	100					Oi	
15-22	10YR 5/1	60	10YR 3/2	40	C	M	SiCl	
22-25	10YR 2/2	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:
- N Histosol or Histel (A1)
- N Histic Epipedon (A2)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:
- N Alaska Color Change (TA4)[4]
- ↓ Alaska Alpine Swales (TA5)
- ↓ Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: —
Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:
A-A (negative) all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)
- N Surface Water (A1)
- ↓ High Water Table (A2)
- ↓ Saturation (A3)
- ↓ Water Marks (B1)
- ↓ Sediment Deposits (B2)
- ↓ Drift Deposits (B3)
- ↓ Algal Mat or Crust (B4)
- ↓ Iron Deposits (B5)
- ↓ Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- ↓ Sparsely Vegetated Concave Surface (B8)
- ↓ Marl Deposits (B15)
- ↓ Hydrogen Sulfide Odor (C1)
- ↓ Dry-Season Water Table (C2)
- ↓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)
- N Water-stained Leaves (B9)
- ↓ Drainage Patterns (B10)
- ↓ Oxidized Rhizospheres along Living Roots (C3)
- ↓ Presence of Reduced Iron (C4)
- ↓ Salt Deposits (C5)
- ↓ Stunted or Stressed Plants (D1)
- ↓ Geomorphic Position (D2)
- ↓ Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- N FAC-Neutral Test (D5)

Field Observations:
Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Mod hummocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/10/21
Applicant/Owner: Marshall Sampling Point: TH-1A
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): concave Slope (%): 0-3
Subregion: Western AK Lat: 61.925954 Long: -162.017485 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____
Is the Sampled Area within a Wetland?	Yes X	No ____

Remarks: Dry period last 3 months, high point between surface water drainage patterns

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		

50% of total cover: ____ 20% of total cover: ____

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Rho tom	10	N	FACW
2. Bet nan	30	Y	FAC
3. Sal pul	15	N	FACW
4. Emp nig	20	Y	FAC
5. Vac uli	5	N	FAC
6.			
Total Cover:	80		

50% of total cover: 40 20% of total cover: 16

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Car aqu	40	Y	OBL
2. Eri vag	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	50		

50% of total cover: 25 20% of total cover: 10

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	40	x 1 = 40
FACW species	35	x 2 = 70
FAC species	55	x 3 = 165
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	130 (A)	275 (B)

Prevalence Index = B/A = 2.12

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: 10% lichen

SOIL

Sampling Point: TH-1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					O	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Y Histic Epipedon (A2)
- N Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 10

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- V Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- V Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3)
- N/A Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- V Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes X No ____ Depth (inches): 5
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 2

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Large hummocks

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/10/21
Applicant/Owner: Marshall Sampling Point: TH-2A
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): none Slope (%): 1-3
Subregion: Western AK Lat: 61.926726 Long: -162.019768 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Dry period last 3 months, bottom of wetland polygon before hillside

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Sal pul	25	Y	FACW
2. Vac uli	10	N	FAC
3. Bet nan	5	N	FAC
4. Vac vit	15	Y	FAC
5. Rho tom	7	N	FACW
6. Emp nig	3	N	FAC
Total Cover:	65		
50% of total cover: 32.5 20% of total cover: 13			
Herb Stratum			
1. Eri vag	10	N	FACW
2. Car aqu	40	Y	OBL
3. Eri ang (woolly louse)	20	Y	OBL
4. Ped lan	2	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	72		
50% of total cover: 36 20% of total cover: 14.4			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes 5 (Where applicable) Total Cover of Bryophytes 5

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	60	x 1 = 60
FACW species	42	x 2 = 84
FAC species	35	x 3 = 105
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	137 (A)	249 (B)

Prevalence Index = B/A = 1.82

Hydrophytic Vegetation Indicators:
- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Oi	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2)
- N Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Y Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Y Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 10

Hydric Soil Present? Yes X No ____

Remarks:
Some sphagnum in soil plug

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Y Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Y Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Y Oxidized Rhizospheres along Living Roots (C3)
- NP Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 2

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Mod hummocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/10/21
Applicant/Owner: Marshall Sampling Point: TH-3A
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): none Slope (%): 1-3
Subregion: Western AK Lat: 61.927344 Long: -162.022358 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____	Is the Sampled Area within a Wetland?	Yes ____ No X
Hydric Soil Present? Yes ____ No X		
Wetland Hydrology Present? Yes ____ No X		

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Arc alp	10	N	UPL
2. Sal pul	15	N	FACW
3. Vac uli	22	Y	FAC
4. Rho tom	20	Y	FACW
5. Bet nan	25	Y	FAC
6.			
Total Cover:	92		
50% of total cover: 46 20% of total cover: 18.4			
Herb Stratum			
1. Car aqu	15	Y	OBL
2. Ped lan	2	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	17		
50% of total cover: 8.5 20% of total cover: 3.4			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	15	x 1 = 15
FACW species	35	x 2 = 70
FAC species	49	x 3 = 147
FACU species	—	x 4 = —
UPL species	10	x 5 = 50
Column Totals:	109 (A)	282 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Lichen 20%

SOIL

Sampling Point: TH-3A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2						O.*	
12-24	10YR 4/4	50					SiL	Flag rocks
	2.5Y 4/1	50					SiL	Ext cobbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Histic Epipedon (A2)
- Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

Thick organic, but no aquic conditions or correct chroma for black histic

Very rocky area

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- N FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Dry pit

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/10/21

Applicant/Owner: Marshall Sampling Point: TH-4A

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Toe slope

Local relief (concave, convex, none): Convex Slope (%): 1-3

Subregion: Western AK Lat: 61.926052 Long: -162.026873 Datum: WGS 84

Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: Dry period last 3 months; high point between 2 drainages

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. ——			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____	20% of total cover: ____		
Sapling/Shrub Stratum			
1. Sal Pul	15	Y	FACW
2. Vac Uli	20	Y	FAC
3. Rho Tom	25	Y	FACW
4. Vac Vit	5	N	FAC
5. EMP Nig	10	N	FAC
6.			
Total Cover:	75		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum			
1. Eri Vag	5	Y	FACW
2. Car Aqu	20	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	25		
50% of total cover: 12.5	20% of total cover: 5		

Plot size (radius, or length x width) 1/10th acre % Bare Ground ——

% Cover of Wetland Bryophytes —— (Where applicable) Total Cover of Bryophytes ——

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	20	x 1 = 20
FACW species	45	x 2 = 90
FAC species	35	x 3 = 105
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	100 (A)	215 (B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Lichen 10%.

SOIL Sampling Point: TH-4A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3							Oi	
3-6	10YR 3/2	100					SiCl	B-Horizon, very gravelly
6-16	N4/	100					SiCl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [✓] Thick Dark Surface (A12)
- [Y] Alaska Gleyed (A13)
- [N] Alaska Redox (A14)
- [N] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [✓] Alaska Redox With 2.5Y Hue
- [Y] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: —
Depth (inches): —

Hydric Soil Present? Yes X No ____

Remarks:
Thixotrophic
Pit kept filling in; could not determine layer beneath; gley assumed or Alaska meets problematic
*A-A positive in mineral layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [N] High Water Table (A2)
- [Y] Saturation (A3)
- [N] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [✓] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [✓] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [✓] Oxidized Rhizospheres along Living Roots (C3)
- [Y] Presence of Reduced Iron (C4)
- [N] Salt Deposits (C5)
- [N] Stunted or Stressed Plants (D1)
- [Y] Geomorphic Position (D2)
- [N] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 3

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Toe slope fed by snow melt from snow drift

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher Ms Borough/City: Marshall Sampling Date: 6/11/21

Applicant/Owner: Marshall Sampling Point: TH-SA

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Toeslope

Local relief (concave, convex, none): concave Slope (%): 1-3

Subregion: West AK Lat: 61.921866 Long: -162.023585 Datum: WGS 84

Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks: Dry period last 3 months, toeslope where snow likely lingers but sloped enough to drain

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Emp nig	25	Y	FAC
2. Vac vit	15	Y	FAC
3. Vac uli	35	Y	FAC
4.			
5.			
6.			
Total Cover:	75		
50% of total cover: 37.5 20% of total cover: 15			
Herb Stratum			
1. Car aqu	30	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	30		
50% of total cover: ___ 20% of total cover: ___			

Plot size (radius, or length x width) 40'x20' % Bare Ground —

% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	30	x 1 = 30
FACW species	—	x 2 = —
FAC species	75	x 3 = 225
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	105 (A)	255 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Lycopodium dendroideum 10%

SOIL

Sampling Point: TH-5A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Oi	
4-12	10YR 3/2	100					SiL	
12-22	10YR 3/3	100					SiL	Very cobbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [N] Histic Epipedon (A2)
- [N] Hydrogen Sulfide (A4)
- [N] Thick Dark Surface (A12)
- [N] Alaska Gleyed (A13)
- [N] Alaska Redox (A14)
- [N] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [N] Alaska Alpine Swales (TA5)
- [N] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks: AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [N] High Water Table (A2)
- [N] Saturation (A3)
- [N] Water Marks (B1)
- [N] Sediment Deposits (B2)
- [N] Drift Deposits (B3)
- [N] Algal Mat or Crust (B4)
- [N] Iron Deposits (B5)
- [N] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [N] Sparsely Vegetated Concave Surface (B8)
- [N] Marl Deposits (B15)
- [N] Hydrogen Sulfide Odor (C1)
- [N] Dry-Season Water Table (C2)
- [N] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [N] Drainage Patterns (B10)
- [N] Oxidized Rhizospheres along Living Roots (C3)
- [N] Presence of Reduced Iron (C4)
- [N] Salt Deposits (C5)
- [N] Stunted or Stressed Plants (D1)
- [Y] Geomorphic Position (D2)
- [N] Shallow Aquitard (D3)
- [N] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Large rocks adjacent to pit covered with thin soil + vegetation
Toeslope

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/11/21

Applicant/Owner: Marshall Sampling Point: TH-6A

Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside

Local relief (concave, convex, none): Convex Slope (%): 1-3

Subregion: Western AK Lat: 61.926312 Long: -162.033072 Datum: WGS84

Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland?	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: Dry period last 3 weeks

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____	20% of total cover: ____		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Bet Nan	10%	N	FAC
2. Vac Uli	15%	Y	FAC
3. Emp Nig	10%	N	FAC
4. Rho Tom	15%	Y	FACW
5. Vac Vit	5%	N	FAC
6.			
Total Cover:	055		
50% of total cover: 27.5	20% of total cover: 11		

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Eri Vag	60%	Y	FACW
2. Car agu	25%	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	085		
50% of total cover: 42.5	20% of total cover: 17		

Plot size (radius, or length x width) 1/10 acre % Bare Ground —

% Cover of Wetland Bryophytes — Total Cover of Bryophytes —
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	25	x 1 = 25
FACW species	75	x 2 = 150
FAC species	40	x 3 = 120
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	140 (A)	295 (B)

Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: 10% lichen

SOIL

Sampling Point: TH-6A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 2.5/1	100					Oi	
8-12	7.5YR 2.5/2	100					Oe	Permafrost @ 8"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Y Histic Epipedon (A2)
- N Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 8"

Hydric Soil Present? Yes X No ____

Remarks:
Permafrost prohibits excavation to mineral soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- Y Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3)
- NA Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 2"

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Moderate Tussocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/11/21
Applicant/Owner: Marshall Sampling Point: TH-7A
Investigator(s): JRG, SPS Landform (hillside, terrace, hummocks, etc.): Bench
Local relief (concave, convex, none): none Slope (%): 0-1
Subregion: Western AK Lat: 61.931725 Long: -162.062345 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Vac uli	10	Y	FAC
2. Vac vit	5	N	FAC
3. Rho tom	20	Y	FACW
4. Bet nan	15	Y	FAC
5.			
6.			
Total Cover:	50		
50% of total cover: 25 20% of total cover: 10			
Herb Stratum			
1. Car aqu	30	Y	OBL
2. Eri vag	50	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	80		
50% of total cover: 40 20% of total cover: 16			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	30	x 1 = 30
FACW species	70	x 2 = 140
FAC species	30	x 3 = 90
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	130 (A)	260 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Tussock tundra

SOIL

Sampling Point: TH-7A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Oi	
6-10	10YR 2/1	100					Oe	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [Y] Histic Epipedon (A2)
- [N] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [N] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 10

Hydric Soil Present? Yes X No ___

Remarks:
AA (-) in bottom layer

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [Y] High Water Table (A2)
- [Y] Saturation (A3)
- [N] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [N] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [N] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [N] Geomorphic Position (D2)
- [Y] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 4

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
large tussocky
water pooling on permafrost

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/11/21
Applicant/Owner: Marshall Sampling Point: TH-8A
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside
Local relief (concave, convex, none): concave Slope (%): 1-3
Subregion: Western AK Lat: 61.936807 Long: -162.083842 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present? Yes X No ___		
Wetland Hydrology Present? Yes X No ___		

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Bet nan	5%	Y	FAC
2. Rho tom	10%	Y	FACW
3. Vac uli	7%	Y	FAC
4. Vac vit	5%	Y	FAC
5.			
6.			
Total Cover:	027		
50% of total cover: 13.5 20% of total cover: 5.4			
Herb Stratum			
1. Car aqu	25%	Y	OBL
2. Eri Vag	60%	Y	FACW
3. Rub Cha	2%	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	087		
50% of total cover: 43.5 20% of total cover: 17.4			

Plot size (radius, or length x width) 1/10th acre % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable) Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	25	x 1 = 25
FACW species	72	x 2 = 144
FAC species	17	x 3 = 51
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	114 (A)	220 (B)

Prevalence Index = B/A = 1.93

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Tussock Tundra
Lichen 10%

SOIL

Sampling Point: TH-8A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100%					Oi	Permafrost @ 10"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Y Histic Epipedon (A2)
- N Hydrogen Sulfide (A4)
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- Alaska Alpine Swales (TA5)
- Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 10"

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3)
- N/A Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes X No ____ Depth (inches): 10"
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 2"

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Large tussocks

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS   Borough/City: Marshall   Sampling Date: 6/11/21
Applicant/Owner: Marshall   Sampling Point: TH-9A
Investigator(s): JRG, SRS   Landform (hillside, terrace, hummocks, etc.): Drainage
Local relief (concave, convex, none): Concave   Slope (%): 0-2
Subregion: Western AK   Lat: 61.942669   Long: -162.119235   Datum: WGS-84
Soil Map Unit Name: N/A   NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed?   Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic?   (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		

50% of total cover: ____ 20% of total cover: ____

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Aln inc	40	Y	FAC
2.			
3.			
4.			
5.			
6.			
Total Cover:	40		

50% of total cover: 20   20% of total cover: 8

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Cal can	60	Y	FAC
2. Equ arv	15	N	FAC
3. Mat str	10	N	FACW
4. Str amp	2	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	87		

50% of total cover: 43.5   20% of total cover: 17.4

Plot size (radius, or length x width) 1/10th acre   % Bare Ground —
% Cover of Wetland Bryophytes — (Where applicable)   Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	10	x 2 = 20
FAC species	115	x 3 = 345
FACU species	2	x 4 = 8
UPL species	—	x 5 = —
Column Totals:	127 (A)	373 (B)

Prevalence Index = B/A = 2.94

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-9A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 2.5/2	100					Oi	
8-12	10YR 2/2	100					SiL	
12-16	10YR 4/3	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [✓] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [✓] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 8

Hydric Soil Present? Yes ____ No X

Remarks:
AA (-) in mineral soil
Does not meet black histic
* upper portion of permafrost soft

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [✓] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [✓] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [✓] Oxidized Rhizospheres along Living Roots (C3)
- [N] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [✓] Stunted or Stressed Plants (D1)
- [Y] Geomorphic Position (D2)
- [Y] Shallow Aquitard (D3)
- [N] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Top of Drainage down side slope

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/11/21

Applicant/Owner: Marshall Sampling Point: TH-10A

Investigator(s): SRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside

Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion: Western AK Lat: 61.942115 Long: -162.127618 Datum: WGS 84

Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Bet nan	15	Y	FAC
2. Rho tom	10	Y	FACW
3. Vac uli	5	N	FAC
4. Vac vit	2	N	FAC
5. Sal pul	5	N	FACW
6. EMP nig	5	N	FAC
Total Cover:	42		
50% of total cover: 21 20% of total cover: 8.4			
Herb Stratum			
1. Car Aqu	15	N	OBL
2. Eri Vag	65	Y	FACW
3. Rub cha	10	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	90		
50% of total cover: 45 20% of total cover: 18			

Plot size (radius, or length x width) 1/10 acre % Bare Ground —

% Cover of Wetland Bryophytes 10% Total Cover of Bryophytes 10%
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	15	x 1 = 15
FACW species	90	x 2 = 180
FAC species	27	x 3 = 81
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	132 (A)	276 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

- [Y] Dominance Test is >50%
- [Y] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-10A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3	100					Oi	
8-10	10YR 3/2	100					Oe	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [Y] Histic Epipedon (A2)
- [N] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: Permafrost

Depth (inches): 8"

Hydric Soil Present? Yes X No ____

Remarks: Permafrost @ 8"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [N] High Water Table (A2)
- [Y] Saturation (A3)
- [N] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [NA] Presence of Reduced Iron (C4)
- [N] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [Y] Shallow Aquitard (D3)
- [Y] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 2

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Large tussocks

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Marshall MS Borough/City: Marshall Sampling Date: 6/12/2021
Applicant/Owner: DOT + PF Sampling Point: TH-11A
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Hillside
Local relief (concave, convex, none): Concave Slope (%): 1-3
Subregion: Western AK Lat: 61.940571 Long: -162.136535 Datum: WGS84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks: Dry conditions last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Bet Nan	20	Y	FAC
2. Vac uli	25	Y	FAC
3. Rho Tom	15	Y	FACW
4. Pic Mar	5	N	FACW
5. Sal pul	2	N	FACW
6. Emp nig	5	N	FAC
Total Cover:	072		
50% of total cover: 36 20% of total cover: 14.4			
Herb Stratum			
1. Eri Vag	22	Y	FACW
2. Car aqu	10	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	032		
50% of total cover: 16 20% of total cover: 6.4			

Plot size (radius, or length x width) 1/10 acre % Bare Ground ——
% Cover of Wetland Bryophytes 5 (Where applicable) Total Cover of Bryophytes 5

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	10	x 1 = 10
FACW species	44	x 2 = 88
FAC species	50	x 3 = 150
FACU species	—	x 4 = —
UPL species	—	x 5 = —
Column Totals:	104 (A)	248 (B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:
- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: 5% lichen

SOIL

Sampling Point: TH-11A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					Oi	
5-12	10YR 3/2	100					Oe	
12-13	10YR 3/2	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- N Histosol or Histel (A1)
- Y Histic Epipedon (A2)
- Y Hydrogen Sulfide (A4)
- N Thick Dark Surface (A12)
- | Alaska Gleyed (A13)
- | Alaska Redox (A14)
- ↓ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change (TA4)[4]
- | Alaska Alpine Swales (TA5)
- ↓ Alaska Redox With 2.5Y Hue
- N Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- N Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: Permafrost
Depth (inches): 12"

Hydric Soil Present? Yes X No ____

Remarks:
Thick organic
Hydrogen sulfide odor during excavation

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- | Sediment Deposits (B2)
- | Drift Deposits (B3)
- | Algal Mat or Crust (B4)
- | Iron Deposits (B5)
- ↓ Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- | Sparsely Vegetated Concave Surface (B8)
- ↓ Marl Deposits (B15)
- Y Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2)
- N Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- | Drainage Patterns (B10)
- ↓ Oxidized Rhizospheres along Living Roots (C3)
- NA Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- | Stunted or Stressed Plants (D1)
- ↓ Geomorphic Position (D2)
- Y Shallow Aquitard (D3)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?	X		10
Saturation Present? (includes capillary fringe)	X		3

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Moderate hummocky/tussocky

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS　Borough/City: Marshall　Sampling Date: 6/12/21
Applicant/Owner: Marshall　Sampling Point: TH-12A
Investigator(s): JRG, SRS　Landform (hillside, terrace, hummocks, etc.): Terrace
Local relief (concave, convex, none): none　Slope (%): 0-1
Subregion: Western AK　Lat: 61.939858　Long: -162.151359　Datum: WGS 84
Soil Map Unit Name: N/A　NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed?　Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic?　(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____ Hydric Soil Present? Yes ____ No X Wetland Hydrology Present? Yes ____ No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Remarks: Dry period last 3 months	

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum			
1. Aln vir	75	Y	FAC
2. Ribes tri	25	Y	FAC
3.			
4.			
5.			
6.			
Total Cover:	100		
50% of total cover: 50 20% of total cover: 20			
Herb Stratum			
1. Tri eur	20	Y	FACU
2. Cal can	30	Y	FAC
3. Equ arv	15	Y	FAC
4. Cha ang	5	N	FAC
5. Mat str	2	N	FACU
6.			
7.			
8.			
9.			
10.			
Total Cover:	72		
50% of total cover: 36 20% of total cover: 14.4			

Plot size (radius, or length x width) 1/10th acre　% Bare Ground 5
% Cover of Wetland Bryophytes — (Where applicable)　Total Cover of Bryophytes —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	2	x 2 = 4
FAC species	150	x 3 = 450
FACU species	20	x 4 = 80
UPL species	—	x 5 = —
Column Totals:	172 (A)	534 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TH-12A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Oi	
4-10	10YR 2/2	100					SiL	
10-15	10YR 4/4	60	7.5YR 3/4	40	C	M	SiL	
15-24	10YR 3/3	70					SiCl	Soil Mottling
	10YR 4/3	15						
	10YR 3/4	15						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [N] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: ——

Depth (inches): ——

Hydric Soil Present? Yes ____ No X

Remarks:

Thin organic

Bright, upland soils

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [N] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [N] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [N] Oxidized Rhizospheres along Living Roots (C3)
- [N] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [N] Geomorphic Position (D2)
- [N] Shallow Aquitard (D3)
- [N] Microtopographic Relief (D4)
- [N] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Well drained

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Pilcher MS Borough/City: Marshall Sampling Date: 6/12/21
Applicant/Owner: Marshall Sampling Point: TH-13A
Investigator(s): JRG, SRS Landform (hillside, terrace, hummocks, etc.): Terrace/Bluff
Local relief (concave, convex, none): Convex Slope (%): 1-3
Subregion: Western AK Lat: 61.940943 Long: -162.152771 Datum: WGS 84
Soil Map Unit Name: N/A NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks: Dry period last 3 months

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. ~~Aln Vir~~			
2.			
3.			
4.			
Total Cover:	0		
50% of total cover: ___ 20% of total cover: ___			
Sapling/Shrub Stratum			
1. Aln Vir	55	Y	FAC
2. Bet Nan	10	N	FAC
3. Vac Uli	30	Y	FAC
4. Sal Ric	2	N	FACW
5. Spi ste	10	N	FACU
6. Rib Tri	2	N	FAC
Lin Bor	10	N	FAC
Total Cover:	119		
50% of total cover: 59.5 20% of total cover: 23.8			
Herb Stratum			
1. Tri Eur	15	Y	FACU
2. Equ Arv	5	N	FAC
3. Cal Can	20	Y	FAC
4. Cha Ang	2	N	FAC
5. Dry Exp	5	N	FACU
6. ~~[illegible]~~	~~10~~	~~N~~	~~[illegible]~~
7. Rub Pad	2	N	FAC
8. ~~Spi st~~			
9.			
10.			
Total Cover:	49		
50% of total cover: 24.5 20% of total cover: 9.8			

Plot size (radius, or length x width) 1/10 acre % Bare Ground —
% Cover of Wetland Bryophytes 2 Total Cover of Bryophytes 2
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	—	x 1 = —
FACW species	2	x 2 = 4
FAC species	136	x 3 = 408
FACU species	30	x 4 = 120
UPL species	—	x 5 = —
Column Totals:	168 (A)	532 (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: TH - 13A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	7.5YR 2.5/2	100					Oi	
7-14	10YR 3/2	70	10YR 4/2	30	D	M	SiL	
14-24	2.5Y 3/3						FSaL	gravels

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [N] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [N] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [N] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [N] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: —
Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:
AA(-) in all layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [N] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [N] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [N] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [Y] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ________
Water Table Present? Yes ____ No X Depth (inches): ________
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ________

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Well drained

B2: PHOTOGRAPHIC LOG

 # 1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: TH-1	Location Description: 62.04633, -163.32125	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: TH-2	Location Description: 62.07217, -163.30002	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-3	Location Description: 62.07320, -163.30121	Landscape: FACING North

LANDSCAPE – FACING West

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-4	Location Description: 62.07142, -163.30125	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-5	Location Description: 62.06821, -163.30283	Landscape: FACING East

LANDSCAPE – FACING South

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-6 | **Location Description: 62.06034, -163.30260** | **Landscape: FACING West**

LANDSCAPE – FACING North

SOILS: Soil pit

1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: TH-7	Location Description: 62.10470, -163.68518	Landscape: FACING West

LANDSCAPE – FACING North

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-8	Location Description: 62.10255, -163.68467	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-9	Location Description: 62.03678, -163.24691	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-10	Location Description: 62.03954, -163.24054	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

Photo Type: TH-11	Location Description: 62.05299, -163.30636	Landscape: FACING East

LANDSCAPE – FACING South

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-12	Location Description: 62.05610, -163.30314	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

Photo Type: TH-13	Location Description: 62.07023, -163.29757	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-14	Location Description: 62.06850, -163.29788	Landscape: FACING East

LANDSCAPE – FACING South

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-15	**Location Description: 62.06633, -163.29820**	**Landscape: FACING South**

LANDSCAPE – FACING West

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-16	Location Description: 62.06346, -163.29897	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-17	Location Description: 62.06196, -163.29769	Landscape: FACING West

LANDSCAPE – FACING North

SOILS: Soil pit

Photo Type: TH-18	Location Description: 62.06145, -163.29921	Landscape: FACING West

LANDSCAPE – FACING North

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-19	Location Description: 62.06018, -163.29671	Landscape: FACING East

LANDSCAPE – FACING South

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-20	Location Description: 62.06018, -163.29671	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

Photo Type: TH-1A	Location Description: 61.92595, -162.01748	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

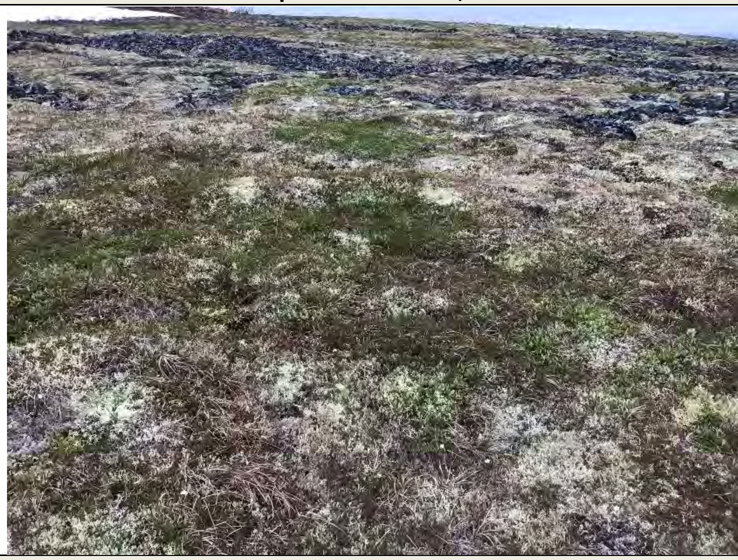
# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-2A	Location Description: 61.92673, -162.01977	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

Photo Type: TH-3A	Location Description: 61.92734, -162.02236	Landscape: FACING East

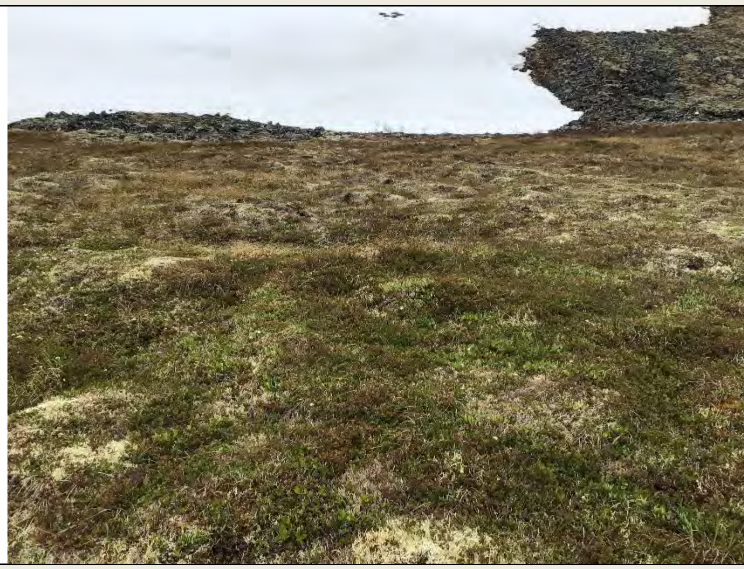


LANDSCAPE – FACING South

SOILS: Soil pit

Photo Type: TH-4A	Location Description: 61.92605, -162.02687	Landscape: FACING West

LANDSCAPE – FACING North



SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-5A	Location Description: 61.92187, -162.02358	Landscape: FACING West

LANDSCAPE – FACING North

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-6A	Location Description: 61.92631, -162.03307	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-7A	Location Description: 61.93173, -162.06234	Landscape: FACING East

LANDSCAPE – FACING South

SOILS: Soil pit

 # 1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: TH-8A	Location Description: 61.93681, -162.08384	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

Photo Type: TH-9A	**Location Description: 61.94297, -162.11923**	**Landscape: FACING North**

LANDSCAPE – FACING East

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-10A	Location Description: 61.94211, -162.12762	Landscape: FACING South

LANDSCAPE – FACING West

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-11A	Location Description: 61.94057, -162.13654	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

Photo Type: TH-12A	Location Description: 61.93986, -162.15136	Landscape: FACING North

LANDSCAPE – FACING East

SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: TH-13A	Location Description: 61.94049, -162.15277	Landscape: FACING South

LANDSCAPE – FACING West

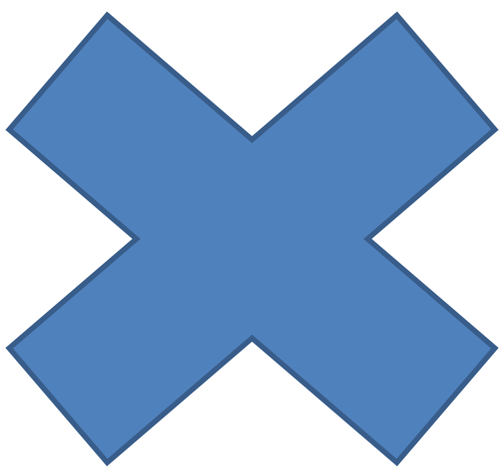
SOILS: Soil pit

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-1	Location Description: 62.04620, -163.32144	Landscape: FACING Upstream

LANDSCAPE – FACING Downstream

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-2	Location Description: 62.04527, -163.33006	Landscape: FACING West

LANDSCAPE – FACING North

Observed ground cover

Photo Type: PP-3	Location Description: 62.04520, -163.32144	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-4	Location Description: 62.04525, -163.32855	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-5	Location Description: 62.04543, -163.32911	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-6	Location Description: 62.04626, -163.32142	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-7	Location Description: 62.04611, -163.32156	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-8	Location Description: 62.04558, -163.32941	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-9	Location Description: 62.07225, -163.29934	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-10	Location Description: 62.07315, -163.30079	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

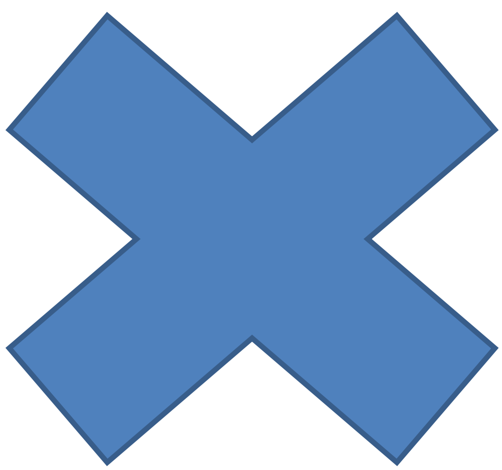


Photo Type: PP-11	Location Description: 62.07320, -163.30121	Landscape: FACING North

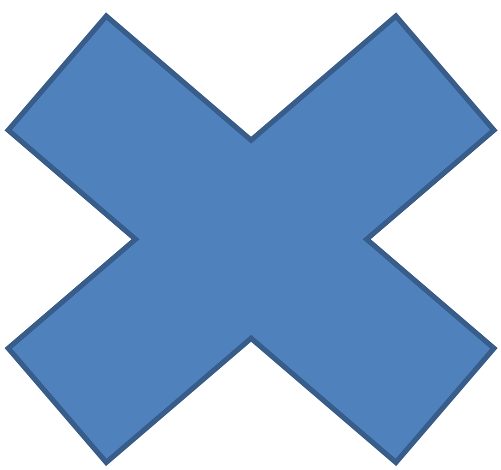
LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-12	**Location Description: 62.06967, -163.30204**	**Landscape: FACING North**

LANDSCAPE – FACING East

Observed ground cover

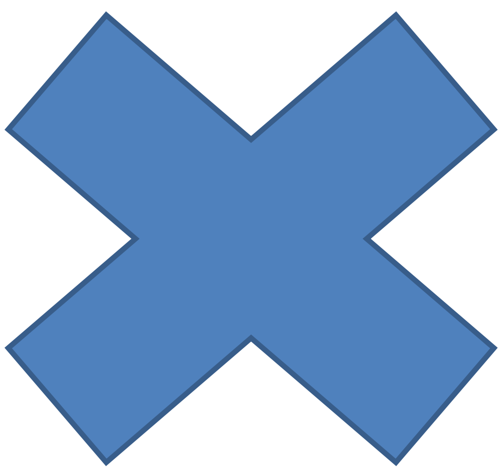


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-13	Location Description: 62.06783, -163.30279	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

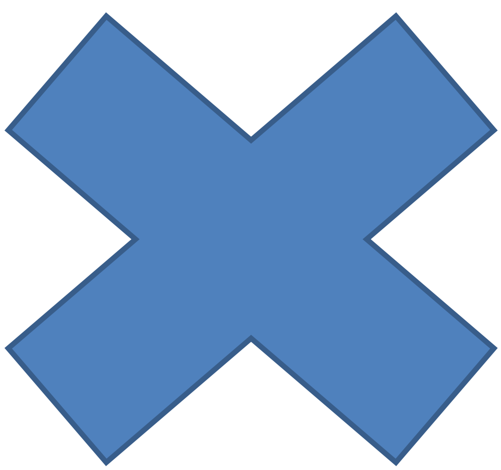


# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-14	Location Description: 62.06714, -163.30224	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-15	Location Description: 62.066665, -163.30165	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

Photo Type: PP-16	Location Description: 62.06569, -163.30237	Landscape: FACING West

LANDSCAPE – FACING North

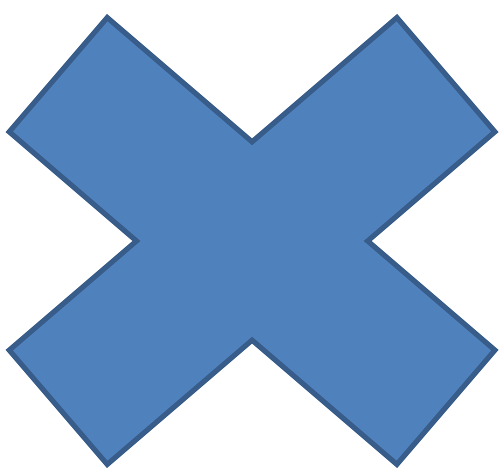
Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-17	Location Description: 62.06544, -163.302071	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover



1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-18	Location Description: 6206069, -163.30234	Landscape: FACING West

LANDSCAPE – FACING North

Observed ground cover

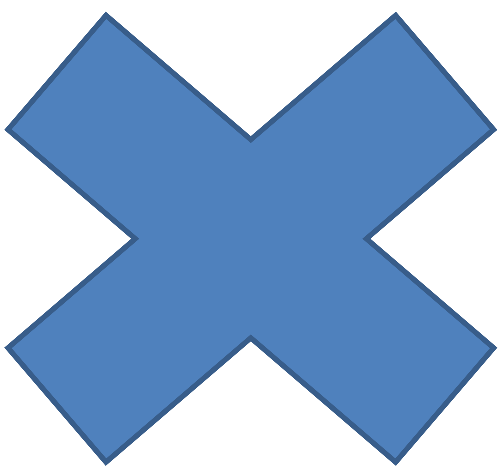


Photo Type: PP-19	Location Description: 62.10160, -163.67979	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-20	Location Description: 62.10219, -163.67845	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

Photo Type: PP-21	Location Description: 62.10246, -163.67860	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

Photo Type: PP-22	Location Description: 62.10293, -163.67942	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

Photo Type: PP-23	Location Description: 62.10419, -163.69121	Landscape: FACING West

LANDSCAPE – FACING North

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-24	Location Description: 62.10470, -163.68216	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-25	Location Description: 62.10471, -163.68247	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-26	Location Description: 62.10463, -163.68291	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-27	Location Description: 62.10460, -163.68339	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

Photo Type: PP-28	Location Description: 62.10369, -163.68621	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-29	Location Description: 62.10108, -163.68267	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-30	Location Description: 62.10118, -163.68214	Landscape: FACING East

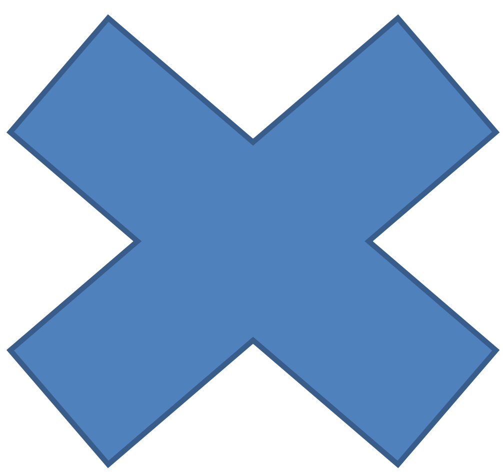
LANDSCAPE – FACING South

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-31	**Location Description: 62.10170, -163.68064**	**Landscape: FACING West**

LANDSCAPE – FACING North

Observed ground cover

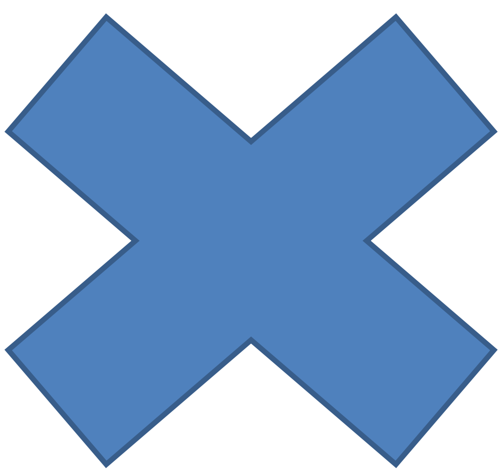


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-32	Location Description: 62.03681, -163.24550	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

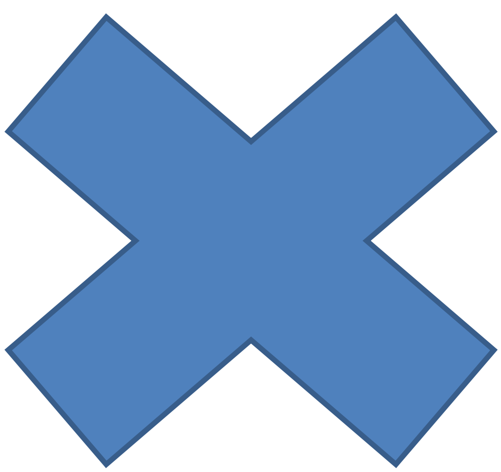


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-33	Location Description: 62.03706, -163.24450	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-34	**Location Description: 62.03956, -163.23989**	**Landscape: FACING East**

LANDSCAPE – FACING South

Observed ground cover

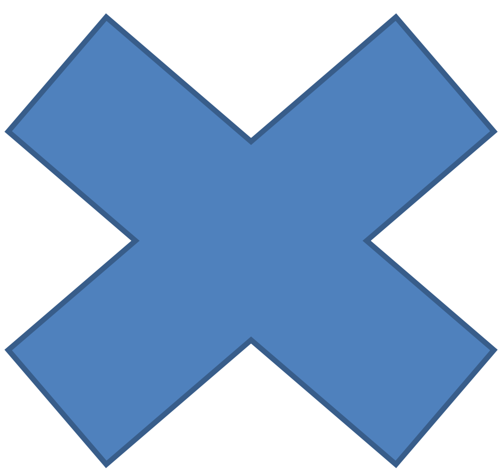


Photo Type: PP-35	Location Description: 62.03906, -163.24018	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

Photo Type: PP-36	Location Description: 62.03844, -163.24161	Landscape: FACING West

LANDSCAPE – FACING North

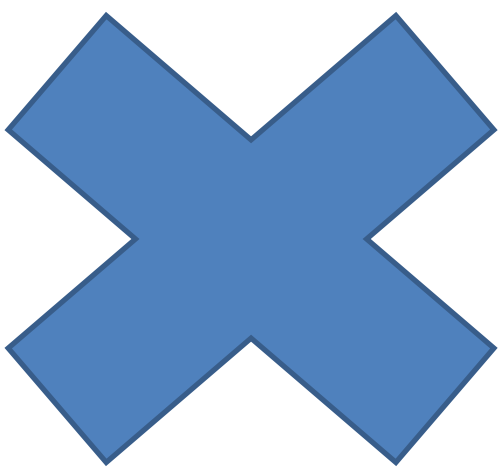
Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-37	Location Description: 62.03982, -163.24114	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-38	Location Description: 62.05611, -163.30367	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

Photo Type: PP-39	Location Description: 62.05644, -163.30370	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

 # 1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-40	Location Description: 62.05660, -163.30341	Landscape: FACING West

LANDSCAPE – FACING North

Observed ground cover

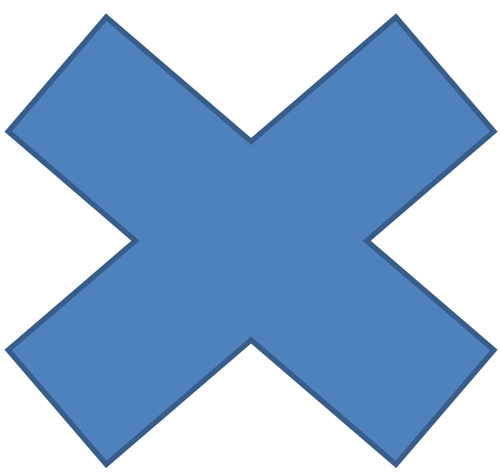


Photo Type: PP-41	Location Description: 62.05718, -163.30356	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

 # 1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-42	Location Description: 62.05735, -163.30334	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

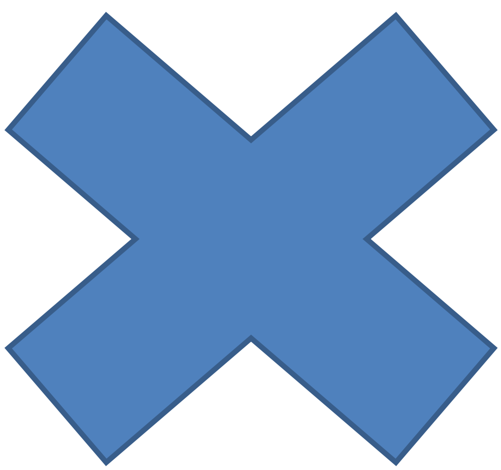


Photo Type: PP-43	Location Description: 62.05723, -163.30294	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

Photo Type: PP-44	Location Description: 62.07031, -163.29776	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-45	Location Description: 62.07000, -163.29835	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-46	Location Description: 62.06849, -163.29845	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

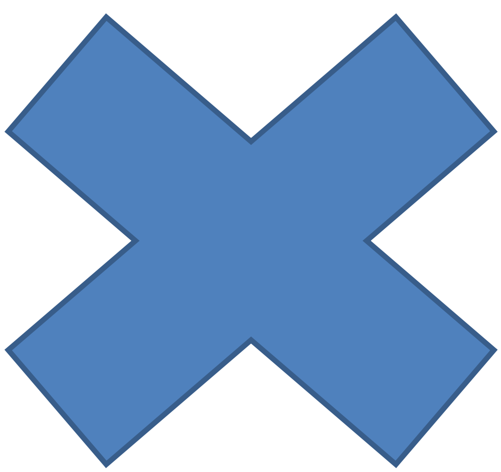


Photo Type: PP-47	Location Description: 62.06655, -163.29892	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

 # 1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-48	Location Description: 62.06491, -163.29925	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-49	**Location Description: 62.07182, -163.29969**	**Landscape: FACING North**

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-50	Location Description: 62.07117, -163.29670	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

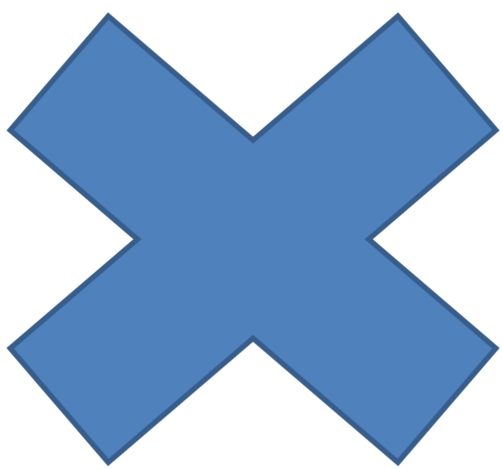


Photo Type: PP-51	Location Description: 62.07108, -163.29680	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-52	Location Description: 62.06181, -163.29862	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

Photo Type: PP-53	Location Description: 62.06089, -163.29937	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-54	Location Description: 62.06062, -163.299941	Landscape: FACING West

LANDSCAPE – FACING North

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-55	**Location Description: 62.06035, -163.29968**	**Landscape: FACING South**

LANDSCAPE – FACING West

Observed ground cover

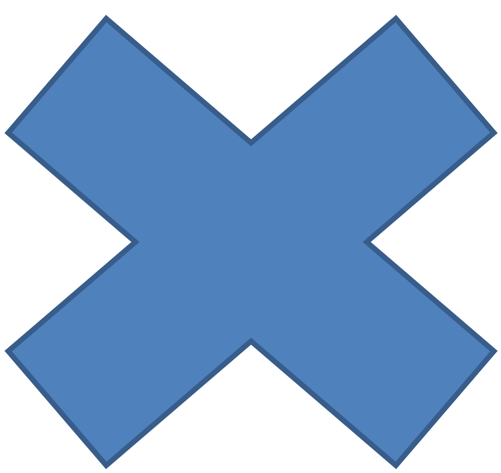


Photo Type: PP-56	Location Description: 62.06015, -163.29863	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

1123.15143.01 Wetland Delineation

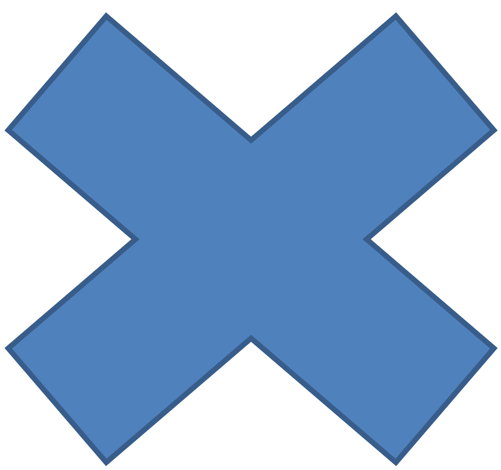
Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-57	Location Description: 62.05971, -163.29827	Landscape: FACING South

LANDSCAPE – FACING West

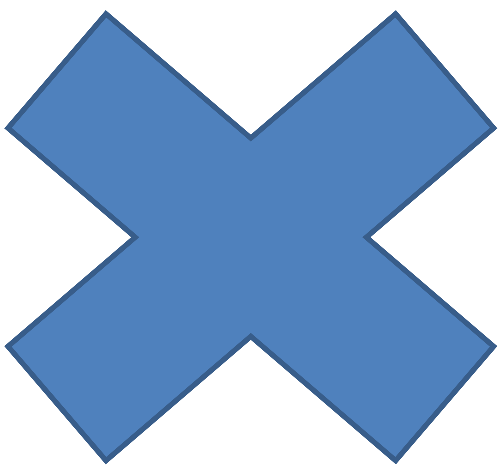
Observed ground cover



# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-58	**Location Description: 62.05944, -163.29994**	**Landscape: FACING North**

LANDSCAPE – FACING East

Observed ground cover



# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-59	**Location Description: 62.05795, -163.29402**	**Landscape: FACING North**

LANDSCAPE – FACING East

Observed ground cover

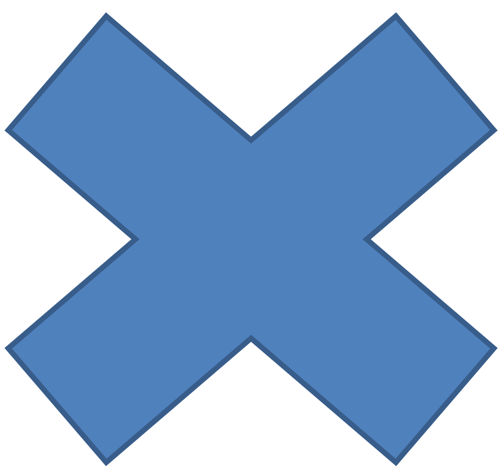


Photo Type: PP-60	Location Description: 61.92537, -162.01548	Landscape: FACING South

LANDSCAPE – FACING West

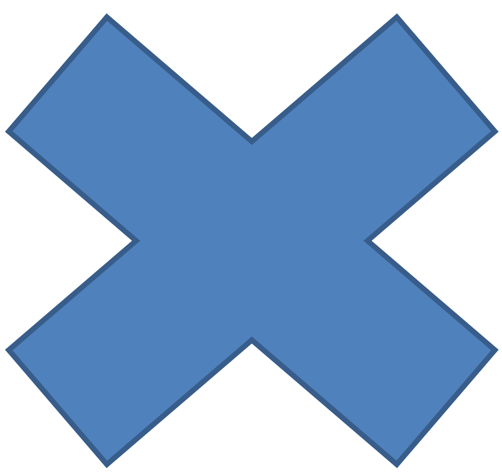
Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-61	Location Description: 61.92459, -162.01577	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-62	Location Description: 61.92534, -162.01673	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

Photo Type: PP-63	Location Description: 61.92705, -162.01887	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

 # 1123.15143.01 Wetland Delineation

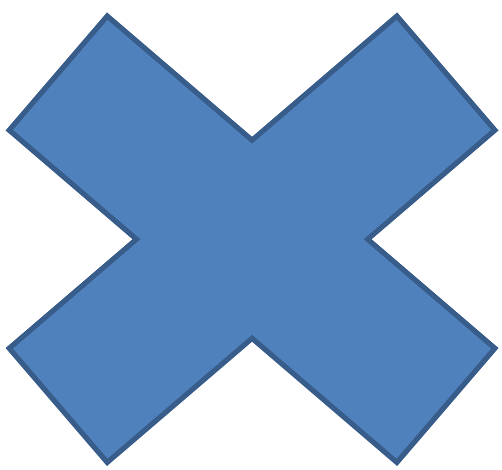
Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-64	Location Description: 61.92691, -162.02061	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

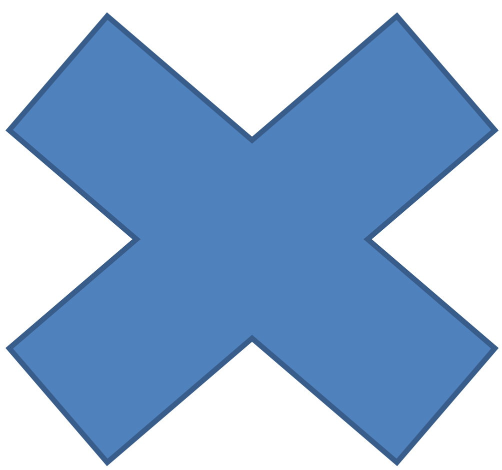


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-65	Location Description: 61.92708, -162.02129	Landscape: FACING West

LANDSCAPE – FACING North

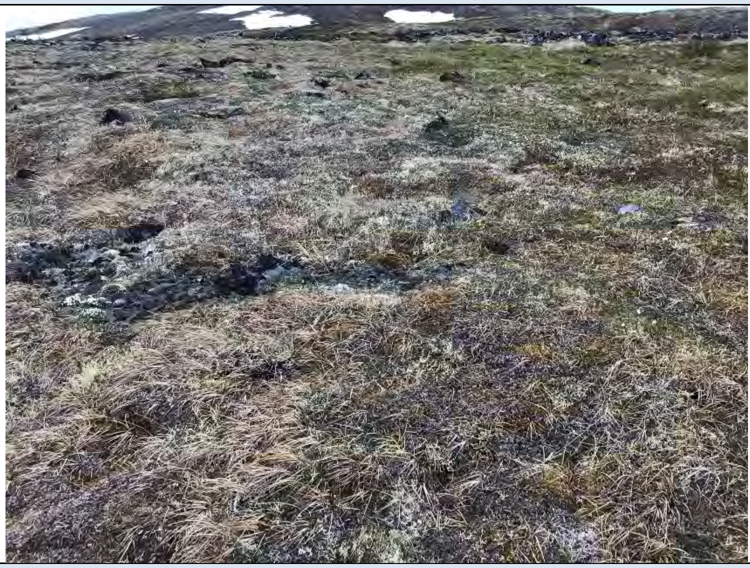
Observed ground cover



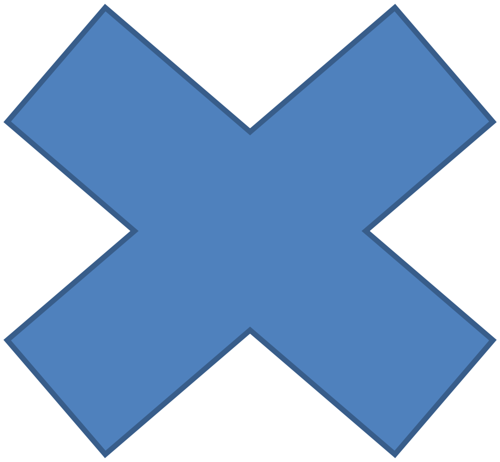
# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-66	Location Description: 61.92748, -162.02453	Landscape: FACING West

LANDSCAPE – FACING North



Observed ground cover

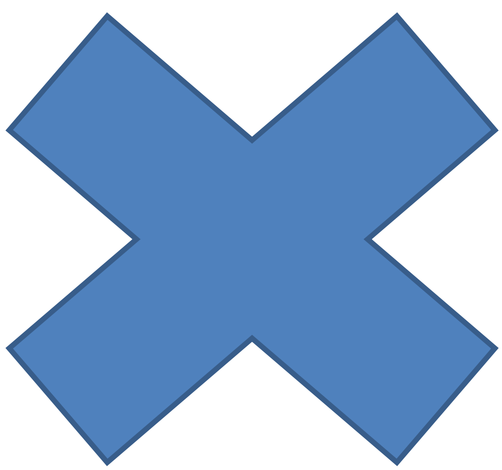


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-67	Location Description: 61.92710, -162.02649	Landscape: FACING South

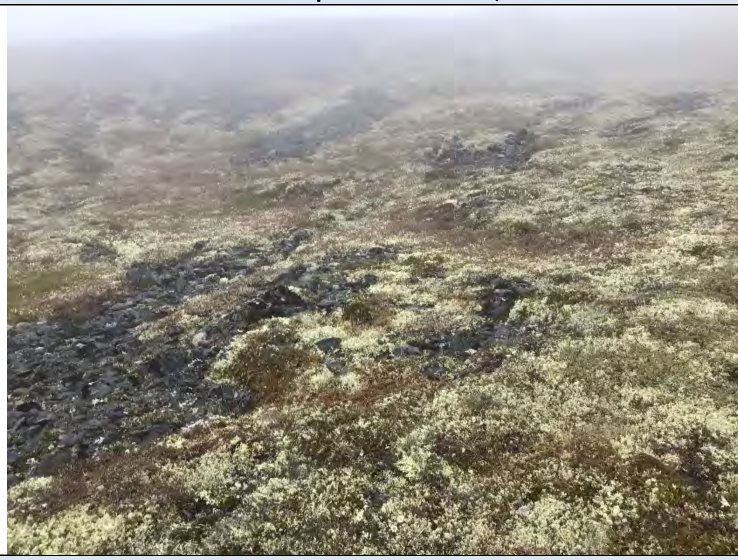
LANDSCAPE – FACING West

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-68	Location Description: 61.92215, -162.02135	Landscape: FACING North



LANDSCAPE – FACING East

Observed ground cover

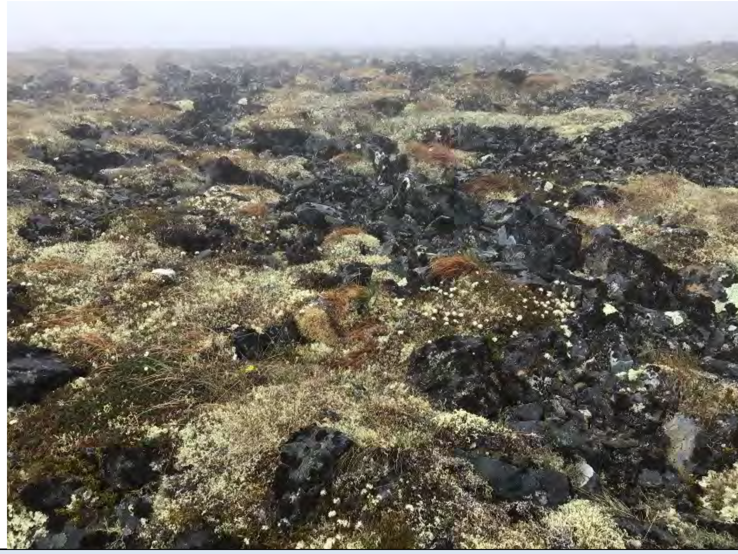
Photo Type: PP-69	Location Description: 61.92329, -162.02560	Landscape: FACING South

LANDSCAPE – FACING West

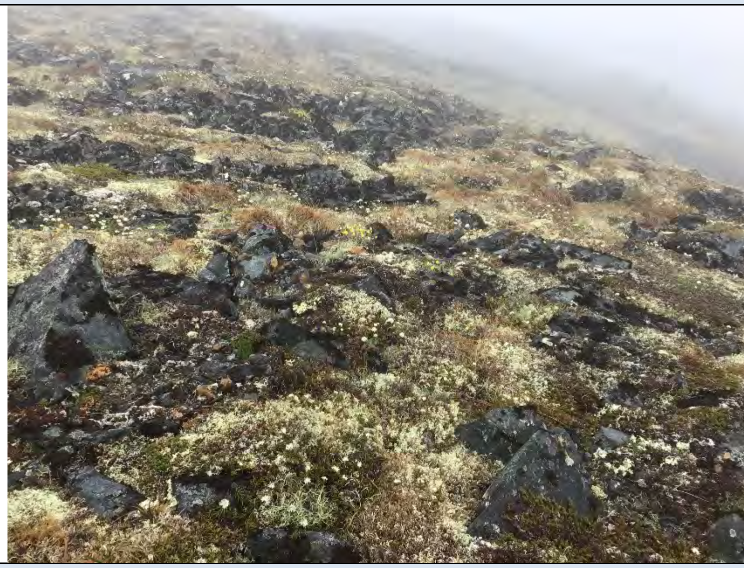
Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

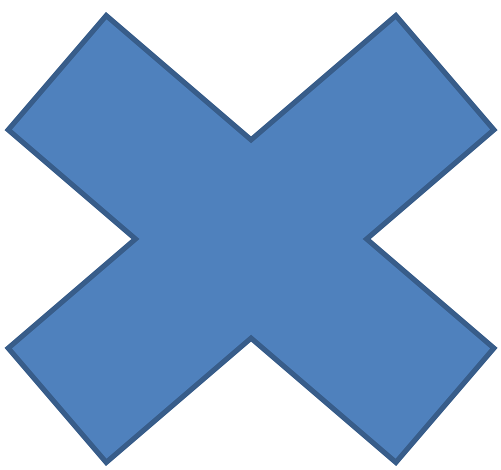
Photo Type: PP-70	Location Description: 61.92442, -162.02469	Landscape: FACING North



LANDSCAPE – FACING East



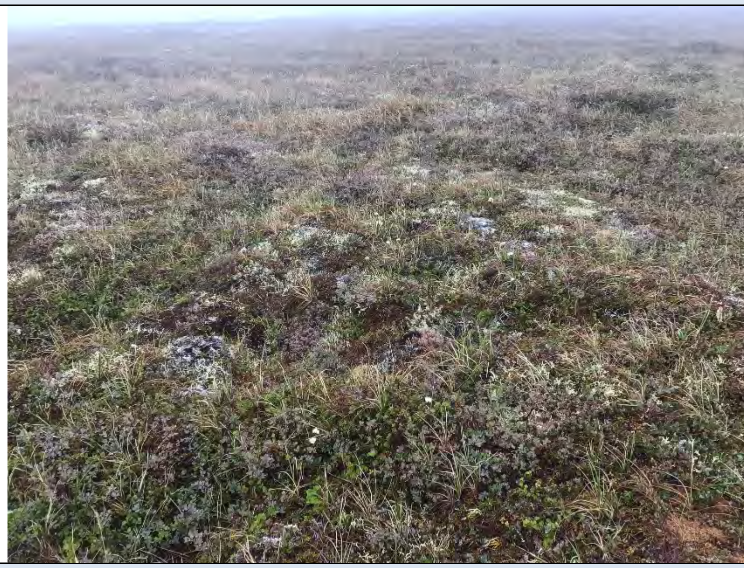
Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-71	Location Description: 61.92533, -162.02776	Landscape: FACING South

LANDSCAPE – FACING West



Observed ground cover

 # 1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

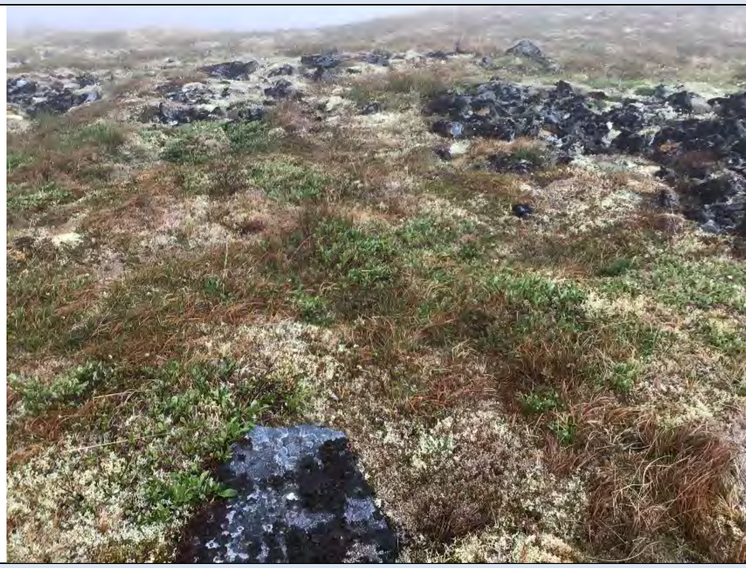
Photo Type: PP-72	Location Description: 61.92595, -162.02920	Landscape: FACING East

LANDSCAPE – FACING South

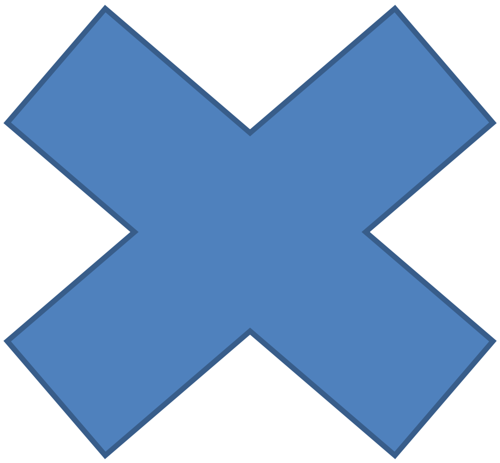
Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-73	**Location Description: 61.92658, -162.03468**	**Landscape: FACING East**

LANDSCAPE – FACING South



Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-74	**Location Description: 61.92674, -162.03647**	**Landscape: FACING East**

LANDSCAPE – FACING South

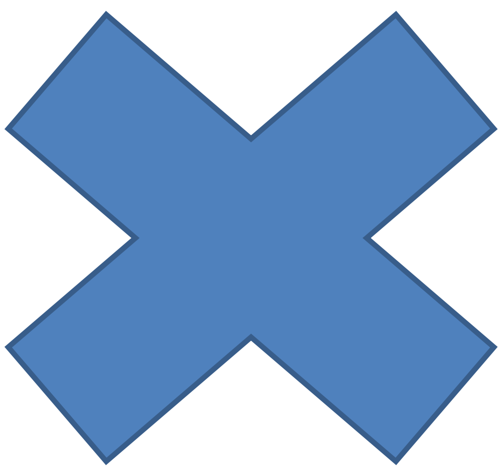
Observed ground cover

# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-75	Location Description: 61.92693, -162.03737	Landscape: FACING South

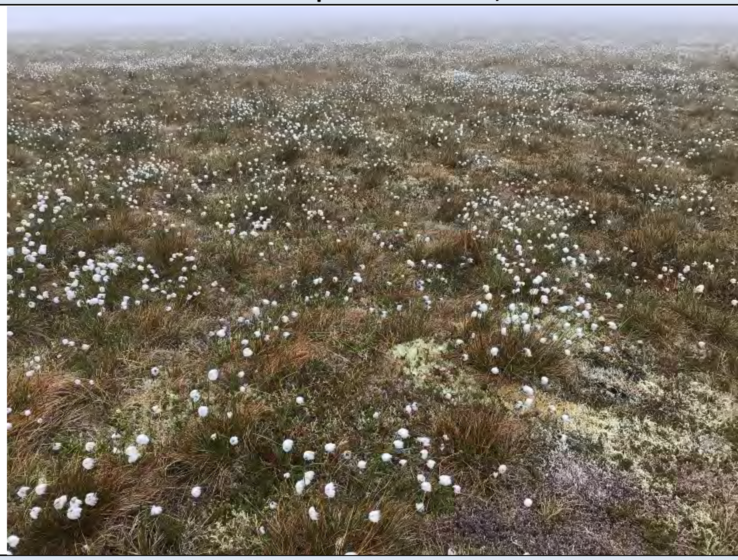
LANDSCAPE – FACING West

Observed ground cover



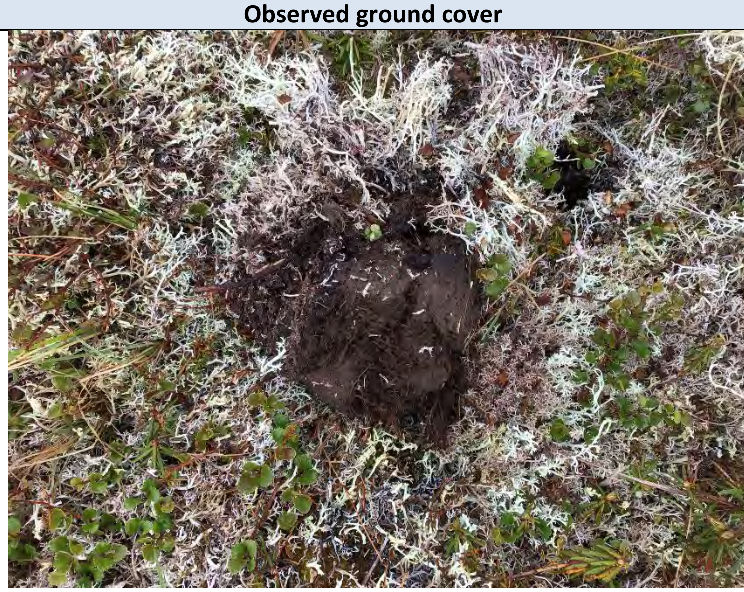
# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-76	Location Description: 61.92758, -162.04082	Landscape: FACING South



LANDSCAPE – FACING West

Observed ground cover

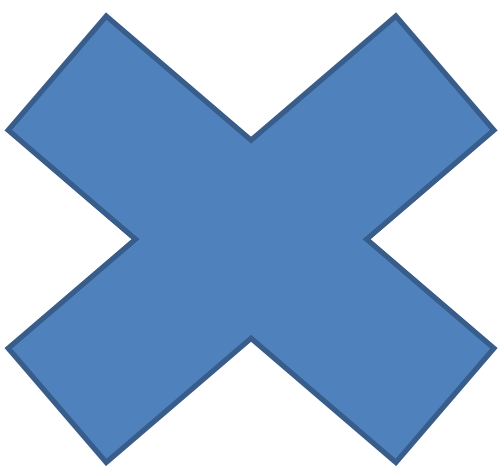


# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-77	Location Description: 61.92801, -162.04251	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

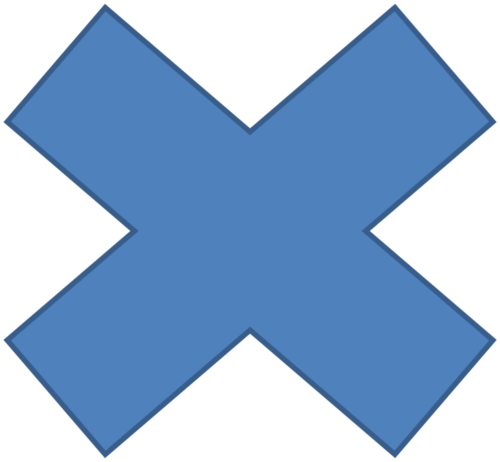


# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-78	Location Description: 61.93022, -162.05465	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-79	Location Description: 61.93176, -162.06267	Landscape: FACING West

LANDSCAPE – FACING North

Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-80	Location Description: 61.93198, -162.06431	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

Photo Type: PP-81	Location Description: 61.93467, -162.07688	Landscape: FACING North

LANDSCAPE – FACING East

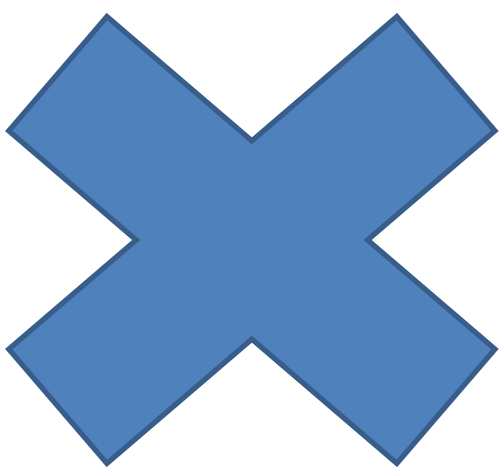
Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-82	Location Description: 61.94019, -162.10088	Landscape: FACING East

LANDSCAPE – FACING South

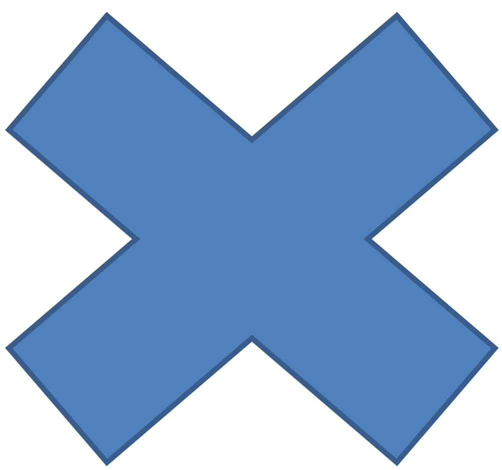
Observed ground cover



# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-83	**Location Description: 61.94187, -162.11216**	**Landscape: FACING West**

LANDSCAPE – FACING North

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-84	Location Description: 61.94267, -162.12311	Landscape: FACING East

LANDSCAPE – FACING South

Observed ground cover

1123.15143.01 Wetland Delineation

Field Dates
June 7-12, 2021

Site Photos
TH-1 - TH-13A
PP-1 – PP-92

Photo Type: PP-85	Location Description: 61.94238, -162.12583	Landscape: FACING West

LANDSCAPE – FACING North

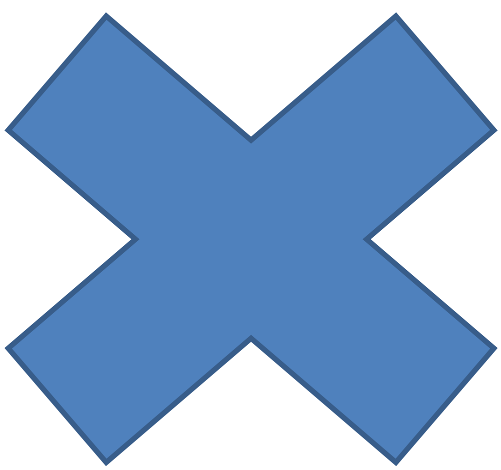
Observed ground cover

# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-86	Location Description: 61.94228, -162.12647	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover

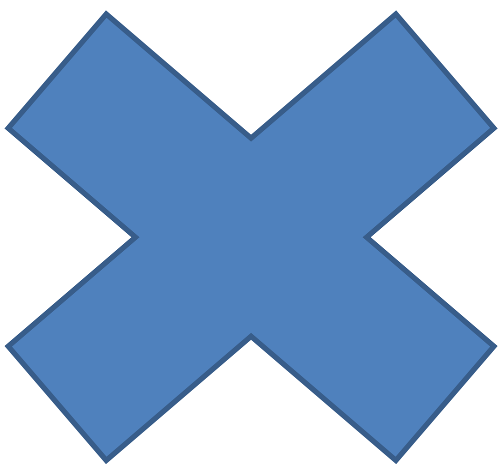


# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-87	**Location Description: 61.94068, -162.14004**	**Landscape: FACING North**

LANDSCAPE – FACING East

Observed ground cover

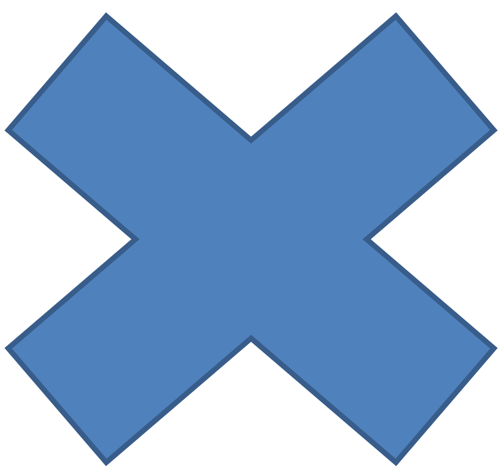


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-88	Location Description: 61.94066, -162.14686	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

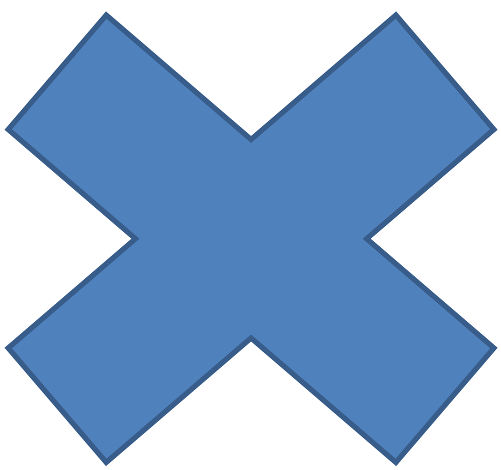


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-89	Location Description: 61.93998, -162.15043	Landscape: FACING South

LANDSCAPE – FACING West

Observed ground cover



# 1123.15143.01 Wetland Delineation	**Field Dates** June 7-12, 2021	**Site Photos** TH-1 - TH-13A PP-1 – PP-92
Photo Type: PP-90	**Location Description: 61.93972, -162.15184**	**Landscape: FACING East**

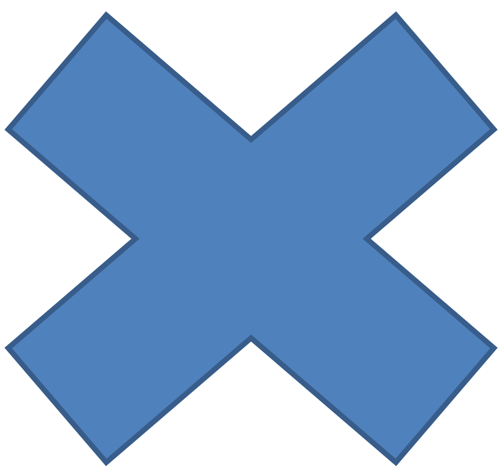
LANDSCAPE – FACING South

Observed ground cover

Photo Type: PP-91	Location Description: 61.94131, -162.15301	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover

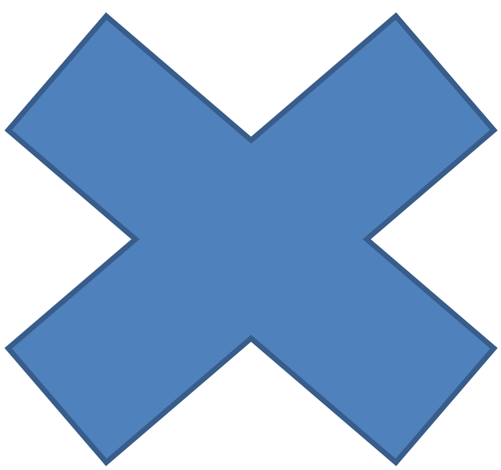


# 1123.15143.01 Wetland Delineation	Field Dates June 7-12, 2021	Site Photos TH-1 - TH-13A PP-1 – PP-92

Photo Type: PP-92	Location Description: 61.94131, -162.15301	Landscape: FACING North

LANDSCAPE – FACING East

Observed ground cover



C: FUNCTIONS AND VALUES ASSESSMENT DATASHEETS

Appendix A
Wetland Assessment Data Form

<u>Digital Form</u> – Use only if completing on a computer. Otherwise, use form in AKWAM manual. Use this form to assess areas that are primarily wetlands (versus waterbodies). For waterbodies, use the Waterbody Categorization Form.

1. **Project name and ADOT&PF #:** St Marys Airport Improvements
2. **Assessment Area #(s):** 1, Riverine
3. **Evaluation date:** Mo. 6 Day 22 Yr. 2021
4. **Evaluator(s) and affiliation:** JRG, DOWL
5. **Purpose of evaluation:**

☒ Wetland/waterbody potentially affected by a proposed project ☐ Mitigation wetlands; pre-construction

☐ Mitigation wetlands; post-construction ☐ Other ______

6. **Wetland location(s):**

Legal: T. ______ R. ______; S. ______; and T. ______; R. ______ ; S. ______ ; ______ Meridian

Approx. stationing or mileposts or pertinent project component: See Figures

Lat. (dec. deg.)**:** ______ **Long.:** ______ **Datum:** NAD 83 **Nearest community:** St Marys and Marshall

Watershed: Yukon (smallest named stream), tributary of ______ Ecoregion (from USCOE 2007): ______

7. **Identifying numbers of related data:** wetland determination forms ______ photos ______

GPS waypoint # ______ other ______

Map (#) showing AA: ______ (closely follow the User's Manual instructions for identifying the AA)

Briefly describe the features that define the limits of the AA (e.g., tributary, wetland/upland boundary, extreme low tide elevation)**:**

Riverine HGM wetlands within the project area are entirely adjacent the Yukon River at the proposed St Marys Airport and Marshall material site barge landings. The riverine areas are below ordinary high water.

8. **Wetland size** (total acres, not just AA): ______ acres (visually estimated) or 0.1 acres (measured, e.g., in GIS)

9. **Assessment area (AA) size:** ______ acres (visually estimated) or 0.1 acres (measured)

Acreage of the AA MINUS the part that is waterbody that will be separately assessed using the waterbody form: ______ acres of <u>wetland</u> in AA

10. **Classification of Wetland and Waterbody in the Wetland AA:**

Class (Cowardin)	Water Regime (Cowardin)	Modifier (if any; Cowardin)	% of AA
EM	P/P		100%
			%
			%
			%
			%

HGM Class (Brinson)	% of AA
Riverine	100%
	%
	%
	%

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Flat (**F**), Lacustrine Fringe (**LF**)

Abbreviations:

Cowardin Classes: Forested Wetland (**FO**), Scrub-Shrub Wetland (**SS**), Emergent Wetland (**EM**), Moss-lichen Wetland (**ML**), Aquatic Bed (**AB**), Unvegetated (**UN**)

Water (Inundation) Regimes: Permanent/Perennial (**P/P**), Seasonal/Intermittent (**S/I**), Temporary/Ephemeral/Saturated (**T/E**)

Modifiers: Excavated (**X**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**), Beaver-modified (**B**)

11. **Estimated relative abundance** of similar wetlands within the same 6th level hydrologic unit subregion (see definitions in user's manual)**:**

(check one) ☐Unknown ☐Rare ☐Common ☒Abundant

What information sources did you use for this estimate?

The Yukon River is a large river in western Alaska with side channels, sloughs, and oxbows forming emergent wetlands abundantly along its reaches.

12. General condition of AA:

i. Disturbance (see user's manual for descriptions of disturbance levels; check appropriate box):

Conditions adjacent to AA / Conditions within AA	Predominant conditions adjacent to (within 500 feet of) the AA, plus any area that drains into the AA		
	Adjacent land is in a natural state	***Adjacent land has experienced minimal or minor disturbance***	***Adjacent land is substantially disturbed***
AA is in a natural state	☒ low disturbance	☐ low disturbance	☐ moderate disturbance
AA has experienced minimal or minor disturbance	☐ moderate disturbance	☐ moderate disturbance	☐ high disturbance
AA is substantially disturbed	☐ high disturbance	☐ high disturbance	☐ high disturbance

Describe the disturbance within the AA (type, age, intensity, source of disturbance, location)**:**

The emergent wetland is part of a slough of the Yukon River with no visible disturbance during a survey June 2021.

ii. Consider the 6th level HU containing the AA again. If you estimate that **more than 10% of the land in the 6th level HU is disturbed**, check here ☐, and choose (below) the disturbance level that is one level higher:

☒ low disturbance ☐ moderate disturbance ☐ high disturbance

iii. List any noxious or invasive plant or animal species in the AA or surrounding lands (specify which are in the AA):

N/A

iv. Briefly describe the AA and surrounding land use and habitat types (dominant species, water source, topography, approximate slope, inlets and outlets, land use, relationship to other AAs, adjacent vegetation types and land uses)**:**

The AA is an emergent wetland at the proposed Marshall Barge Landing on a sough of the Yukon River. The wetland is permanently flooded by the Yukon River as a small slough. Vegetation consists of Equisetum fluviatile, water source is the Yukon River, flat tomography, river is inlet and outlet.

13. Structural Diversity of AA (based on number of simplified Cowardin **vegetated** classes present, listed in #10 above):

Existing # of Cowardin vegetated classes in AA	*Rating*
≥3 classes; or 2 classes if 1 is forested	☐ H
2 classes; or 1 class if forested	☐ M
1 class, and humans do not prevent establishment of additional classes	☒ M
1 class, and humans limit establishment of additional classes	☐ L

14A. Habitat for Federally Listed or Candidate Threatened or Endangered Plants or Animals or Other Species of Concern:

i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions):

Primary or critical habitat (**list species**) ☐ D ☐ S species: ______

Secondary habitat (**list species**) ☐ D ☐ S species: ______

Incidental habitat (**list species**) ☐ D ☐ S species: ______

None or unknown ☒

ii. Rating (use the conclusions from 14A.i. above and the matrix below to arrive at [check] the functional points and rating):

Highest Habitat Level	*doc/ primary*	*sus/ primary*	*doc/ secondary*	*sus/ secondary*	*doc/ incidental*	*sus/ incidental*	*None*
One or more of the species listed in 14A.i. is a federally Listed or Candidate Threatened or Endangered Species	☐ 1H	☐ .8H	☐ .9M	☐ .7M	☐ .3L	☐ .1L	☒ 0L
Species listed 14A.i. are all "Other Species of Concern" (i.e., not listed under the Endangered Species Act)	☐ .8M	☐ .7M	☐ .6M	☐ .5M	☐ .2L	☐ .1L	☒ 0L

Sources for documented or suspected use (e.g., observations, records, etc):

USFWS Information Planning and Consultation Tool June 2021

iii. Final Score and Rating: 0L Enter on the summary page on the Habitat for Federally Listed Species row.

14B. General Wildlife Support Rating:
i. Evidence of overall wildlife use in the AA (check substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
☐ observations of abundant wildlife #s or high species diversity (during any period)
☐ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
☐ presence of extremely limiting habitat features not available in the surrounding area
☐ interviews with local biologists with knowledge of the AA or its habitat type

Minimal (based on any of the following [check]):
☐ few or no wildlife observations during peak use periods
☐ little to no wildlife sign
☐ sparse adjacent upland food sources
☐ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
☐ observations of scattered wildlife groups or individuals or relatively few species during peak periods
☒ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
☒ upland food sources exist in moderate quantity
☐ interviews with local biologists with knowledge of the AA or its habitat type

ii. Wildlife habitat features Working from top to bottom, check appropriate AA attributes in the matrix to arrive at the rating.
Structural diversity is from question #13.
For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent age of the AA (see #10).
Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent. See instructions for further definitions of these terms.

Structural diversity (from #13)	***High***								***Moderate***								***Low***			
Class cover distribution (all vegetated classes)	***Even***				***Uneven***				***Even***				***Uneven***				***Even***			
Longest duration of surface water in ≥ 10% of AA, or immediately abutting the AA	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***
Low *disturbance at AA (see #12i & 12ii)*	☐ E	☐ E	☐ E	☐ H	☐ E	☐ E	☐ H	☐ H	☒ E	☐ H	☐ H	☐ M	☐ E	☐H	☐ M	☐ M	☐ E	☐ H	☐ M	☐ M
Moderate *disturbance at AA (see #12i & 12ii)*	☐ H	☐ H	☐ H	☐ H	☐ H	☐ H	☐ H	☐ M	☐ H	☐ H	☐ M	☐ M	☐ H	☐ M	☐ M	☐ L	☐ H	☐ M	☐ L	☐ L
High *disturbance at AA (see #12i & 12ii)*	☐ M	☐ M	☐ M	☐ L	☐ M	☐ M	☐ L	☐ L	☐ M	☐ M	☐ L	☐ L	☐ M	☐ L	☐ L	☐ L	☐ L	☐ L	☐ L	☐ L

iii. Rating (use the conclusions from i. and ii. above and the matrix below to arrive at [check] the functional points and rating)

Evidence of wildlife use (i)	***Wildlife habitat features rating (ii)***			
	Exceptional	***High***	***Moderate***	***Low***
Substantial	☐ 1E	☐ .9H	☐ .8H	☐ .7M
Moderate	☒ .9H	☐ .7M	☐ .5M	☐ .3L
Minimal	☐ .6M	☐ .4M	☐ .2L	☐ .1L

iv. Final Score and Rating: 0.9H Enter on the summary page on the General Wildlife Support row.
Comments:

14C. **General Fish Support Rating:** (Assess this function if any part of the AA (including the waterbody part of a wetland AA) is used by fish or the existing situation is "correctable" such that the AA could be used by fish. If the AA is not used by fish, fish use is not restorable, or is not desired from a management perspective, then check ☐ **NA** here and proceed to 14D.)

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check] the functional points and rating)

Duration of surface water in AA	***Permanent / Perennial***			***Seasonal / Intermittent***			***Temporary / Ephemeral***		
Aquatic hiding / resting / escape cover in waterbody (Table 3 in manual)	*Optimal*	*Adequate*	*Poor*	*Optimal*	*Adequate*	*Poor*	*Optimal*	*Adequate*	*Poor*
Anadromous salmon species	☒ 1E	☐.8H	☐.6M	☐.9H	☐.7M	☐.5M	☐.7M	☐.5M	☐.3L
Resident and non-salmon sport and subsistence species	☐.9H	☐.7M	☐.5M	☐.8H	☐.6M	☐.4M	☐.6M	☐.4M	☐.2L
Other resident species	☐.8H	☐.6M	☐.4M	☐.7M	☐.5M	☐.3L	☐.5M	☐.3L	☐.1L

Sources used to identify fish species potentially found in AA:
ADF&G Andromous Waters Catalog

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA precluded or substantially reduced by a culvert, dike, or other man-made structure or activity ***or*** *is the waterbody included on the current Alaska Department of Environmental Conservation list of Category 5 / Section 303(d) Impaired Waterbodies (unless its impaired uses are named and aquatic life is not listed as impaired)?*

☐**Y** ☒**N** *If yes, reduce the score in 14C.i. by 0.1: ______ (If no, do not change the score.)*

b) Do noxious or invasive plant species or invasive fish species (see Appendices F and G) occur in the AA?

☐**Y** ☒**N** *If yes, reduce the score in 14C.i. by 0.1: ______ (If no, do not change the score.)*

iii. Final Score and Rating: 1E Enter on the summary page on the General Fish Support row.

Comments:

14D. **Water Storage:** (Applies to wetlands that flood or pond from overbank flooding, precipitation, or overland flow from uplands. If no wetlands in the AA are subject to inundation or ponding, check ☐ **NA** here and proceed to 14E.)

i. Rating

Estimate the variation in the water volume stored in the **wetland** portion of the AA **that experiences surface ponding or flooding** during the typical year, between break-up and freeze-up. First, identify the part of the AA that is both wetland and has surface water sometime between breakup and freezeup (the "flooded wetland"). Estimate its area in acres: 0.1 acres = A.

Second, estimate the range in that flooded wetland's water surface elevation between its lowest and highest elevation during the unfrozen period, in feet. Call this D for depth: 1 feet = D. For example, if the water table is typically one foot below the ground surface during the driest part of summer, and is typically 6 inches above the surface following breakup, the range is 18 inches, or 1.5 feet. Consider evidence such as water marks, staining on vegetation or rocks, drift lines, and the depth to the water table in your soil pit. Consider also the elevation of the wetland surface relative to the elevation of the water surface in an adjacent stream (i.e., does the channel overflow its banks into the wetland?). During a flood, the depth of water over a stream channel is likely to be double its depth when the stream is full to its banks. Consider the area the stream would flood when the water is that deep.

Multiply the range in the flooded wetland's water surface elevation (D) times the area (A) to estimate the maximum storage volume in acre-feet. D 1 feet X A 0.1 acres = 0.1 acre-feet. Use this storage volume estimate in the matrix below.

Next, determine the portion of the flooded wetland that is forested, shrub-dominated, or is neither of those but is dominated by hummocks or tussocks at least one foot in height:

% of AA that experiences water surface fluctuation that is forested or scrub/shrub 0%

plus the additional % of the flooded wetland that is hummocky 0%

= 0% of flooded wetland with water-slowing roughness. Use this percentage in the second row of the matrix below.

Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating.

Estimated maximum acre-feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	***>5 acre-feet***			***1 to 5 acre-feet***			***<1 acre-foot***		
% of flooded wetland classified as forested or scrub/shrub or dominated by hummocks > 1 foot tall	*>75%*	*25-75%*	*<25%*	*>75%*	*25-75%*	*<25%*	*>75%*	*25-75%*	*<25%*
AA contains ***no outlet or restricted outlet***	☐ 1H	☐ .9H	☐ .6M	☐ .8H	☐ .7M	☐ .5M	☐ .4M	☐ .3L	☐ .2L
AA contains ***unrestricted outlet***	☐ .9H	☐ .8H	☐ .5M	☐ .7M	☐ .6M	☐ .4M	☐ .3L	☐ .2L	☒ .1L

ii. Final Score and Rating: 0.1L Enter on the summary page on the Water Storage row.

Comments:

iii. Potential Property Protection

Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (check)? ☐ **Y** ☒ **N** (This information will be used later.)

Comments:

14E. **Sediment/Nutrient/Toxicant Retention and Removal:** (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are, or with the planned project will be, subject to such input, check ☒ **NA** here and proceed to 14F.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	*AA receives or surrounding land use (including proposed future land use) has potential to deliver levels of sediments, nutrients, or toxicants at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication are present, or sources are suspected.*				*Waterbody is on Alaska's Section 303(d) List of Impaired Waterbodies or AA receives or surrounding land use has potential to deliver high levels of sediments, nutrients, or toxicants such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, unnatural turbidity, or signs of eutrophication are present.*			
% cover of vegetation in AA	≥ 70%		< 70%		≥ 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
*AA contains **no or restricted outlet***	☐ 1H	☐ .8H	☐ .7M	☐ .5M	☐ .5M	☐ .4M	☐ .3L	☐ .2L
*AA contains **unrestricted outlet***	☐ .9H	☐ .7M	☐ .6M	☐ .4M	☐ .4M	☐ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: N/A Enter on the summary page on the Sediment/Nutrient/Toxicant Retention row.
Comments:

14F. Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14F does not apply, check ☐ **NA** here and proceed to 14G.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating)

For the <u>wetland</u> area subjected to erosive forces, % cover of species with deep, soil-binding root masses	***Duration of surface water adjacent to rooted vegetation in the AA***		
	Permanent / Perennial	***Seasonal / Intermittent***	***Temporary / Ephemeral***
≥ 65%	☐ 1H	☐ .9H	☐ .7M
35-64%	☐ .7M	☐ .6M	☐ .5M
< 35%	☒ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: 0.3L Enter on the summary page on the Sediment/Shoreline Stabilization row.
Comments:

14G. Production Export/Terrestrial and Aquatic Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings from 14B and 14C [check appropriate box in matrix])

General Fish Habitat Rating (14C.iii.)	***General Wildlife Habitat Rating (14B.iii.)***		
	E/H	***M***	***L***
E/H	☒ H	☐ H	☐ M
M	☐ H	☐ M	☐ M
L	☐ M	☐ M	☐ L
NA	☐ M	☐ M	☐ L

ii. Rating Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating.
Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14G.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as defined under #10 above, and A = "absent")

A	***Vegetated component >5 acres***						***Vegetated component 1-5 acres***						***Vegetated component <1 acre***					
B	***High***		***Moderate***		***Low***		***High***		***Moderate***		***Low***		***High***		***Moderate***		***Low***	
C	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***
P/P	☐ 1H	☐ .7M	☐ .8H	☐ .5M	☐ .6M	☐ .4M	☐ .9H	☐ .6M	☐ .7M	☐ .4M	☐ .5M	☐ .3L	☒ .8H	☐ .6M	☐ .6M	☐ .4M	☐ .3L	☐ .2L
S/I	☐ .9H	☐ .6M	☐ .7M	☐ .4M	☐ .5M	☐ .3L	☐ .8H	☐ .5M	☐ .6M	☐ .3L	☐ .4M	☐ .2L	☐ .7M	☐ .5M	☐ .5M	☐ .3L	☐ .3L	☐ .2L
T/E or A	☐ .8H	☐ .5M	☐ .6M	☐ .3L	☐ .4M	☐ .2L	☐ .7M	☐ .4M	☐ .5M	☐ .2L	☐ .3L	☐ .1L	☐ .6M	☐ .4M	☐ .4M	☐ .2L	☐ .2L	☐ .1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.)
A **Vegetated Upland Buffer** is an area with ≥ 30% plant cover, ≤ 2% noxious or invasive plant cover, and that is not subjected to periodic mowing or clearing (unless for weed control).
a) Is there an average ≥50-foot-wide vegetated upland buffer around ≥75% of the AA circumference?

☐**Y** ☒**N** *If yes, add 0.1 to the score in **14G.ii.** above and adjust the rating accordingly:* ______

iv. Final Score and Rating: 0.8H Enter on the summary page on the Production Export row.

Comments:

14H. **Groundwater Discharge/Recharge:** (Check the appropriate indicators in i. and ii. below.)

i. Discharge Indicators

- ☐ The AA is a slope wetland (HGM type)
- ☐ Springs or seeps are known or observed
- ☐ Vegetation growing during dormant season
- ☐ Wetland occurs at the toe of a natural slope
- ☒ AA permanently flooded during dry periods
- ☐ Wetland contains an outlet, but no inlet
- ☐ Other: ______

ii. Recharge Indicators ☐ **(NA for fringe wetlands)**

- ☐ Permeable substrate present without underlying impeding layer
- ☐ Wetland contains inlet but no outlet
- ☐ Stream is a known 'losing' stream; discharge decreases downstream
- ☐ Other: ______

iii. Rating (use the information from i. and ii. above and the table below to arrive at [check] the functional points and rating)

Criteria	*Duration of saturation at AA wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
	P/P	*S/I*	*T/E*	*None*
Groundwater discharge or recharge indicators exist	☒ 1H	☐ .7M	☐ .4M	☐ .1L
Permafrost underlies the wetland or insufficient information exists	☐ NA			

iv. Final Score and Rating: 1H Enter on the summary page on the Groundwater Discharge/Recharge row.
Comments:

14I. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating)

Replacement potential	*AA contains irreplaceable wetland types [fens, bogs, springs, seeps, or mature forested wetland type] OR a plant association listed as S1, S2, G1, or G2 by the AKNHP (Appendix J)*			*AA does not contain irreplaceable wetland types and structural diversity (#13) is high OR contains plant association listed as S3, G3, S?, or G? by the AKNHP (Appendix J)*			*AA does not contain irreplaceable wetland types and structural diversity (#13) is low to moderate (Appendix J)*		
Estimated relative abundance of wetland types (from 11)	*rare*	*common*	*abundant*	*rare*	*common*	*abundant*	*rare*	*common*	*abundant*
***Low** disturbance at AA (from 12i and ii)*	☐ 1H	☐ .6M	☐ .5M	☐ .8H	☐ .5M	☐ .4M	☐ .7M	☐ .4M	☒ .3L
***Moderate** disturbance at AA (from 12i and ii)*	☐.9H	☐ .5M	☐ .4M	☐ .7M	☐ .4M	☐ .3L	☐ .6M	☐ .3L	☐ .2L
***High** disturbance at AA (from12i and ii)*	☐ .7M	☐ .3L	☐ .2L	☐ .5M	☐ .2L	☐ .1L	☐ .4M	☐ .1L	☐ .1L

ii. Final Score and Rating: 0.3L Enter on the summary page on the Uniqueness row.

Comments:

14J. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential recreation or education site: (check) ☐**Y** ☐ **N** (if 'Yes' continue with the evaluation; if 'No' then check ☒ **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA:

☐ Educational/scientific study ☐ Consumptive recreation ☐ Non-consumptive recreation ☐ Other ______

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

Known or Potential Recreation or Education Area	*Known*	*Potential*
Public ownership or public easement with general public access (no permission required)	☐ .2H	☐ .15H
Private ownership with general public access (no permission required)	☐ .15H	☐ .1M
Private or public ownership without general public access, or requiring permission for public access	☐ .1M	☐ .05L

iv. Final Score and Rating: N/A Enter on the summary page on the Recreation/Education Potential row.
Comments:

General Site Notes:

FUNCTION AND SERVICE SUMMARY AND OVERALL RATING FOR WETLAND AA #(s): 1, Riverine

Functions and Services	Rating (E, H, M, L)	Actual Functional Points (0 to 1.0)	Possible Functional Points	Optional: Functional Units Affected (Actual Points x AA Acreage Affected)	Indicate the four most prominent functions with a check
A. Habitat for Federally Listed/Candidate T&E Species or Other Species of Concern	L	0	1.0		☐
B. General Wildlife Support	H	0.9	1.0		☒
C. General Fish Support	E	1	1.0		☒
D. Water Storage	L	0.1	1.0		☐
E. Sediment/Nutrient/Toxicant Removal	N/A	N/A	N/A		☐
F. Sediment/Shoreline Stabilization	L	0.3	1.0		☐
G. Production Export/Food Chain Support	H	0.8	1.0		☒
H. Groundwater Discharge/Recharge	H	1	1.0		☒
I. Uniqueness	L	0.3	1.0		☐
J. Recreation/Education Potential (bonus points)	N/A	N/A	NA		☐
Totals:		4.4	8.0		
Percent of Possible Score (actual points divided by possible points)		55%			

Category 1 Wetland: Must satisfy **one** of the following criteria; otherwise go to Category 2
- ☐ Score of 0.9 to 1 functional point for Threatened or Endangered Species or Other Species of Concern; **or**
- ☐ Score of 0.9 or 1 functional point for Uniqueness; **or**
- ☐ Score of 0.9 or 1 functional point for Water Storage **and** answer to Question 14Dii is "yes"; **or**
- ☒ Score of 0.9 or 1 functional point for General Fish Support; **or**
- ☐ Percent of possible score ≥ 70% (round to nearest whole number); or
- ☐ Percent of possible score ≥ 50% **and** 6th level hydrologic unit has already experienced ≥15% land development.

Category 2 Wetland: Criteria for Category 1 not satisfied **and** meets any **one** of the following criteria; otherwise go to Category 4
- ☐ Score of 0.8 functional point for Threatened or Endangered Species or Other Species of Concern; **or**
- ☐ Score of 0.9 or 1 functional point for General Wildlife Support; **or**
- ☐ Score of 0.6 to 0.8 functional point for General Fish Support; **or**
- ☐ Score of 0.8 functional point for Uniqueness; **or**
- ☐ Score 0.7 or 0.8 functional point for Water Storage **and** answer to Question 14Dii is "yes"; **or**
- ☐ Percent of possible score ≥ 50% (round to nearest whole number).

Category 3 Wetland: Criteria for Categories 1, 2, and 4 are not satisfied
- ☐ Does not qualify as Category 1, 2, or 4

Category 4 Wetland: Criteria for Categories 1 and 2 not satisfied **and** all of the following criteria are met; if not, go to Category 3
- ☐ Vegetated <u>wetland</u> component of AA < 1 acre (do <u>not</u> include upland vegetated buffer); **and**
- ☐ Score of 0.5 or lower for Uniqueness; **and**
- ☐ General Wildlife Support is 0.4 or lower; **and**
- ☐ General Fish Support score is 0.3 or lower; **and**
- ☐ If answer to 14Dii is "no", score for Water Storage is 0.2, 0.1, or NA; **and**
- ☐ Is not rated "High" for any function or service; **and**
- ☐ Percent of possible score < 35% (round to nearest whole number).

OVERALL ASSESSMENT AREA RATING: (check appropriate category based on the criteria outlined above)

Category: ☒**1** ☐**2** ☐**3** ☐**4**

Appendix A
Wetland Assessment Data Form

<u>Digital Form</u> – Use only if completing on a computer. Otherwise, use form in AKWAM manual. Use this form to assess areas that are primarily wetlands (versus waterbodies). For waterbodies, use the Waterbody Categorization Form.

1. **Project name and ADOT&PF #:** St Marys Airport Improvements **2. Assessment Area #(s):** 2, Flat
3. **Evaluation date:** Mo. 6 Day 22 Yr. 2021
4. **Evaluator(s) and affiliation:** JRG, DOWL
5. **Purpose of evaluation:**

☒ Wetland/waterbody potentially affected by a proposed project ☐ Mitigation wetlands; pre-construction
☐ Mitigation wetlands; post-construction ☐ Other ______

6. **Wetland location(s):**

Legal: T. ______ R. ______; S. ______; and T. ______; R. ______ ; S. ______ ; ______ Meridian

Approx. stationing or mileposts or pertinent project component: See Figures

Lat. (dec. deg.)**:** ______ **Long.:** ______ **Datum:** NAD 83 **Nearest community:** ______

Watershed: Yukon (smallest named stream), tributary of ______ Ecoregion (from USCOE 2007): ______

7. **Identifying numbers of related data:** wetland determination forms ______ photos ______

GPS waypoint # ______ other ______

Map (#) showing AA: ______ (closely follow the User's Manual instructions for identifying the AA)
Briefly describe the features that define the limits of the AA (e.g., tributary, wetland/upland boundary, extreme low tide elevation)**:**
The AA is comprised of tussock tundra and low shrub wetlands underlain by permafrost that are precipitation driven.

8. **Wetland size** (total acres, not just AA): ______ acres (visually estimated) or 219.4 acres (measured, e.g., in GIS)

9. **Assessment area (AA) size:** ______ acres (visually estimated) or 219.4 acres (measured)
Acreage of the AA MINUS the part that is waterbody that will be separately assessed using the waterbody form: ______ acres of <u>wetland</u> in AA

10. **Classification of Wetland and Waterbody in the Wetland AA:**

Class (Cowardin)	Water Regime (Cowardin)	Modifier (if any; Cowardin)	% of AA
EM	S/I, T/E		57%
SS	S/I, T/E		43%
			%
			%
			%

HGM Class (Brinson)	% of AA
Flat	100%
	%
	%
	%

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Flat (**F**), Lacustrine Fringe (**LF**)

Abbreviations:
Cowardin Classes: Forested Wetland (**FO**), Scrub-Shrub Wetland (**SS**), Emergent Wetland (**EM**), Moss-lichen Wetland (**ML**), Aquatic Bed (**AB**), Unvegetated (**UN**)

Water (Inundation) Regimes: Permanent/Perennial (**P/P**), Seasonal/Intermittent (**S/I**), Temporary/Ephemeral/Saturated (**T/E**)

Modifiers: Excavated (**X**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**), Beaver-modified (**B**)

11. **Estimated relative abundance** of similar wetlands within the same 6th level hydrologic unit subregion (see definitions in user's manual)**:**
(check one) ☐ Unknown ☐ Rare ☐ Common ☒ Abundant

What information sources did you use for this estimate?
Tussock tundra and low shrub, flat hgm wetlands are found throughout the Yukon-Kuskokwim delta. USFWS National Wetland Inventory.

12. General condition of AA:

i. Disturbance (see user's manual for descriptions of disturbance levels; check appropriate box):

Conditions adjacent to AA / ***Conditions within AA***	***Predominant conditions adjacent to (within 500 feet of) the AA, plus any area that drains into the AA***		
	Adjacent land is in a natural state	***Adjacent land has experienced minimal or minor disturbance***	***Adjacent land is substantially disturbed***
AA is in a natural state	☐ low disturbance	☒ low disturbance	☐ moderate disturbance
AA has experienced minimal or minor disturbance	☐ moderate disturbance	☐ moderate disturbance	☐ high disturbance
AA is substantially disturbed	☐ high disturbance	☐ high disturbance	☐ high disturbance

Describe the disturbance within the AA (type, age, intensity, source of disturbance, location)**:**

ii. Consider the 6th level HU containing the AA again. If you estimate that **more than 10% of the land in the 6th level HU is disturbed**, check here ☐, and choose (below) the disturbance level that is one level higher:

☒ low disturbance ☐ moderate disturbance ☐ high disturbance

iii. List any noxious or invasive plant or animal species in the AA or surrounding lands (specify which are in the AA):

N/A

iv. Briefly describe the AA and surrounding land use and habitat types (dominant species, water source, topography, approximate slope, inlets and outlets, land use, relationship to other AAs, adjacent vegetation types and land uses)**:**

Flat wetlands are undisturbed adjacent the St Mary's Airport, material sites, and Marshall Pilcher Mountain Material Site. There is minimal or minor disturbed with gravel infrastructure near these wetlands. Dominant species include Eriophorum vaginatum, Carex aquatilis, Vaccinium uliginosum, and Empetrum nigrum. Water source is precipitation. Topography is flat to gently sloping. 0-2% slope, unrestricted inlets and outlets, undisturbed land use.

13. Structural Diversity of AA (based on number of simplified Cowardin **vegetated** classes present, listed in #10 above):

Existing # of Cowardin vegetated classes in AA	***Rating***
≥3 classes; or 2 classes if 1 is forested	☐ H
2 classes; or 1 class if forested	☒ M
1 class, and humans do not prevent establishment of additional classes	☐ M
1 class, and humans limit establishment of additional classes	☐ L

14A. Habitat for Federally Listed or Candidate Threatened or Endangered Plants or Animals or Other Species of Concern:

i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions):

Primary or critical habitat (**list species**) ☐ D ☐ S species: ______

Secondary habitat (**list species**) ☐ D ☐ S species: ______

Incidental habitat (**list species**) ☐ D ☐ S species: ______

None or unknown ☒

ii. Rating (use the conclusions from 14A.i. above and the matrix below to arrive at [check] the functional points and rating):

Highest Habitat Level	***doc/ primary***	***sus/ primary***	***doc/ secondary***	***sus/ secondary***	***doc/ incidental***	***sus/ incidental***	***None***
One or more of the species listed in 14A.i. is a federally Listed or Candidate Threatened or Endangered Species	☐ 1H	☐ .8H	☐ .9M	☐ .7M	☐ .3L	☐ .1L	☒ 0L
Species listed 14A.i. are all "Other Species of Concern" (i.e., not listed under the Endangered Species Act)	☐ .8M	☐ .7M	☐ .6M	☐ .5M	☐ .2L	☐ .1L	☒ 0L

Sources for documented or suspected use (e.g., observations, records, etc):

USFWS Information for Planning and Consultation

iii. Final Score and Rating: 0L Enter on the summary page on the Habitat for Federally Listed Species row.

14B. General Wildlife Support Rating:
i. Evidence of overall wildlife use in the AA (check substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- ☐ observations of abundant wildlife #s or high species diversity (during any period)
- ☐ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ presence of extremely limiting habitat features not available in the surrounding area
- ☐ interviews with local biologists with knowledge of the AA or its habitat type

Minimal (based on any of the following [check]):
- ☐ few or no wildlife observations during peak use periods
- ☐ little to no wildlife sign
- ☐ sparse adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- ☐ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ☒ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☒ upland food sources exist in moderate quantity
- ☐ interviews with local biologists with knowledge of the AA or its habitat type

ii. Wildlife habitat features Working from top to bottom, check appropriate AA attributes in the matrix to arrive at the rating.
Structural diversity is from question #13.
For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent age of the AA (see #10).
Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent. See instructions for further definitions of these terms.

Structural diversity (from #13)	***High***								***Moderate***								***Low***			
Class cover distribution (all vegetated classes)	***Even***				***Uneven***				***Even***				***Uneven***				***Even***			
Longest duration of surface water in ≥ 10% of AA, or immediately abutting the AA	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***
Low *disturbance at AA (see #12i & 12ii)*	☐ E	☐ E	☐ E	☐ H	☐ E	☐ E	☐ H	☐ H	☐ E	☐ H	☒ H	☐ M	☐ E	☐H	☐ M	☐ M	☐ E	☐ H	☐ M	☐ M
Moderate *disturbance at AA (see #12i & 12ii)*	☐ H	☐ H	☐ H	☐ H	☐ H	☐ H	☐ H	☐ M	☐ H	☐ H	☐ M	☐ M	☐ H	☐ M	☐ M	☐ L	☐ H	☐ M	☐ L	☐ L
High *disturbance at AA (see #12i & 12ii)*	☐ M	☐ M	☐ M	☐ L	☐ M	☐ M	☐ L	☐ L	☐ M	☐ M	☐ L	☐ L	☐ M	☐ L	☐ L	☐ L	☐ L	☐ L	☐ L	☐ L

iii. Rating (use the conclusions from i. and ii. above and the matrix below to arrive at [check] the functional points and rating)

Evidence of wildlife use (i)	***Wildlife habitat features rating (ii)***			
	Exceptional	***High***	***Moderate***	***Low***
Substantial	☐ 1E	☐ .9H	☐ .8H	☐ .7M
Moderate	☐ .9H	☒ .7M	☐ .5M	☐ .3L
Minimal	☐ .6M	☐ .4M	☐ .2L	☐ .1L

iv. Final Score and Rating: 0.7M Enter on the summary page on the General Wildlife Support row.
Comments:

14C. **General Fish Support Rating:** (Assess this function if any part of the AA (including the waterbody part of a wetland AA) is used by fish or the existing situation is "correctable" such that the AA could be used by fish. If the AA is not used by fish, fish use is not restorable, or is not desired from a management perspective, then check ☒ **NA** here and proceed to 14D.)

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check] the functional points and rating)

Duration of surface water in AA	***Permanent / Perennial***			***Seasonal / Intermittent***			***Temporary / Ephemeral***		
Aquatic hiding / resting / escape cover in waterbody (Table 3 in manual)	*Optimal*	*Adequate*	*Poor*	*Optimal*	*Adequate*	*Poor*	*Optimal*	*Adequate*	*Poor*
Anadromous salmon species	☐ 1E	☐.8H	☐.6M	☐.9H	☐.7M	☐.5M	☐.7M	☐.5M	☐.3L
Resident and non-salmon sport and subsistence species	☐.9H	☐.7M	☐.5M	☐.8H	☐.6M	☐.4M	☐.6M	☐.4M	☐.2L
Other resident species	☐.8H	☐.6M	☐.4M	☐.7M	☐.5M	☐.3L	☐.5M	☐.3L	☐.1L

Sources used to identify fish species potentially found in AA:

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA precluded or substantially reduced by a culvert, dike, or other man-made structure or activity ***or*** *is the waterbody included on the current Alaska Department of Environmental Conservation list of Category 5 / Section 303(d) Impaired Waterbodies (unless its impaired uses are named and aquatic life is not listed as impaired)?*

☐**Y** ☐**N** *If yes, reduce the score in 14C.i. by 0.1:* ______ *(If no, do not change the score.)*

b) Do noxious or invasive plant species or invasive fish species (see Appendices F and G) occur in the AA?

☐**Y** ☐**N** *If yes, reduce the score in 14C.i. by 0.1:* ______ *(If no, do not change the score.)*

iii. Final Score and Rating: N/A Enter on the summary page on the General Fish Support row.

Comments:

14D. **Water Storage:** (Applies to wetlands that flood or pond from overbank flooding, precipitation, or overland flow from uplands. If no wetlands in the AA are subject to inundation or ponding, check ☒ **NA** here and proceed to 14E.)

i. Rating

Estimate the variation in the water volume stored in the **wetland** portion of the AA **that experiences surface ponding or flooding** during the typical year, between break-up and freeze-up. First, identify the part of the AA that is both wetland and has surface water sometime between breakup and freezeup (the "flooded wetland"). Estimate its area in acres: _______acres = A.

Second, estimate the range in that flooded wetland's water surface elevation between its lowest and highest elevation during the unfrozen period, in feet. Call this D for depth: ______ feet = D. For example, if the water table is typically one foot below the ground surface during the driest part of summer, and is typically 6 inches above the surface following breakup, the range is 18 inches, or 1.5 feet. Consider evidence such as water marks, staining on vegetation or rocks, drift lines, and the depth to the water table in your soil pit. Consider also the elevation of the wetland surface relative to the elevation of the water surface in an adjacent stream (i.e., does the channel overflow its banks into the wetland?). During a flood, the depth of water over a stream channel is likely to be double its depth when the stream is full to its banks. Consider the area the stream would flood when the water is that deep.

Multiply the range in the flooded wetland's water surface elevation (D) times the area (A) to estimate the maximum storage volume in acre-feet. D ______ feet X A ______ acres = ______ acre-feet. Use this storage volume estimate in the matrix below.

Next, determine the portion of the flooded wetland that is forested, shrub-dominated, or is neither of those but is dominated by hummocks or tussocks at least one foot in height:

% of AA that experiences water surface fluctuation that is forested or scrub/shrub ______%

plus the additional % of the flooded wetland that is hummocky ______%

= ______% of flooded wetland with water-slowing roughness. Use this percentage in the second row of the matrix below.

Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating.

Estimated maximum acre-feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	***>5 acre-feet***			***1 to 5 acre-feet***			***<1 acre-foot***		
% of flooded wetland classified as forested or scrub/shrub or dominated by hummocks > 1 foot tall	*>75%*	*25-75%*	*<25%*	*>75%*	*25-75%*	*<25%*	*>75%*	*25-75%*	*<25%*
AA contains ***no outlet or restricted outlet***	☐ 1H	☐ .9H	☐ .6M	☐ .8H	☐ .7M	☐ .5M	☐ .4M	☐ .3L	☐ .2L
AA contains ***unrestricted outlet***	☐ .9H	☐ .8H	☐ .5M	☐ .7M	☐ .6M	☐ .4M	☐ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: N/A Enter on the summary page on the Water Storage row.

Comments:

iii. Potential Property Protection

Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (check)? ☐ **Y** ☐ **N** (This information will be used later.)

Comments:

14E. **Sediment/Nutrient/Toxicant Retention and Removal:** (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are, or with the planned project will be, subject to such input, check ☐ **NA** here and proceed to 14F.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	*AA receives or surrounding land use (including proposed future land use) has potential to deliver levels of sediments, nutrients, or toxicants at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication are present, or sources are suspected.*				*Waterbody is on Alaska's Section 303(d) List of Impaired Waterbodies or AA receives or surrounding land use has potential to deliver high levels of sediments, nutrients, or toxicants such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, unnatural turbidity, or signs of eutrophication are present.*			
% cover of vegetation in AA	≥ 70%		< 70%		≥ 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
*AA contains **no or restricted outlet***	☐ 1H	☐ .8H	☐ .7M	☐ .5M	☐ .5M	☐ .4M	☐ .3L	☐ .2L
*AA contains **unrestricted outlet***	☐ .9H	☒ .7M	☐ .6M	☐ .4M	☐ .4M	☐ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: 0.7M Enter on the summary page on the Sediment/Nutrient/Toxicant Retention row.
Comments:

14F. Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14F does not apply, check ☒ **NA** here and proceed to 14G.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating)

For the wetland area subjected to erosive forces, % cover of species with deep, soil-binding root masses	***Duration of surface water adjacent to rooted vegetation in the AA***		
	Permanent / Perennial	***Seasonal / Intermittent***	***Temporary / Ephemeral***
≥ 65%	☐ 1H	☐ .9H	☐ .7M
35-64%	☐ .7M	☐ .6M	☐ .5M
< 35%	☐ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: N/A
Enter on the summary page on the Sediment/Shoreline Stabilization row.
Comments:

14G. Production Export/Terrestrial and Aquatic Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings from 14B and 14C [check appropriate box in matrix])

General Fish Habitat Rating (14C.iii.)	***General Wildlife Habitat Rating (14B.iii.)***		
	E/H	***M***	***L***
E/H	☐ H	☐ H	☐ M
M	☐ H	☐ M	☐ M
L	☐ M	☐ M	☐ L
NA	☐ M	☒ M	☐ L

ii. Rating Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating.
Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14G.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as defined under #10 above, and A = "absent")

A	***Vegetated component >5 acres***						***Vegetated component 1-5 acres***						***Vegetated component <1 acre***					
B	***High***		***Moderate***		***Low***		***High***		***Moderate***		***Low***		***High***		***Moderate***		***Low***	
C	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***
P/P	☐ 1H	☐ .7M	☐ .8H	☐ .5M	☐ .6M	☐ .4M	☐ .9H	☐ .6M	☐ .7M	☐ .4M	☐ .5M	☐ .3L	☐ .8H	☐ .6M	☐ .6M	☐ .4M	☐ .3L	☐ .2L
S/I	☐ .9H	☐ .6M	☐ .7M	☐ .4M	☐ .5M	☐ .3L	☐ .8H	☐ .5M	☐ .6M	☐ .3L	☐ .4M	☐ .2L	☐ .7M	☐ .5M	☐ .5M	☐ .3L	☐ .3L	☐ .2L
T/E or A	☐ .8H	☐ .5M	☐ .6M	☒ .3L	☐ .4M	☐ .2L	☐ .7M	☐ .4M	☐ .5M	☐ .2L	☐ .3L	☐ .1L	☐ .6M	☐ .4M	☐ .4M	☐ .2L	☐ .2L	☐ .1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.)
A **Vegetated Upland Buffer** is an area with ≥ 30% plant cover, ≤ 2% noxious or invasive plant cover, and that is not subjected to periodic mowing or clearing (unless for weed control).
a) Is there an average ≥50-foot-wide vegetated upland buffer around ≥75% of the AA circumference?

☐**Y** ☒**N** *If yes, add 0.1 to the score in **14G.ii.** above and adjust the rating accordingly:* ______

iv. Final Score and Rating: 0.3L Enter on the summary page on the Production Export row.

Comments:

14H. Groundwater Discharge/Recharge: (Check the appropriate indicators in i. and ii. below.)

i. Discharge Indicators

- ☐ The AA is a slope wetland (HGM type)
- ☐ Springs or seeps are known or observed
- ☐ Vegetation growing during dormant season
- ☐ Wetland occurs at the toe of a natural slope
- ☐ AA permanently flooded during dry periods
- ☐ Wetland contains an outlet, but no inlet
- ☐ Other: ______

ii. Recharge Indicators ☐ **(NA for fringe wetlands)**

- ☐ Permeable substrate present without underlying impeding layer
- ☐ Wetland contains inlet but no outlet
- ☐ Stream is a known 'losing' stream; discharge decreases downstream
- ☐ Other: ______

iii. Rating (use the information from i. and ii. above and the table below to arrive at [check] the functional points and rating)

Criteria	***Duration of saturation at AA wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM***			
	P/P	***S/I***	***T/E***	***None***
Groundwater discharge or recharge indicators exist	☐ 1H	☐ .7M	☐ .4M	☐ .1L
Permafrost underlies the wetland or insufficient information exists	☒ NA			

iv. Final Score and Rating: N/A Enter on the summary page on the Groundwater Discharge/Recharge row.

Comments:

14I. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating)

Replacement potential	***AA contains irreplaceable wetland types [fens, bogs, springs, seeps, or mature forested wetland type] OR a plant association listed as S1, S2, G1, or G2 by the AKNHP (Appendix J)***			***AA does not contain irreplaceable wetland types and structural diversity (#13) is high OR contains plant association listed as S3, G3, S?, or G? by the AKNHP (Appendix J)***			***AA does not contain irreplaceable wetland types and structural diversity (#13) is low to moderate (Appendix J)***		
Estimated relative abundance of wetland types (from 11)	***rare***	***common***	***abundant***	***rare***	***common***	***abundant***	***rare***	***common***	***abundant***
Low disturbance at AA (from 12i and ii)	☐ 1H	☐ .6M	☐ .5M	☐ .8H	☐ .5M	☐ .4M	☐ .7M	☐ .4M	☒ .3L
Moderate disturbance at AA (from 12i and ii)	☐ .9H	☐ .5M	☐ .4M	☐ .7M	☐ .4M	☐ .3L	☐ .6M	☐ .3L	☐ .2L
High disturbance at AA (from12i and ii)	☐ .7M	☐ .3L	☐ .2L	☐ .5M	☐ .2L	☐ .1L	☐ .4M	☐ .1L	☐ .1L

ii. Final Score and Rating: 0.3L Enter on the summary page on the Uniqueness row.

Comments:

14J. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential recreation or education site: (check) ☒**Y** ☐ **N** (if 'Yes' continue with the evaluation; if 'No' then check ☐ **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA:

☐ Educational/scientific study ☒ Consumptive recreation ☒ Non-consumptive recreation ☐ Other ______

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

Known or Potential Recreation or Education Area	***Known***	***Potential***
Public ownership or public easement with general public access (no permission required)	☐ .2H	☐ .15H
Private ownership with general public access (no permission required)	☐ .15H	☒ .1M
Private or public ownership without general public access, or requiring permission for public access	☐ .1M	☐ .05L

iv. Final Score and Rating: 0.1M Enter on the summary page on the Recreation/Education Potential row.

Comments:

General Site Notes:
Native Corps lands with access for berry picking and snowmachining.

FUNCTION AND SERVICE SUMMARY AND OVERALL RATING FOR WETLAND AA #(s): 2, Flat

Functions and Services	Rating (E, H, M, L)	Actual Functional Points (0 to 1.0)	Possible Functional Points	Optional: Functional Units Affected (Actual Points x AA Acreage Affected)	Indicate the four most prominent functions with a check
A. Habitat for Federally Listed/Candidate T&E Species or Other Species of Concern	L	0	1.0		☐
B. General Wildlife Support	M	0.7	1.0		☒
C. General Fish Support	N/A	N/A	N/A		☐
D. Water Storage	N/A	N/A	N/A		☐
E. Sediment/Nutrient/Toxicant Removal	M	0.7	1.0		☒
F. Sediment/Shoreline Stabilization	N/A	N/A	N/A		☐
G. Production Export/Food Chain Support	L	0.3	1.0		☒
H. Groundwater Discharge/Recharge	N/A	N/A	N/A		☐
I. Uniqueness	L	0.3	1.0		☒
J. Recreation/Education Potential (bonus points)	M	0.1	NA		☐
Totals:		2.1	5.0		
Percent of Possible Score (actual points divided by possible points)		42%			

Category 1 Wetland: Must satisfy **one** of the following criteria; otherwise go to Category 2
- ☐ Score of 0.9 to 1 functional point for Threatened or Endangered Species or Other Species of Concern; **or**
- ☐ Score of 0.9 or 1 functional point for Uniqueness; **or**
- ☐ Score of 0.9 or 1 functional point for Water Storage **and** answer to Question 14Dii is "yes"; **or**
- ☐ Score of 0.9 or 1 functional point for General Fish Support; **or**
- ☐ Percent of possible score ≥ 70% (round to nearest whole number); or
- ☐ Percent of possible score ≥ 50% **and** 6th level hydrologic unit has already experienced ≥15% land development.

Category 2 Wetland: Criteria for Category 1 not satisfied **and** meets any **one** of the following criteria; otherwise go to Category 4
- ☐ Score of 0.8 functional point for Threatened or Endangered Species or Other Species of Concern; **or**
- ☐ Score of 0.9 or 1 functional point for General Wildlife Support; **or**
- ☐ Score of 0.6 to 0.8 functional point for General Fish Support; **or**
- ☐ Score of 0.8 functional point for Uniqueness; **or**
- ☐ Score 0.7 or 0.8 functional point for Water Storage **and** answer to Question 14Dii is “yes”; **or**
- ☐ Percent of possible score ≥ 50% (round to nearest whole number).

Category 3 Wetland: Criteria for Categories 1, 2, and 4 are not satisfied
- ☒ Does not qualify as Category 1, 2, or 4

Category 4 Wetland: Criteria for Categories 1 and 2 not satisfied **and** all of the following criteria are met; if not, go to Category 3
- ☐ Vegetated <u>wetland</u> component of AA < 1 acre (do <u>not</u> include upland vegetated buffer); **and**
- ☐ Score of 0.5 or lower for Uniqueness; **and**
- ☐ General Wildlife Support is 0.4 or lower; **and**
- ☐ General Fish Support score is 0.3 or lower; **and**
- ☐ If answer to 14Dii is “no”, score for Water Storage is 0.2, 0.1, or NA; **and**
- ☐ Is not rated “High” for any function or service; **and**
- ☐ Percent of possible score < 35% (round to nearest whole number).

OVERALL ASSESSMENT AREA RATING: (check appropriate category based on the criteria outlined above)

Category: ☐**1** ☐**2** ☒**3** ☐**4**

Appendix A
Wetland Assessment Data Form

<u>Digital Form</u> – Use only if completing on a computer. Otherwise, use form in AKWAM manual. Use this form to assess areas that are primarily wetlands (versus waterbodies). For waterbodies, use the Waterbody Categorization Form.

1. **Project name and ADOT&PF #:** St Marys Airport Improvements **2. Assessment Area #(s):** 3, Slope
3. **Evaluation date:** Mo. 6 Day 22 Yr. 2021
4. **Evaluator(s) and affiliation:** JRG, DOWL
5. **Purpose of evaluation:**

☒ Wetland/waterbody potentially affected by a proposed project ☐ Mitigation wetlands; pre-construction
☐ Mitigation wetlands; post-construction ☐ Other ______

6. **Wetland location(s):**

Legal: T. ______ R. ______; S. ______; and T. ______; R. ______ ; S. ______ ; ______ Meridian

Approx. stationing or mileposts or pertinent project component: See Figures

Lat. (dec. deg.)**:** ______ **Long.:** ______ **Datum:** NAD 83 **Nearest community:** ______

Watershed: Yukon (smallest named stream), tributary of ______ Ecoregion (from USCOE 2007): ______

7. **Identifying numbers of related data:** wetland determination forms ______ photos ______

GPS waypoint # ______ other ______

Map (#) showing AA: ______ (closely follow the User's Manual instructions for identifying the AA)
Briefly describe the features that define the limits of the AA (e.g., tributary, wetland/upland boundary, extreme low tide elevation)**:**
The AA consists of extensive wetlands located in drainages between flat hgm wetlands, where hydrology comes from precipitation and groundwater.

8. **Wetland size** (total acres, not just AA): ______ acres (visually estimated) or 17.3 acres (measured, e.g., in GIS)

9. **Assessment area (AA) size:** ______ acres (visually estimated) or 17.3 acres (measured)
Acreage of the AA MINUS the part that is waterbody that will be separately assessed using the waterbody form: ______ acres of <u>wetland</u> in AA

10. **Classification of Wetland and Waterbody in the Wetland AA:**

Class (Cowardin)	Water Regime (Cowardin)	Modifier (if any; Cowardin)	% of AA
EM	S/I, T/E		29%
SS	S/I, T/E		62%
FO	S/I		9%
			%
			%

HGM Class (Brinson)	% of AA
Slope	100%
	%
	%
	%

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Flat (**F**), Lacustrine Fringe (**LF**)

Abbreviations:
Cowardin Classes: Forested Wetland (**FO**), Scrub-Shrub Wetland (**SS**), Emergent Wetland (**EM**), Moss-lichen Wetland (**ML**), Aquatic Bed (**AB**), Unvegetated (**UN**)

Water (Inundation) Regimes: Permanent/Perennial (**P/P**), Seasonal/Intermittent (**S/I**), Temporary/Ephemeral/Saturated (**T/E**)

Modifiers: Excavated (**X**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**), Beaver-modified (**B**)

11. **Estimated relative abundance** of similar wetlands within the same 6th level hydrologic unit subregion (see definitions in user's manual)**:**

(check one) ☐ Unknown ☐ Rare ☒ Common ☐ Abundant

What information sources did you use for this estimate?
USFWS National Wetland Inventory

12. General condition of AA:

i. Disturbance (see user's manual for descriptions of disturbance levels; check appropriate box):

Conditions adjacent to AA / *Conditions within AA*	***Predominant conditions adjacent to (within 500 feet of) the AA, plus any area that drains into the AA***		
	Adjacent land is in a natural state	***Adjacent land has experienced minimal or minor disturbance***	***Adjacent land is substantially disturbed***
AA is in a natural state	☐ low disturbance	☒ low disturbance	☐ moderate disturbance
AA has experienced minimal or minor disturbance	☐ moderate disturbance	☐ moderate disturbance	☐ high disturbance
AA is substantially disturbed	☐ high disturbance	☐ high disturbance	☐ high disturbance

Describe the disturbance within the AA (type, age, intensity, source of disturbance, location)**:**

Slope wetlands are found near the St. Mary's Airport, material sites, and along the proposed Marshall Material Site access road.

ii. Consider the 6th level HU containing the AA again. If you estimate that **more than 10% of the land in the 6th level HU is disturbed**, check here ☐, and choose (below) the disturbance level that is one level higher:

☐ low disturbance ☐ moderate disturbance ☐ high disturbance

iii. List any noxious or invasive plant or animal species in the AA or surrounding lands (specify which are in the AA):

N/A

iv. Briefly describe the AA and surrounding land use and habitat types (dominant species, water source, topography, approximate slope, inlets and outlets, land use, relationship to other AAs, adjacent vegetation types and land uses)**:**

Dominant species are Salix alaxensis, Salix pulchra, Calamagrostis canadensis, water source is precip or groundwater, sloping topography 0-5%, saturated and seasonally flooded water regimes, undisturbed land use, mixed between flat HGM assessment areas.

13. Structural Diversity of AA (based on number of simplified Cowardin **vegetated** classes present, listed in #10 above):

Existing # of Cowardin vegetated classes in AA	*Rating*
≥3 classes; or 2 classes if 1 is forested	☒ H
2 classes; or 1 class if forested	☐ M
1 class, and humans do not prevent establishment of additional classes	☐ M
1 class, and humans limit establishment of additional classes	☐ L

14A. Habitat for Federally Listed or Candidate Threatened or Endangered Plants or Animals or Other Species of Concern:

i. AA is Documented (D) or Suspected (S) to contain (check one based on definitions contained in instructions):

Primary or critical habitat (**list species**) ☐ D ☐ S species: ______

Secondary habitat (**list species**) ☐ D ☐ S species: ______

Incidental habitat (**list species**) ☐ D ☐ S species: ______

None or unknown ☒

ii. Rating (use the conclusions from 14A.i. above and the matrix below to arrive at [check] the functional points and rating):

Highest Habitat Level	*doc/ primary*	*sus/ primary*	*doc/ secondary*	*sus/ secondary*	*doc/ incidental*	*sus/ incidental*	*None*
One or more of the species listed in 14A.i. is a federally Listed or Candidate Threatened or Endangered Species	☐ 1H	☐ .8H	☐ .9M	☐ .7M	☐ .3L	☐ .1L	☒ 0L
Species listed 14A.i. are all "Other Species of Concern" (i.e., not listed under the Endangered Species Act)	☐ .8M	☐ .7M	☐ .6M	☐ .5M	☐ .2L	☐ .1L	☒ 0L

Sources for documented or suspected use (e.g., observations, records, etc):

USFWS Information for Planning and Consultation

iii. Final Score and Rating: 0L Enter on the summary page on the Habitat for Federally Listed Species row.

14B. General Wildlife Support Rating:
i. Evidence of overall wildlife use in the AA (check substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- ☐ observations of abundant wildlife #s or high species diversity (during any period)
- ☐ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☐ presence of extremely limiting habitat features not available in the surrounding area
- ☐ interviews with local biologists with knowledge of the AA or its habitat type

Minimal (based on any of the following [check]):
- ☐ few or no wildlife observations during peak use periods
- ☐ little to no wildlife sign
- ☐ sparse adjacent upland food sources
- ☐ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- ☐ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ☒ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ☒ upland food sources exist in moderate quantity
- ☐ interviews with local biologists with knowledge of the AA or its habitat type

ii. Wildlife habitat features Working from top to bottom, check appropriate AA attributes in the matrix to arrive at the rating.
Structural diversity is from question #13.
For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent age of the AA (see #10).
Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent. See instructions for further definitions of these terms.

Structural diversity (from #13)	***High***								***Moderate***								***Low***			
Class cover distribution (all vegetated classes)	***Even***				***Uneven***				***Even***				***Uneven***				***Even***			
Longest duration of surface water in ≥ 10% of AA, or immediately abutting the AA	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***	***P/P***	***S/I***	***T/E***	***A***
***Low** disturbance at AA (see #12i & 12ii)*	☐ E	☐ E	☐ E	☐ H	☐ E	☐ E	☐ H	☐ H	☐ E	☐ H	☒ H	☐ M	☐ E	☐H	☐ M	☐ M	☐ E	☐ H	☐ M	☐ M
***Moderate** disturbance at AA (see #12i & 12ii)*	☐ H	☐ H	☐ H	☐ H	☐ H	☐ H	☐ H	☐ M	☐ H	☐ H	☐ M	☐ M	☐ H	☐ M	☐ M	☐ L	☐ H	☐ M	☐ L	☐ L
***High** disturbance at AA (see #12i & 12ii)*	☐ M	☐ M	☐ M	☐ L	☐ M	☐ M	☐ L	☐ L	☐ M	☐ M	☐ L	☐ L	☐ M	☐ L	☐ L	☐ L	☐ L	☐ L	☐ L	☐ L

iii. Rating (use the conclusions from i. and ii. above and the matrix below to arrive at [check] the functional points and rating)

Evidence of wildlife use (i)	***Wildlife habitat features rating (ii)***			
	Exceptional	***High***	***Moderate***	***Low***
Substantial	☐ 1E	☐ .9H	☐ .8H	☐ .7M
Moderate	☐ .9H	☒ .7M	☐ .5M	☐ .3L
Minimal	☐ .6M	☐ .4M	☐ .2L	☐ .1L

iv. Final Score and Rating: 0.7M Enter on the summary page on the General Wildlife Support row.
Comments:

14C. General Fish Support Rating: (Assess this function if any part of the AA (including the waterbody part of a wetland AA) is used by fish or the existing situation is "correctable" such that the AA could be used by fish. If the AA is not used by fish, fish use is not restorable, or is not desired from a management perspective, then check ☒ **NA** here and proceed to 14D.)

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check] the functional points and rating)

Duration of surface water in AA	***Permanent / Perennial***			***Seasonal / Intermittent***			***Temporary / Ephemeral***		
Aquatic hiding / resting / escape cover in waterbody (Table 3 in manual)	*Optimal*	*Adequate*	*Poor*	*Optimal*	*Adequate*	*Poor*	*Optimal*	*Adequate*	*Poor*
Anadromous salmon species	☐ 1E	☐.8H	☐.6M	☐.9H	☐.7M	☐.5M	☐.7M	☐.5M	☐.3L
Resident and non-salmon sport and subsistence species	☐.9H	☐.7M	☐.5M	☐.8H	☐.6M	☐.4M	☐.6M	☐.4M	☐.2L
Other resident species	☐.8H	☐.6M	☐.4M	☐.7M	☐.5M	☐.3L	☐.5M	☐.3L	☐.1L

Sources used to identify fish species potentially found in AA:

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA precluded or substantially reduced by a culvert, dike, or other man-made structure or activity ***or*** *is the waterbody included on the current Alaska Department of Environmental Conservation list of Category 5 / Section 303(d) Impaired Waterbodies (unless its impaired uses are named and aquatic life is not listed as impaired)?*

☐**Y** ☐**N** *If yes, reduce the score in 14C.i. by 0.1: ______ (If no, do not change the score.)*

b) Do noxious or invasive plant species or invasive fish species (see Appendices F and G) occur in the AA?

☐**Y** ☐**N** *If yes, reduce the score in 14C.i. by 0.1: ______ (If no, do not change the score.)*

iii. Final Score and Rating: N/A Enter on the summary page on the General Fish Support row.

Comments:

14D. **Water Storage:** (Applies to wetlands that flood or pond from overbank flooding, precipitation, or overland flow from uplands. If no wetlands in the AA are subject to inundation or ponding, check ☐ **NA** here and proceed to 14E.)

i. Rating

Estimate the variation in the water volume stored in the **wetland** portion of the AA **that experiences surface ponding or flooding** during the typical year, between break-up and freeze-up. First, identify the part of the AA that is both wetland and has surface water sometime between breakup and freezeup (the "flooded wetland"). Estimate its area in acres: 8.4 acres = A.

Second, estimate the range in that flooded wetland's water surface elevation between its lowest and highest elevation during the unfrozen period, in feet. Call this D for depth: 0.25 feet = D. For example, if the water table is typically one foot below the ground surface during the driest part of summer, and is typically 6 inches above the surface following breakup, the range is 18 inches, or 1.5 feet. Consider evidence such as water marks, staining on vegetation or rocks, drift lines, and the depth to the water table in your soil pit. Consider also the elevation of the wetland surface relative to the elevation of the water surface in an adjacent stream (i.e., does the channel overflow its banks into the wetland?). During a flood, the depth of water over a stream channel is likely to be double its depth when the stream is full to its banks. Consider the area the stream would flood when the water is that deep.

Multiply the range in the flooded wetland's water surface elevation (D) times the area (A) to estimate the maximum storage volume in acre-feet. D 0.25 feet X A 8.4 acres = 2.1 acre-feet. Use this storage volume estimate in the matrix below.

Next, determine the portion of the flooded wetland that is forested, shrub-dominated, or is neither of those but is dominated by hummocks or tussocks at least one foot in height:

% of AA that experiences water surface fluctuation that is forested or scrub/shrub 15%

plus the additional % of the flooded wetland that is hummocky 0%

= 15% of flooded wetland with water-slowing roughness. Use this percentage in the second row of the matrix below.

Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating.

Estimated maximum acre-feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	***>5 acre-feet***			***1 to 5 acre-feet***			***<1 acre-foot***		
% of flooded wetland classified as forested or scrub/shrub or dominated by hummocks > 1 foot tall	*>75%*	*25-75%*	*<25%*	*>75%*	*25-75%*	*<25%*	*>75%*	*25-75%*	*<25%*
AA contains ***no outlet or restricted outlet***	☐ 1H	☐ .9H	☐ .6M	☐ .8H	☐ .7M	☐ .5M	☐ .4M	☐ .3L	☐ .2L
AA contains ***unrestricted outlet***	☐ .9H	☐ .8H	☐ .5M	☐ .7M	☐ .6M	☒ .4M	☐ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: 0.4M Enter on the summary page on the Water Storage row.

Comments:

iii. Potential Property Protection

Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (check)? ☐ **Y** ☒ **N** (This information will be used later.)

Comments:

14E. **Sediment/Nutrient/Toxicant Retention and Removal:** (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are, or with the planned project will be, subject to such input, check ☐ **NA** here and proceed to 14F.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	*AA receives or surrounding land use (including proposed future land use) has potential to deliver levels of sediments, nutrients, or toxicants at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication are present, or sources are suspected.*				*Waterbody is on Alaska's Section 303(d) List of Impaired Waterbodies or AA receives or surrounding land use has potential to deliver high levels of sediments, nutrients, or toxicants such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, unnatural turbidity, or signs of eutrophication are present.*			
% cover of vegetation in AA	≥ 70%		< 70%		≥ 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
*AA contains **no or restricted outlet***	☐ 1H	☐ .8H	☐ .7M	☐ .5M	☐ .5M	☐ .4M	☐ .3L	☐ .2L
*AA contains **unrestricted outlet***	☒ .9H	☐ .7M	☐ .6M	☐ .4M	☐ .4M	☐ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: 0.9H Enter on the summary page on the Sediment/Nutrient/Toxicant Retention row.
Comments:

14F. Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14F does not apply, check ☒ **NA** here and proceed to 14G.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating)

For the wetland area subjected to erosive forces, % cover of species with deep, soil-binding root masses	***Duration of surface water adjacent to rooted vegetation in the AA***		
	Permanent / Perennial	***Seasonal / Intermittent***	***Temporary / Ephemeral***
≥ 65%	☐ 1H	☐ .9H	☐ .7M
35-64%	☐ .7M	☐ .6M	☐ .5M
< 35%	☐ .3L	☐ .2L	☐ .1L

ii. Final Score and Rating: N/A Enter on the summary page on the Sediment/Shoreline Stabilization row.
Comments:

14G. Production Export/Terrestrial and Aquatic Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings from 14B and 14C [check appropriate box in matrix])

General Fish Habitat Rating (14C.iii.)	***General Wildlife Habitat Rating (14B.iii.)***		
	E/H	***M***	***L***
E/H	☐ H	☐ H	☐ M
M	☐ H	☐ M	☐ M
L	☐ M	☐ M	☐ L
NA	☐ M	☒ M	☐ L

ii. Rating Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating.
Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14G.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as defined under #10 above, and A = "absent")

A	***Vegetated component >5 acres***						***Vegetated component 1-5 acres***						***Vegetated component <1 acre***					
B	***High***		***Moderate***		***Low***		***High***		***Moderate***		***Low***		***High***		***Moderate***		***Low***	
C	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***	***Yes***	***No***
P/P	☐ 1H	☐ .7M	☐ .8H	☐ .5M	☐ .6M	☐ .4M	☐ .9H	☐ .6M	☐ .7M	☐ .4M	☐ .5M	☐ .3L	☐ .8H	☐ .6M	☐ .6M	☐ .4M	☐ .3L	☐ .2L
S/I	☐ .9H	☐ .6M	☐ .7M	☐ .4M	☐ .5M	☐ .3L	☐ .8H	☐ .5M	☐ .6M	☐ .3L	☐ .4M	☐ .2L	☐ .7M	☐ .5M	☐ .5M	☐ .3L	☐ .3L	☐ .2L
T/E or A	☐ .8H	☐ .5M	☒ .6M	☐ .3L	☐ .4M	☐ .2L	☐ .7M	☐ .4M	☐ .5M	☐ .2L	☐ .3L	☐ .1L	☐ .6M	☐ .4M	☐ .4M	☐ .2L	☐ .2L	☐ .1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.)

A **Vegetated Upland Buffer** is an area with ≥ 30% plant cover, ≤ 2% noxious or invasive plant cover, and that is not subjected to periodic mowing or clearing (unless for weed control).

a) Is there an average ≥50-foot-wide vegetated upland buffer around ≥75% of the AA circumference?

☐**Y** ☒**N** *If yes, add 0.1 to the score in **14G.ii.** above and adjust the rating accordingly:* ______

iv. Final Score and Rating: 0.6M Enter on the summary page on the Production Export row.

Comments:

14H. **Groundwater Discharge/Recharge:** (Check the appropriate indicators in i. and ii. below.)

i. Discharge Indicators

- ☒ The AA is a slope wetland (HGM type)
- ☒ Springs or seeps are known or observed
- ☐ Vegetation growing during dormant season
- ☒ Wetland occurs at the toe of a natural slope
- ☐ AA permanently flooded during dry periods
- ☐ Wetland contains an outlet, but no inlet
- ☐ Other: ______

ii. Recharge Indicators ☐ **(NA for fringe wetlands)**

- ☒ Permeable substrate present without underlying impeding layer
- ☐ Wetland contains inlet but no outlet
- ☐ Stream is a known 'losing' stream; discharge decreases downstream
- ☐ Other: ______

iii. Rating (use the information from i. and ii. above and the table below to arrive at [check] the functional points and rating)

Criteria	*Duration of saturation at AA wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
	P/P	***S/I***	***T/E***	***None***
Groundwater discharge or recharge indicators exist	☒ 1H	☐ .7M	☐ .4M	☐ .1L
Permafrost underlies the wetland or insufficient information exists	☐ NA			

iv. Final Score and Rating: 1H Enter on the summary page on the Groundwater Discharge/Recharge row.

Comments:

No permafrost or gravelly beneath soil surface.

14I. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating)

Replacement potential	***AA contains irreplaceable wetland types [fens, bogs, springs, seeps, or mature forested wetland type] OR a plant association listed as S1, S2, G1, or G2 by the AKNHP (Appendix J)***			***AA does not contain irreplaceable wetland types and structural diversity (#13) is high OR contains plant association listed as S3, G3, S?, or G? by the AKNHP (Appendix J)***			***AA does not contain irreplaceable wetland types and structural diversity (#13) is low to moderate (Appendix J)***		
Estimated relative abundance of wetland types (from 11)	***rare***	***common***	***abundant***	***rare***	***common***	***abundant***	***rare***	***common***	***abundant***
<u>Low</u> disturbance at AA (from 12i and ii)	☐ 1H	☐ .6M	☐ .5M	☐ .8H	☐ .5M	☐ .4M	☐ .7M	☒ .4M	☐ .3L
<u>Moderate</u> disturbance at AA (from 12i and ii)	☐ .9H	☐ .5M	☐ .4M	☐ .7M	☐ .4M	☐ .3L	☐ .6M	☐ .3L	☐ .2L
<u>High</u> disturbance at AA (from12i and ii)	☐ .7M	☐ .3L	☐ .2L	☐ .5M	☐ .2L	☐ .1L	☐ .4M	☐ .1L	☐ .1L

ii. Final Score and Rating: 0.4M Enter on the summary page on the Uniqueness row.

Comments:

14J. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential recreation or education site: (check) ☐**Y** ☐ **N** (if 'Yes' continue with the evaluation; if 'No' then check ☒ **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA:

☐ Educational/scientific study ☐ Consumptive recreation ☐ Non-consumptive recreation ☐ Other ______

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

Known or Potential Recreation or Education Area	***Known***	***Potential***
Public ownership or public easement with general public access (no permission required)	☐ .2H	☐ .15H
Private ownership with general public access (no permission required)	☐ .15H	☐ .1M
Private or public ownership without general public access, or requiring permission for public access	☐ .1M	☐ .05L

iv. Final Score and Rating: N/A Enter on the summary page on the Recreation/Education Potential row.

Comments:

General Site Notes:

FUNCTION AND SERVICE SUMMARY AND OVERALL RATING FOR WETLAND AA #(s): 3, Slope

Functions and Services	Rating (E, H, M, L)	Actual Functional Points (0 to 1.0)	Possible Functional Points	Optional: Functional Units Affected (Actual Points x AA Acreage Affected)	Indicate the four most prominent functions with a check
A. Habitat for Federally Listed/Candidate T&E Species or Other Species of Concern	L	0	1.0		☐
B. General Wildlife Support	M	0.7	1.0		☒
C. General Fish Support	N/A	N/A	N/A		☐
D. Water Storage	M	0.4	1.0		☐
E. Sediment/Nutrient/Toxicant Removal	H	0.9	1.0		☒
F. Sediment/Shoreline Stabilization	N/A	N/A	N/A		☐
G. Production Export/Food Chain Support	M	0.6	1.0		☒
H. Groundwater Discharge/Recharge	H	1.0	1.0		☒
I. Uniqueness	M	0.4	1.0		☐
J. Recreation/Education Potential (bonus points)	N/A	N/A	NA		☐
Totals:		4.0	7.0		
Percent of Possible Score (actual points divided by possible points)		57%			

Category 1 Wetland: Must satisfy **one** of the following criteria; otherwise go to Category 2
☐ Score of 0.9 to 1 functional point for Threatened or Endangered Species or Other Species of Concern; **or**
☐ Score of 0.9 or 1 functional point for Uniqueness; **or**
☐ Score of 0.9 or 1 functional point for Water Storage **and** answer to Question 14Dii is "yes"; **or**
☐ Score of 0.9 or 1 functional point for General Fish Support; **or**
☐ Percent of possible score ≥ 70% (round to nearest whole number); or
☐ Percent of possible score ≥ 50% **and** 6th level hydrologic unit has already experienced ≥15% land development.

Category 2 Wetland: Criteria for Category 1 not satisfied **and** meets any **one** of the following criteria; otherwise go to Category 4
☐ Score of 0.8 functional point for Threatened or Endangered Species or Other Species of Concern; **or**
☐ Score of 0.9 or 1 functional point for General Wildlife Support; **or**
☐ Score of 0.6 to 0.8 functional point for General Fish Support; **or**
☐ Score of 0.8 functional point for Uniqueness; **or**
☐ Score 0.7 or 0.8 functional point for Water Storage **and** answer to Question 14Dii is “yes”; **or**
☒ Percent of possible score ≥ 50% (round to nearest whole number).

Category 3 Wetland: Criteria for Categories 1, 2, and 4 are not satisfied
☐ Does not qualify as Category 1, 2, or 4

Category 4 Wetland: Criteria for Categories 1 and 2 not satisfied **and** all of the following criteria are met; if not, go to Category 3
☐ Vegetated wetland component of AA < 1 acre (do not include upland vegetated buffer); **and**
☐ Score of 0.5 or lower for Uniqueness; **and**
☐ General Wildlife Support is 0.4 or lower; **and**
☐ General Fish Support score is 0.3 or lower; **and**
☐ If answer to 14Dii is “no”, score for Water Storage is 0.2, 0.1, or NA; **and**
☐ Is not rated “High” for any function or service; **and**
☐ Percent of possible score < 35% (round to nearest whole number).

OVERALL ASSESSMENT AREA RATING: (check appropriate category based on the criteria outlined above)

Category: ☐**1** ☒**2** ☐**3** ☐**4**

APPENDIX F:

SUMMARY OF CONSULTATION AND COORDINATION

From: Jensen, Melissa L (DOT)
To: Emily Creely
Subject: [EXT] Fwd: Z605630000 Saint Marys Airport Improvements Project Scoping Request
Date: Friday, May 07, 2021 10:18:17 AM
Attachments: Scoping Letter 2021_0505.pdf
Preliminary Research 2021_0428 (1).docx
Saint Marys Airport Improvements Project Scoping Figures.pdf

WARNING: External Sender - use caution when clicking links and opening attachments.

Begin forwarded message:

From: "Jensen, Melissa L (DOT)" <melissa.jensen@alaska.gov>
Date: May 7, 2021 at 9:07:00 AM AKDT
To: ak-airport-env@faa.gov, ak-airport-env@faa.gov, douglass_cooper@fws.gov, matthew.eagleton@noaa.gov, sean.mcdermott@noaa.gov, regpagemaster@usace.army.mil, "Heil, Cynthia L (DEC)" <cindy.heil@alaska.gov>, "Lomax, Terri J (DEC)" <terri.lomax@alaska.gov>, "Gleason, Erin P (DEC)" <erin.gleason@alaska.gov>, "Estensen, Jeff L (DFG)" <jeff.estensen@alaska.gov>, "Brase, Audra L (DFG)" <audra.brase@alaska.gov>, "Ortiz, Liz M (DNR)" <liz.ortiz@alaska.gov>, "Proulx, Jeanne A (DNR)" <jeanne.proulx@alaska.gov>, algaaciq@yahoo.com, ksmcityclerk@yahoo.com, waltonksm@yahoo.com, matt99632@yahoo.com, cityofmarshall@yahoo.com, David Herbert <dherbert@smcsd.us>, billya47@gmail.com, tkuhns@calistacorp.com, algaaciq@yahoo.com, atcoperations@gci.net, pitkaspoint@yahoo.com, yupiit.of.andreafski@gmail.com, yupiit.of.andreafski@gmail.com, KDelaCruz@avcp.org, info@avcp.org, info@azachorok.com, pitkaspointnc@yahoo.com, marshalltc.manager@gmail.com, office@maserculiq.com, sbusch@smnc.net, "Johnston, Christopher F (DOT)" <chris.johnston@alaska.gov>, "Kromrey, Lindsey L (DOT)" <lindsey.kromrey@alaska.gov>, "Nelson, Brett D (DOT)" <brett.nelson@alaska.gov>, "Weingarth, Erik S (DOT)" <erik.weingarth@alaska.gov>, "Schaeffer, Calvin C (DOT)" <calvin.schaeffer@alaska.gov>, "Beck, Albert M L (DOT)" <albert.beck@alaska.gov>, community@flygrant.com, rzerkel@lynden.com, cfomai@nac.aero, reverts@evertsair.com, rob@ravnalaska.com, Lee Ryan <lryan.air@gmail.com>
Subject: Z605630000 Saint Marys Airport Improvements Project Scoping Request

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary's Airport Improvements project, State Project Number #Z605630000. The DOT&PF anticipates that construction of this project could begin in 2022.

DOT&PF is requesting scoping comments to support preparation of an environmental document for the proposed project in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Please identify any environmental, cultural, historic, or subsistence resources you believe may potentially be impacted by the proposed project, and also provide any other information you deem valuable to the environmental documentation process. Your responses will help provide us with the necessary input to develop and design a proposed final project that avoids and minimizes as many potential adverse environmental and human impacts as possible.

If you have any questions or need additional information do not hesitate to ask.

Thanks,
Missy Jensen

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary's Airport Improvements project, State Project Number #Z605630000. The DOT&PF anticipates that construction of this project could begin in 2022. The Saint Mary's airport is approximately 450 air miles west-northwest of Anchorage and 515 air miles southwest of Fairbanks, located in Sections 19, 24, 25, and 30, Township 23 North, Range 76 West, Seward Meridian at latitude 62.056216 North and longitude 163.299444 West (USGS Quadrangle Kwiguk A–3 SW)(see Figure 1).

A brief description of the proposed project is provided below. DOT&PF's preliminarily research on potential environmental impacts and project Figures 1-5 are attached.

Purpose and Need

The purpose of the proposed project is to upgrade existing aviation facilities to meet current FAA standards.

The project is needed as the primary north/south runway (17/35) does not currently meet the FAA Standard of a 600-foot (ft) Runway Safety Area (RSA) length and its surface has degraded over time. The cross-wind runway (6/24) does not currently meet the FAA standard safety area width of 150 ft and its runway surface has degraded over time. All runway and taxiway lighting components and most Navigational Aids are more than 24 years old and at the end of their useful life. Vegetation within the proposed RSA consists of shrubs and trees which would require clearing to support a new embankment. Drainage ditches around the airport facilities would need to be shifted based on the proposed changes in airport layout.

Project Description

The proposed project would include improvements to the Saint Mary's Airport, replacement of lighting, and development of material sites.

Airport Improvements

- Primary north/south runway (17/35) improvements:
  - At the north end of the runway (17), an approximately 415-foot (ft) long and 300-ft wide embankment would be constructed to extend the RSA north of its current endpoint.
  - At the south end of the runway (35), the operational surface would be maintained, but the landing point would be moved north approximately 400 ft.
  - Runway would be resurfaced with new crushed aggregate.
- Cross-wind runway (6/24) improvements:
  - The outer edges of the RSA embankment would be widened by 17.5-ft on each side of runway centerline to meet FAA standards.
  - Runway would be surfaced with new crushed aggregate.
- Taxiways A and B would be resurfaced with new crushed aggregate
- With the exception of the existing asphalt paved portion of the main apron, all other operational surfaces at the airport would be resurfaced with new crushed aggregate.
  - The asphalt paved section of the apron would be repaved. The asphalt pavement's location, materials, and dimensions would remain the same.

- The airfield's existing drainage ditches and culverts would be evaluated for potential drainage improvements.
- Vegetation within the airport property, immediately adjacent to the runways would be cleared as needed for new embankment construction.
- After the new crushed aggregate is installed a dust palliative would be applied.

Lighting Improvements

- All runway and taxiway lighting components on the airport, including most Navigational Aids would be replaced.
- The existing Runway 17 approach lighting system would be permanently removed.
- The segmented circle and lighted wind cone would be replaced, as would the supplement wind cone on the cross-wind runway.

Material Sites

A number of potential material sources are currently being investigated for use by this project. The following options (shown on Figures 3-5) will be included in the environmental review of the project:

- Obtain material from existing, permitting material sites in Saint Mary's (Figure 3).
- Obtain material from an existing commercial source in Nome and transport via barge to Saint Mary's. This would require development of a temporary barge landing at the borealis fish camp to allow material to be transported up the Yukon River Access Road, approximately 1.3 miles to the airport. Use of this option may require widening of this existing road (Figure 2). The temporary barge landing would consist of using fill to extend an existing pier in the Yukon River approximately 100 ft.
- Develop a new material site, haul road, and barge landing in Marshall (Figure 4).
- Obtain material from two existing sources in Mountain Village and transport material over the existing Mountain Village-Saint Mary's road approximately 15 miles between the two communities. This option may require minor improvements to the existing road (Figure 5).

Environmental Documentation

An Environmental Assessment (EA), which includes a discussion of alternatives previously scoped in 2018, is being prepared for the project. The EA would evaluate an action and no-action alternative relative to the social, economic, and environmental effects. The EA would also discuss foreseeable future plans related to material site development to adequately assess cumulative impacts. As presently envisioned, DOT&PF anticipates impacts to resources (see attached Preliminary Research Results), but through avoidance, minimization, and mitigation measures does not anticipate significant resource impacts. FAA has determined an EA is the appropriate level of environmental documentation.

The DOT&PF is requesting this early coordination in preparation for completing the EA. It's important to the DOT&PF and FAA that you have an opportunity to provide comments, recommendations, or concerns to ensure that all factors are considered in the development of this proposed project.

If you would like to be sent a paper copy of these documents, provide comments, or request a public hearing please contact chris.johnston@alaska.gov, P.E. at the address below by June 7, 2021.

To ensure that all factors are considered in the development of the EA, please provide your written comments and/or recommendations and the additional requested information to our office no later than June 7, 2021.

Should you have any questions, please feel free to call our environmental consultant, Emily Creely at DOWL Engineers, at (907) 562-2000, or by e-mail at ecreely@dowl.com, or the DOT&PF project manager, Christopher Johnston, at (907) 451-2322.

Sincerely,

Melissa Jensen

Melissa L. Jensen
Environmental Coordinator

Enclosures:
Figure 1: Project Location & Vicinity
Figure 2: Proposed Airport Improvements
Figure 3: Saint Mary's Project Area and Existing Material Sites
Figure 4: Potential New Marshall Material Site and Access Road
Figure 5: Existing Mountain Village Material Sites and Access Road
Preliminary Research Results

Preliminary Environmental Research

Saint Mary's Airport ImprovementsProject Number: Z605630000

Preliminary research has been conducted using the most current available data from state and federal agencies to identify environmental resources within the proposed project area. The purpose of the preliminary research is to assist in identifying permitting and regulatory requirements and to ensure all environmental considerations are used in developing the proposed project.

Environmental resources were identified in accordance with Federal Aviation Administration's (FAA) EnvironmentalImpacts: Policies and Procedures Order 1050.1F and FAA's National Environmental Policy Act Implementing Instructions for Airport Actions Order 5050.4b.

Resources that differ between potential material site options are described accordingly.

Air Quality

According to Alaska Administrative Code (AAC) 18 AAC 50, Saint Mary's, Marshall, and Mountain Village are considered a Class II area. As such, there are designated maximum allowable increases for particulate matter 10 (PM_{10}) micrometersor less in size, nitrogen dioxide, and sulfur dioxide. Activities in these areas must operate in such a waythat they do not exceed listed air quality controls for these compounds (Alaska Department of Environmental Conservation [ADEC] 2021a).

The project area is not located within or near an area defined by ADEC as a Nonattainment or Maintenance Area, or within an area that regularly exceeds or is near violating the health-based National Ambient Air Quality Standards. The community of Saint Mary's was included on the list of communities reporting people are highly affected by dust (PM_{10}) on the 2010 Rural Dust Survey (ADEC 2021a).

Biological Resources

Fish

A review of the Alaska Department of Fish and Game (ADF&G) Catalog of *Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* identified two rivers, the Yukon River (#334-20-11000) and the Andreafsky River (# 334-20-11000-2451) as anadromous. Marshall is located on the Poltes Slough (#334-20-11000-2375), which is connected to the Yukon River, and is listed as an anadromous waterway. The Yukon River supports all five species of salmon (*Oncorhynchus sp*.) as well as Arctic Char (*Salvelinus alpinus*), Arctic Lamprey (*Lethenteron camtschaticum*), Sheefish (*Stendous leucichthys* nelma [*Pallas*]), and Whitefish (*Coregonus clupeaformis*) (ADF&G 2021a). The Andreafsky River is located approximately 2 miles east of the project area and contains the samespecies as the Yukon River except arctic lamprey (*L. camtschaticum*) (ADF&G 2021a).

Eagles and Eagle Nests

According to ADF&G, the range of bald eagles extends over the project area, but the western extent of the golden eagle range is to the east of the project area (ADF&G 2021b). According to the US Fish and Wildlife Service (USFWS), the nearest documented bald eagle nest is approximately 96 miles to the east (USFWS 2021a). If an eagle or eagle's nest is identified within 660 feet ofa project area, consultation with USFWS may be required. In addition, the project may be required to follow guidance, as outlined in the *National Bald Eagle Management Guidelines.*

Threatened and Endangered Species

According to the USFWS's Information for Planning and Conservation (IPaC) decision support tool, there are no species listed as threatened or endangered under the Endangered Species Act (ESA) that occur within the project area (USFWS 2021b).

Migratory Bird Habitat

According to USFWS's IPaC decision support tool, no migratory birds of concern are expected to occur within the project area. To avoid adverse impacts to migratory birds, vegetation clearing will follow the USFWS *Recommended Time Periods for Avoiding Vegetation Clearing in Alaska* in order to protect migratory birds as well as the most appropriate clearing methods to avoid impacts to nesting migratory species (USFWS 2020).

For the Yukon-Kuskokwim Delta ecoregion the following vegetation clearing avoidance periods apply (USFWS 2021c):

- Forest or Woodland - May 1 through July 15
- Shrub or open habitat – May 5 through July 25

If working in shrub or open habitat (i.e. marsh, pond, tundra, gravel, or other treeless/shrubless ground habitat) the following time periods to avoid vegetation clearing may be expanded where the following species are present (USFWS 2020b):

- Raptors which may nest two or more months earlier than other birds.
- Canada geese and swans which begin nesting April 20.
- Black scoters which are known to nest through August 10.

Marine Mammals

Although uncommon, resident have observed beluga whales further upriver, as far as Hughes and even near Nenana (ADF&G 2021c). Unlike the Cook Inlet beluga population which cannot be hunted due to its endangered status, a beluga that swims upriver is not subject to additional hunting regulations. Belugas found in the Yukon River are likely from the Eastern Bering Sea, which sustains a healthy population and are not listed as a threatened species (AK Public Media 2015).

Landscape

According to Ecoregions of Alaska, the proposed project area is located in the Interior Forested Lowlands and Uplands ecological region (Gallant et al. 1995). This ecoregion is characterized by a patch work of ecological characteristics. Regionwide unifying features include a lack of Pleistocene glaciation, a continental climate, a mantling of undifferentiated alluvium and slope deposits, a predominance of forests dominated by spruce and hardwood species, and a very high frequency of lightning fires. On this backdrop of characteristics is superimposed a finer grained complex of vegetation communities resultingfrom the interplay of permafrost, surface water, fire, local elevational relief, and hillslope aspect (Gallantet al. 1995).

Department of Transportation Act, Section 4(f)

Review of the U.S. Bureau of Land Management, U.S. Forest Service, National Park Service, and the Alaska Department of Natural Resources (ADNR) websites indicate there are no state Recreation Areas, Critical Habitat Areas, or public parks in the vicinity of the proposed project.

A review of the USFWS's National Wildlife Refuges System identified the project as being located within the boundaries of the Yukon Delta National Wildlife Refuge (NWR) within inholdings owned by the State of Alaska and/or native corporations. The Andreafsky Wilderness area is located approximately 14.5 miles north of the proposed project in Saint Mary's and approximately 155 miles northeast of Marshall

(USFWS 2021c).

<u>Hazardous Material, Solid Waste, and Pollution Prevention</u>

Saint Mary's Project Area

According to ADEC's contaminated sites database, there are two known contaminated sites located within the project area. The first site, located west of the runway and known as FAA Saint Mary's Consolidated Bldg (Hazard ID 3052), involved the decommissioning and removal of four non-regulated heating oil tanks in June 1998. Contaminates sampled from soils surrounding the tanks showed contamination but met the cleanup levels with the exception of one detection of benzene below the ground surface. Since benzene was not found at shallower depths and there are no other contaminants of concern exceeding the cleanup levels, the ADEC believes that this soil contamination is limited and does not present an unacceptable risk to human health or the environment. Ground water monitoring isongoing at this site (ADEC 2020b).

The second active contaminated site, located on the existing airport apron, known as MarkAir – Saint Mary's Airport (Hazard ID 1878), contains aviation gas contamination on property leased from Alaska Department of Transportation and Public Facilities (DOT&PF). A 1996 Phase II Environmental Site Assessment found a 1000 gallon Diesel above ground storage tank to be a likely spill source. Adjacent lease lots also show signs of historic aviation gasoline and heating oil spills with high levels of diesel range organicsand benzene contamination in soil samples taken at depths 3 to 14 inches below the ground surface.

After an ADEC review of the file in 2009, further work was recommended for the site:

- areas of contaminated soil should be removed to the best extent practical and stockpiled land farmed on site; and
- confirmation soil samples should be collected at the depths of the excavation to verify removal of contaminated soil.

As of September 21, 2012, all former tanks and dispensers have been removed. On-going consultation with ADEC will be conducted during the design phase to determine if contamination may be present in the environment surrounding the project area and whether mitigation measures will need to be implemented during construction.

Marshall Material Site and Access Road

ADEC's contaminated sites database showed three actives sites and one closed site with institutional controls. The three active sites are located approximately 3.5 miles south of the proposed material site and approximately 4.5 miles south of the proposed barge landing. Likelihood of encountering these contaminated sites is very low.

<u>Historical, Architectural, Archaeological, and Cultural Resources</u>

Preliminary APE Description

Based on the nature of the proposed project, a preliminary area of potential effect (APE) includes any areas at the Saint Mary's airport property that will be subject to construction and/or ground disturbing activity, including but not limited to embankment construction and expansion, vegetation clearing, and extension of Runway Safety Areas. The preliminary APE will also include any material source(s) for necessary project aggregate and the associated haul routes and/or existing roads that will be developed or improved to support the transportation of aggregate materials. However, material source options and suitability are still being evaluated as part of the design process. Finally, the preliminary APE will include any potential barge landing locations which may be required in the event that local material sources in

Saint Mary's are not suitable for use, and material must be barged to the project location from upstream or downstream locations.

Initiating consultation with the ADNR's State Historic Preservation Office (SHPO) and other consulting parties per Section 106 of the National Historic Preservation Act (NHPA) will be required during development of the environmental document.

Furthermore, once the Section 106 process has determined if any properties eligible for listing on the National Register of Historic Places (NRHP) are present within the area of potential effect, these historic properties will need to be evaluated under Section 4(f) of the Transportation Act and an applicability determination will need to be completed.

Saint Mary's Project Area

According to the Alaska Heritage Resources Survey (AHRS), there are no previously documented cultural resources or properties within the Saint Mary's project area (Alaska Department of Natural Resources [ADNR], Office of History and Archaeology [OHA] 2021). The Kotlik-Marshall Trail (RS2477 #120) follows the east bank of the Yukon River and bisects the Borealis Fish Camp, however the trail is winter trail only. According to ADNR Division of Mining, Land and Water (ADNR 2021):

> "This trail was improved and maintained by Alaska Road Commission from 1922 to 1947. It was also a winter mail route. A substantial part of the area covered by this trail was reserved as Fort St. Michael in 1897, but returned to general BLM management in 1900. Another substantial part of the area was reserved as Yukon Delta Reservation in 1909, revoked in 1922 and returned to general BLM management until 1968."

In 2018, Northern Land Use Research Alaska, LLC (NLURA) completed a desktop cultural resource study and review of the Saint Mary's project area (NLURA 2018). According to NLURA's research there is one AHRS site adjacent to the project study area located downstream on the Yukon River. Furthermore, NLURA determined that four areas within airport property were previously surveyed for cultural resources. The remainder of the Saint Mary's study area includes undisturbed ground that has not been systematically surveyed for cultural resources.

Marshall Material Site, Access Road, and Barge Landing Area

According to the AHRS, there are no previously documented cultural resources or properties within the potential Marshall material site area, the proposed access road route, or the barge landing area (ADNR, OHA 2021).

Mountain Village Material Sites

According to the AHRS, there are no previously documented cultural resources or properties within the existing Mountain Village material sites and access road (ADNR, OHA 2021).

Land Use

The Saint Mary's project area is primarily located within existing airport property boundaries and is primarily owned by DOT&PF. The material site and storage site are also owned by DOT&PF. Designated land use adjacent to the airport boundary is undeveloped land. In the southwestern portion of the project area, adjacent to the Yukon River, is the Boreal Fisheries Saint Mary's commercial seafood processing and discharge plant. The potential Marshall material site and access road area is located on land conveyed to native corporations.

Natural Resources and Energy Supply

To complete airport upgrades, gravel from a permitted gravel source will be transported to thesite. According to DOT&PF's Material Site Inventory website there are two active sites adjacent the Saint Mary's airport (DOT&PF 2021). Other potential material sources may include locations in Nome, Marshall, or Mountain Village, as described in the scoping letter.

Noise and Noise Compatible Land Use

The existing airport is designated as suitable for use by large aircraft with FAA. Existing noise sources in the area are primarily associated with the airport.

Existing land use surrounding the Saint Mary's airport is undeveloped and minimal conflict between noise and compatible land use is anticipated. The community of Saint Mary's is approximately 3.5 miles away while Pitka's Point is approximately 2 miles away. The project area is located within inholdings of the Yukon Delta NWR, a section 4(f)resource, where special consideration may need to be given to the evaluation of the significance of noise impacts in this area.

A noise analysis is not required, as the proposed airport improvements are not being done to accommodate larger aircraft, and the project is not anticipated to trigger a change to the aircraft fleet mix.

Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks

According to the EPA Environmental Justice Screening and Mapping Tool (EJSCREEN) and 2014-2018 Census Data, 92.7% of the population in Saint Mary's is Alaska Native with the average per capita income in Saint Mary's being $15,009. In Marshall, 99% of the population is Alaska Native with the average per capita income of $9,135 (EPA 2021). Socioeconomic impacts will be considered as part of the EA.

Water Resources

Wetlands and Waters of the U.S.

A review of the USFWS National Wetland Inventory (NWI) and existing aerial imagery indicated the presence of palustrine wetlands within the Saint Mary's project area. Wetlands are present in all undeveloped areas where gravel fill is not currently present. No NWI mapping is available within the Marshall project area, however polygonal wetlands are visible on existing aerial imagery.

The Yukon River is located adjacent to the project area. This river discharges into the Bering Sea and is therefore, defined as a water of the U.S. andsubject the U.S. Army Corps of Engineers (USACE) jurisdiction. A wetland delineation will be completed in both Saint Mary's and Marshall during the summer of 2021 to verify wetland types and functions and values, which will be described in the EA.

Floodplains

The proposed project is located in an unmapped area. Federal Emergency Management Agency (FEMA) has not completed a study to determine flood hazards in Saint Mary's or Marshall; therefore, a flood map has not been published (FEMA 2021). According to the 2018 Hazard Mitigation Plan completed for Saint Mary's, the last flood event occurred in 1989 from a Yukon River ice jam (AECOM 2018). Additionally, a 2016 Disaster Cost Index states that a Spring Flood (declared by Governor Palin on May 6, 2009; FEMA declared under DR-1843 on June 11, 2009) had extensive widespread flooding due to snow melt and destructive river ice jams caused by rapid spring warming combined with excessive snow pack and river ice thickness.

Surface Waters/Navigability

According to the ADNR Alaska Mapper - Navigable Waters website, the USACE, and the U.S. Coast Guard

(USCG), the Yukon River is listed as navigable for its entire length (ADNR 2021, USACE 1995, USCG 2012).

Ground Water

A review of ADEC Drinking Water Protection Areas did not identify any protected drinking area within the project area in both Saint Mary's and Marshall. The ADF&G does maintain an instream water reservation for the Yukon River which starts at the Bering Sea and extends upstream to the confluence of the Innoko River, near the Village Holy Cross. An instream water reservation is a water right that protects specific instream water uses, such as fish spawning or recreation. It sets aside the water necessary for these activities and keeps later water users from appropriating water that may affect the instream activity (ADEC 2021c).

Wild and Scenic River

Saint Mary's is located along the banks of the Andreafsky River. The Andreafsky River, including the East Fork, was designated a National Wild and Scenic River by the Alaska National Interest Lands Conservation Act in 1980. The river received the designation due to itsnatural and free-flowing condition, water quality, wildlife, geology, and primitive setting. This designation covers approximately 265 river miles, of which approximately 198 miles are within designated wilderness (National Wild and Scenic Rivers System 2021). The proposed project is approximately two miles from the river and no construction activities are proposed within the river.

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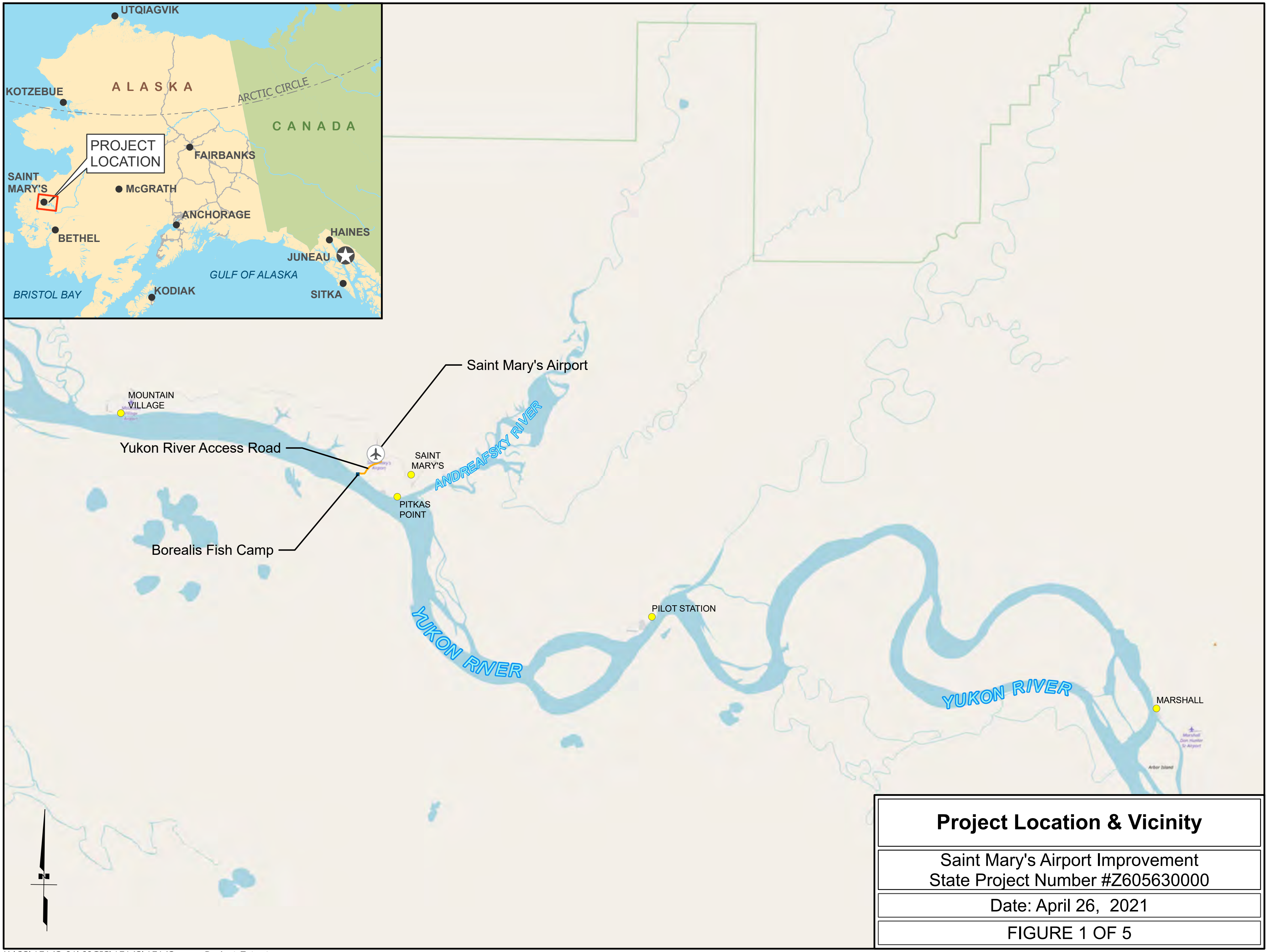


Project Location & Vicinity

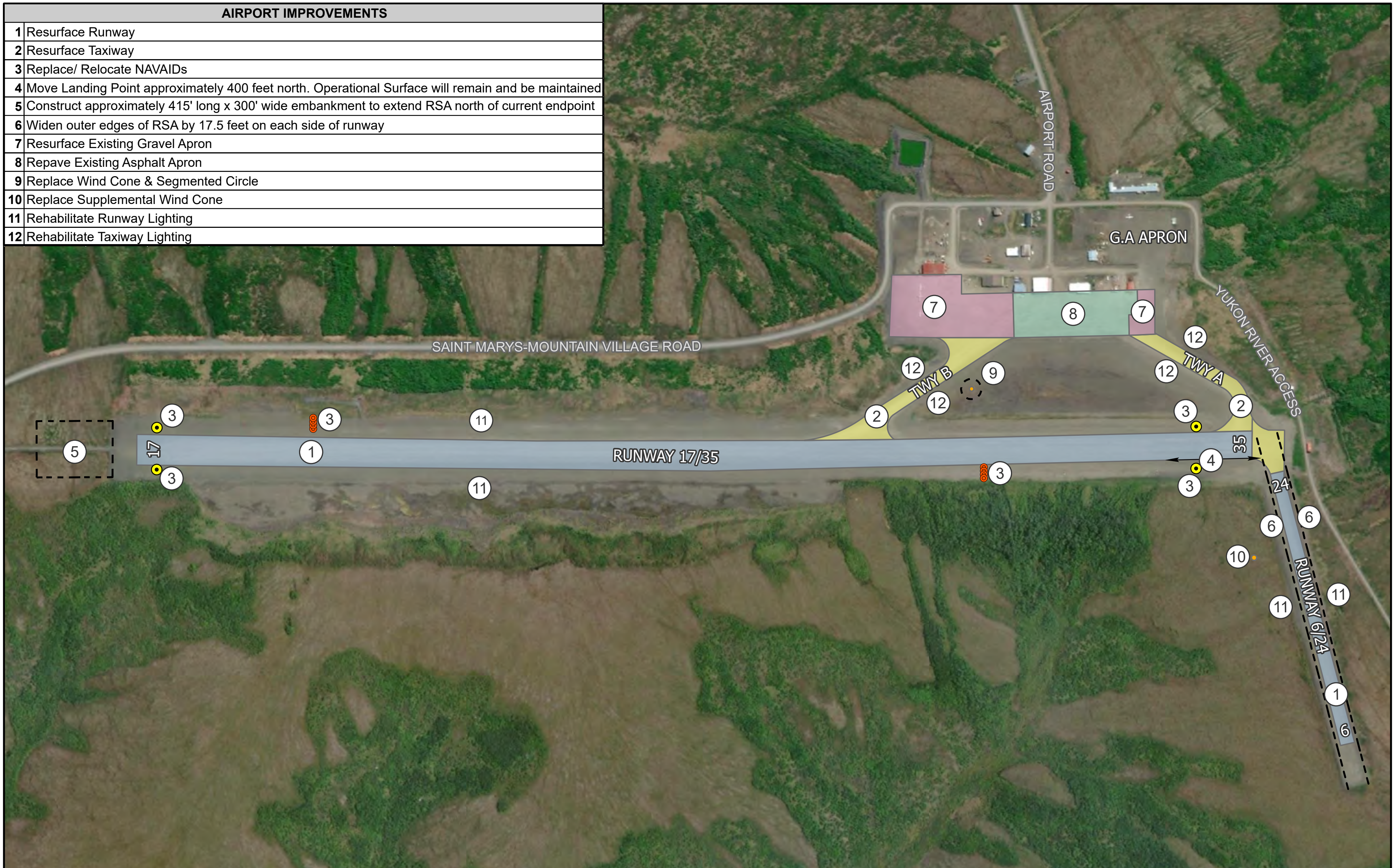
Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: April 26, 2021

FIGURE 1 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Project Extent

AIRPORT IMPROVEMENTS	
1	Resurface Runway
2	Resurface Taxiway
3	Replace/ Relocate NAVAIDs
4	Move Landing Point approximately 400 feet north. Operational Surface will remain and be maintained
5	Construct approximately 415' long x 300' wide embankment to extend RSA north of current endpoint
6	Widen outer edges of RSA by 17.5 feet on each side of runway
7	Resurface Existing Gravel Apron
8	Repave Existing Asphalt Apron
9	Replace Wind Cone & Segmented Circle
10	Replace Supplemental Wind Cone
11	Rehabilitate Runway Lighting
12	Rehabilitate Taxiway Lighting



PAPI
REIL
Gravel Apron
Paved Apron
Taxiway
Wind Cone
Segmented Circle
RSA Extension
Runway

0 190 380 760 Feet

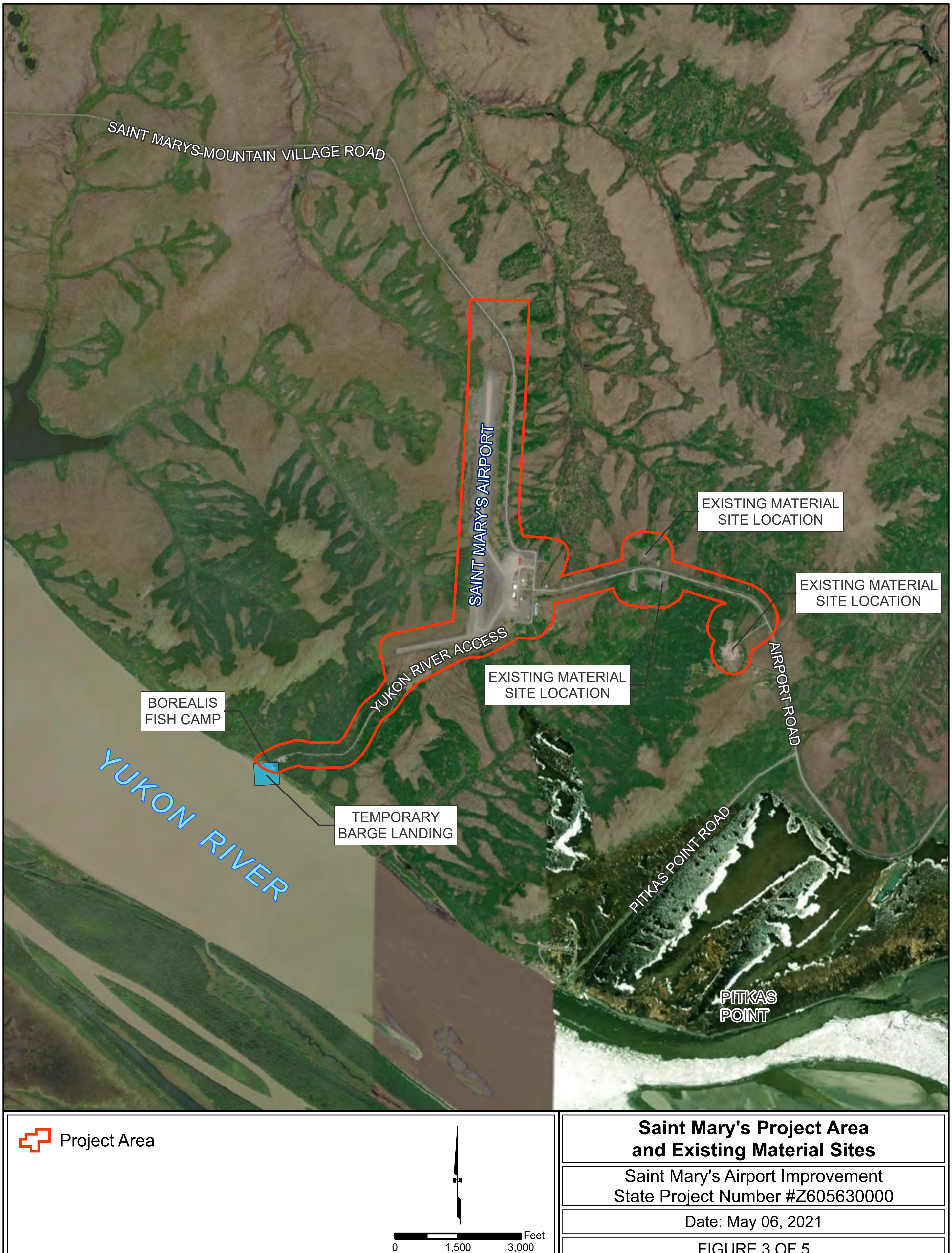
Proposed Airport Improvements

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: May 05, 2021

FIGURE 2 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Airport Improvements
Imagery Layer: Maxar



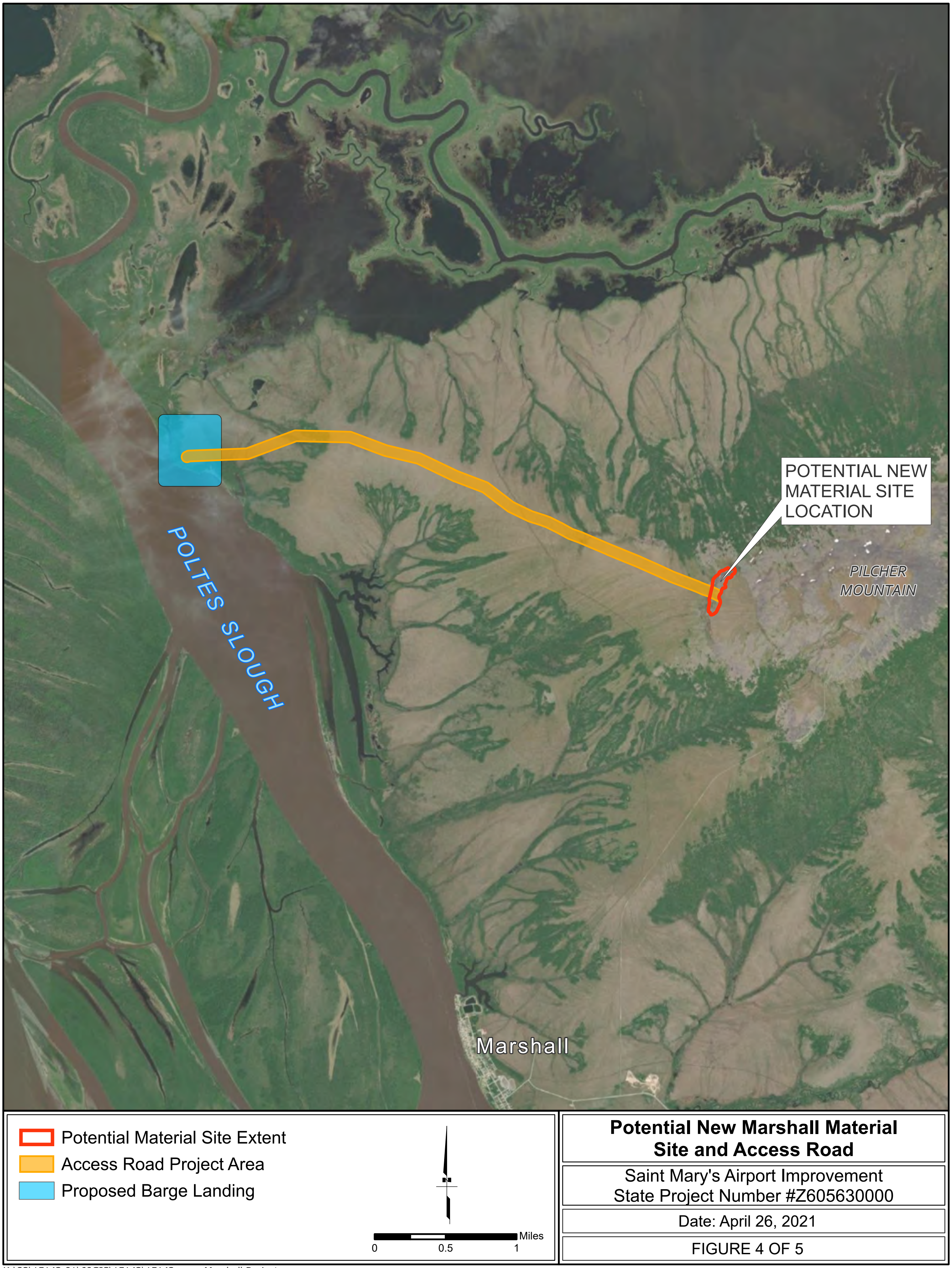
Saint Mary's Project Area and Existing Material Sites

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: May 06, 2021

FIGURE 3 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Saint Mary's Project Area
Imagery Layer: Maxar



Potential New Marshall Material Site and Access Road

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: April 26, 2021

FIGURE 4 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Marshall Project area
Imagery Layer: Earthstar Geographics

Existing Mountain Village Material Sites and Access Road

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: April 26, 2021

FIGURE 5 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Mt Village Project area
Imagery Layer: Earthstar Geographics

From:	Jensen, Melissa L (DOT)
To:	Emily Creely; Melissa Osborn; Johnston, Christopher F (DOT)
Subject:	[EXT] Fwd: Z605630000 Saint Marys Airport Improvements Project Scoping Request
Date:	Wednesday, May 12, 2021 1:43:54 PM

WARNING: *External Sender - use caution when clicking links and opening attachments.*

Begin forwarded message:

From: "Alimi, Adeyemi S (DEC)" <adeyemi.alimi@alaska.gov>
Date: May 12, 2021 at 1:39:40 PM AKDT
To: "Jensen, Melissa L (DOT)" <melissa.jensen@alaska.gov>
Cc: "Heil, Cynthia L (DEC)" <cindy.heil@alaska.gov>
Subject: RE: Z605630000 Saint Marys Airport Improvements Project Scoping Request

Dear Melissa Jensen,

The Alaska Department of Transportation and Public Facilities (DOT&PF) has requested Alaska Department of Environmental Conservation (ADEC) to comment on the proposed upgrade of the existing aviation facilities under the Saint Mary's Airport Improvements project, State Project Number #Z605630000.

Thank you for the opportunity to comment on the proposed project. The following comments are limited to Air Quality (AQ). Other divisions within ADEC will need to respond within their areas of expertise.

ADEC agrees with DOT&PF that the proposed project is not located in a non-attainment or maintenance area for air quality control under the Clean Air Act. Therefore, projects receiving federal funds or approvals do not require a conformity analysis under General Conformity regulations.

-
However, if open burning is chosen as the preferred method of disposal of organic debris, DOT&PF or their contractor must use "reasonable procedures to minimize adverse environmental effects and limit the amount of smoke generated," as well as get any applicable permits. A complete description of the open burn information including policies can be found at: http://dec.alaska.gov/air/air-permit/open-burn-info/

Any construction activities should follow all reasonable precautions in accordance to 18 AAC 50.045(d) to prevent particulate matter from being emitted into the ambient air. Also, since the Saint Mary's community has dust (PM_{10}) issue, dust control plan (e.g., application of dust palliative) should be put in place by DOT&PF to mitigate any dust issues during the project.

Please, include me in any future requests for agency comments on DOT&PF projects.

If you have any questions, please do not hesitate to contact me.

Sincerely,

-
Adeyemi Alimi (Yemi)
State of Alaska, Department of Environmental Conservation
Air Quality Division
Non-Point Mobile Sources Section
adeyemi.alimi@alaska.gov
907-269-6953 (Office)

From: Jensen, Melissa L (DOT)
Sent: Friday, May 7, 2021 9:10 AM
To: ak-airport-env@faa.gov; ak-airport-env@faa.gov; douglass_cooper@fws.gov; matthew.eagleton@noaa.gov; sean.mcdermott@noaa.gov; regpagemaster@usace.army.mil; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; Lomax, Terri J (DEC) <terri.lomax@alaska.gov>; Gleason, Erin P (DEC) <erin.gleason@alaska.gov>; Estensen, Jeff L (DFG) <jeff.estensen@alaska.gov>; Brase, Audra L (DFG) <audra.brase@alaska.gov>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; Proulx, Jeanne A (DNR) <jeanne.proulx@alaska.gov>; algaaciq@yahoo.com; ksmcityclerk@yahoo.com; waltonksm@yahoo.com; matt99632@yahoo.com; cityofmarshall@yahoo.com; David Herbert <dherbert@smcsd.us>; billya47@gmail.com; tkuhns@calistacorp.com; algaaciq@yahoo.com; atcoperations@gci.net; pitkaspoint@yahoo.com; yupiit.of.andreafski@gmail.com; yupiit.of.andreafski@gmail.com; KDelaCruz@avcp.org; info@avcp.org; info@azachorok.com; pitkaspointnc@yahoo.com; marshalltc.manager@gmail.com; office@maserculiq.com; sbusch@smnc.net; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Kromrey, Lindsey L (DOT) <lindsey.kromrey@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Weingarth, Erik S (DOT) <erik.weingarth@alaska.gov>; Schaeffer, Calvin C (DOT) <calvin.schaeffer@alaska.gov>; Beck, Albert M L (DOT) <albert.beck@alaska.gov>; community@flygrant.com; rzerkel@lynden.com; cfomai@nac.aero; reverts@evertsair.com; rob@ravnalaska.com; Lee Ryan <lryan.air@gmail.com>
Subject: Z605630000 Saint Marys Airport Improvements Project Scoping Request

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary's Airport Improvements project, State Project Number #Z605630000. The DOT&PF anticipates that construction of this project could begin in 2022.

DOT&PF is requesting scoping comments to support preparation of an environmental document for the proposed project in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Please identify any environmental, cultural, historic, or subsistence resources you believe may potentially be impacted by the proposed project, and also provide any other information you deem valuable to the environmental documentation process. Your responses will help provide us with the necessary input to develop and design a proposed final project that avoids and minimizes as many potential adverse environmental and human impacts as possible.

If you have any questions or need additional information do not hesitate to ask.

Thanks,
Missy Jensen

From: Jensen, Melissa L (DOT)
To: Johnston, Christopher F (DOT); Melissa Osborn; Emily Creely
Subject: [EXT] Fwd: Z605630000 Saint Marys Airport Improvements Project Scoping Request
Date: Monday, May 17, 2021 4:27:42 PM

WARNING: External Sender - use caution when clicking links and opening attachments.

Begin forwarded message:

> **From:** "Gleason, Erin P (DEC)" <erin.gleason@alaska.gov>
> **Date:** May 17, 2021 at 4:25:46 PM AKDT
> **To:** "Jensen, Melissa L (DOT)" <melissa.jensen@alaska.gov>
> **Subject: RE: Z605630000 Saint Marys Airport Improvements Project Scoping Request**
>
> Good afternoon Melissa,
>
> There are two active contaminated sites registered with ADEC located at the Saint Mary's airport. Any construction project at the airport should plan for management of contaminated soil and water. All work conducted on a contaminated site must be overseen by a qualified environmental professional as defined by 18 AAC 75.333. I am the ADEC project manager assigned to both these sites and am the point of contact. The two sites are
>
> <!--[if !supportLists]-->- <!--[endif]-->MarkAir-Saint Mary's Airport, ADEC File No 2444.38.004
> <!--[if !supportLists]-->- <!--[endif]-->FAA St. Mary's Consolidated Bldg, ADEC File No 2444.38.001
>
> Mountain Village, Saint Marys, and Pitka's Point all have active contaminated sites that are remediating petroleum contaminated soil via landfarming. Landfarming is when we till soil and natural processes degrade petroleum contamination. Once the petroleum has been degraded, the material could be reused for roads, aprons, and the runway. If ADOT had capacity to re-use this remediated soil in the construction project of the Sainy Mary's airport, that would be of a benefit to all three communities.
>
> Please let me know if I can provide you an additional information about the contaminated in Saint Marys.
>
> Thank you,
>
> Erin Gleason (she, her)
> Alaska Dept.of Environmental Conservation
> Contaminated Sites Program

610 University Ave
Fairbanks, AK 99709
Ph: 907-451-2056
Due to Covid-19, I am telecommuting.

From: Jensen, Melissa L (DOT)
Sent: Friday, May 7, 2021 9:10 AM
To: ak-airport-env@faa.gov; ak-airport-env@faa.gov; douglass_cooper@fws.gov; matthew.eagleton@noaa.gov; sean.mcdermott@noaa.gov; regpagemaster@usace.army.mil; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; Lomax, Terri J (DEC) <terri.lomax@alaska.gov>; Gleason, Erin P (DEC) <erin.gleason@alaska.gov>; Estensen, Jeff L (DFG) <jeff.estensen@alaska.gov>; Brase, Audra L (DFG) <audra.brase@alaska.gov>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; Proulx, Jeanne A (DNR) <jeanne.proulx@alaska.gov>; algaaciq@yahoo.com; ksmcityclerk@yahoo.com; waltonksm@yahoo.com; matt99632@yahoo.com; cityofmarshall@yahoo.com; David Herbert <dherbert@smcsd.us>; billya47@gmail.com; tkuhns@calistacorp.com; algaaciq@yahoo.com; atcoperations@gci.net; pitkaspoint@yahoo.com; yupiit.of.andreafski@gmail.com; yupiit.of.andreafski@gmail.com; KDelaCruz@avcp.org; info@avcp.org; info@azachorok.com; pitkaspointnc@yahoo.com; marshalltc.manager@gmail.com; office@maserculiq.com; sbusch@smnc.net; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Kromrey, Lindsey L (DOT) <lindsey.kromrey@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Weingarth, Erik S (DOT) <erik.weingarth@alaska.gov>; Schaeffer, Calvin C (DOT) <calvin.schaeffer@alaska.gov>; Beck, Albert M L (DOT) <albert.beck@alaska.gov>; community@flygrant.com; rzerkel@lynden.com; cfomai@nac.aero; reverts@evertsair.com; rob@ravnalaska.com; Lee Ryan <lryan.air@gmail.com>
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If you have any questions or need additional information do not hesitate to ask.

Thanks,
Missy Jensen

CALISTA CORPORATION
www.calistacorp.com

May 17, 2021

Melissa L. Jensen, Environmental Coordinator
Northern Region, DOT&PF
Aviation Design
2301 Peger Road
Fairbanks, Alaska 99709

Via E-mail: Melissa.jensen@alaska.gov

Re: St. Mary's Airport Rehabilitation
Project No. Z605630000

Dear Ms. Jensen:

Thank you for the opportunity to comment on the proposed St. Mary's Airport improvement project. According to Calista Corporation's databases, we have confirmed that there are no historical sites near the St. Mary's Airport Project that are located on Calista lands that may be impacted by your operations. Calista Corporation supports the State of Alaska Department of Transportation's St. Mary's airport improvement project. This project will include improvements to the existing airport and replacement of lighting. St. Mary's relies on air transportation for travel, air cargo and medivac services which is a critical need in the community. The improvement project will also provide reliable and safe landing access for air carriers.

Calista Corporation supports projects that provide benefits to its residents, including improving the safety of airports in rural Alaska.

Sincerely,

CALISTA CORPORATION

Mary Martinez

Mary Martinez, Land Planner
Land and Natural Resources

From:	Jensen, Melissa L (DOT)
To:	Johnston, Christopher F (DOT); Emily Creely; Melissa Osborn
Subject:	[EXT] FW: Z605630000 Saint Marys Airport Improvements Project Scoping Request
Date:	Wednesday, June 02, 2021 9:51:05 AM

WARNING: External Sender - use caution when clicking links and opening attachments.

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Wednesday, June 2, 2021 9:50 AM
To: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Cc: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Subject: RE: Z605630000 Saint Marys Airport Improvements Project Scoping Request

3130-1R FAA / 2021-00573

Good morning,

The Alaska State Historic Preservation Office received your correspondence (dated May 10, 2021) on May 13, 2021. Following our review of the documentation provided in the scoping materials, we have no objections to the level of effort proposed for historical or cultural resources identification at this early stage of project design and development. Our office recommends that the Area of Potential Effect (APE) and the possible need for additional historic properties identification be revisited as the project moves toward finalization.

We look forward to initiating Section 106 consultation for the St Marys Airport Rehabilitation project. Thank you for the opportunity to review and comment on the scoping documentation. Please contact Liz Ortiz at liz.ortiz@alaska.gov if we can be of further assistance.

Liz Ortiz

Archaeologist II - Review and Compliance
Alaska State Historic Preservation Office
Office of History and Archaeology
Department of Natural Resources
550 W. 7th Ave, Suite 1310
Anchorage AK, 99501
(907) 269-8722
liz.ortiz@alaska.gov
We are currently teleworking; email communication is best. Be well!

From: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Sent: Thursday, May 13, 2021 2:55 PM
To: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Cc: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>

Subject: FW: Z605630000 Saint Marys Airport Improvements Project Scoping Request

Good afternoon,

The Office of History and Archaeology/Alaska State Historic Preservation Office received your documentation, and its review has been assigned to Liz Ortiz under 2021-00573. We may contact you if we require additional information. Our office ordinarily has 30 calendar days after receipt to complete our review, but our office has entered tolling in response to complications from COVID-19 and our review may be delayed as a result. Please contact the project reviewer or myself by email if you have any questions or concerns.

For future project review submissions to our office, we recommend sending documentation to oha.revcomp@alaska.gov.

Best,
Sarah

Sarah Meitl
Review and Compliance Coordinator
Alaska State Historic Preservation Office
Office of History and Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3561
Office: 907-269-8720
sarah.meitl@alaska.gov
Teleworking - Email is the best method of communication.

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Monday, May 10, 2021 1:52 PM
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Subject: FW: Z605630000 Saint Marys Airport Improvements Project Scoping Request

---

From: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Sent: Friday, May 7, 2021 9:10 AM
To: ak-airport-env@faa.gov; ak-airport-env@faa.gov; douglass_cooper@fws.gov; matthew.eagleton@noaa.gov; sean.mcdermott@noaa.gov; regpagemaster@usace.army.mil; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; Lomax, Terri J (DEC) <terri.lomax@alaska.gov>; Gleason, Erin P (DEC) <erin.gleason@alaska.gov>; Estensen, Jeff L (DFG) <jeff.estensen@alaska.gov>; Brase, Audra L (DFG) <audra.brase@alaska.gov>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; Proulx, Jeanne A (DNR) <jeanne.proulx@alaska.gov>; algaaciq@yahoo.com; ksmcityclerk@yahoo.com;

waltonksm@yahoo.com; matt99632@yahoo.com; cityofmarshall@yahoo.com; David Herbert <dherbert@smcsd.us>; billya47@gmail.com; tkuhns@calistacorp.com; algaaciq@yahoo.com; atcoperations@gci.net; pitkaspoint@yahoo.com; yupiit.of.andreafski@gmail.com; yupiit.of.andreafski@gmail.com; KDelaCruz@avcp.org; info@avcp.org; info@azachorok.com; pitkaspointnc@yahoo.com; marshalltc.manager@gmail.com; office@maserculiq.com; sbusch@smnc.net; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Kromrey, Lindsey L (DOT) <lindsey.kromrey@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Weingarth, Erik S (DOT) <erik.weingarth@alaska.gov>; Schaeffer, Calvin C (DOT) <calvin.schaeffer@alaska.gov>; Beck, Albert M L (DOT) <albert.beck@alaska.gov>; community@flygrant.com; rzerkel@lynden.com; cfomai@nac.aero; reverts@evertsair.com; rob@ravnalaska.com; Lee Ryan <lryan.air@gmail.com>
Subject: Z605630000 Saint Marys Airport Improvements Project Scoping Request

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If you have any questions or need additional information do not hesitate to ask.

Thanks,
Missy Jensen

From:	Jensen, Melissa L (DOT)
To:	Emily Creely; Johnston, Christopher F (DOT)
Subject:	[EXT] Fwd: Saint Mary"s Airport Improvements EFHA Report
Date:	Wednesday, September 22, 2021 8:09:28 AM

WARNING: *External Sender - use caution when clicking links and opening attachments.*

Begin forwarded message:

From: Charlene Felkley - NOAA Federal <charlene.felkley@noaa.gov>
Date: September 22, 2021 at 8:07:00 AM AKDT
To: "Jensen, Melissa L (DOT)" <melissa.jensen@alaska.gov>
Cc: Sean McDermott - NOAA Federal <sean.mcdermott@noaa.gov>, Stefanie Coxe - NOAA Federal <stefanie.coxe@noaa.gov>
Subject: Fwd: Saint Mary's Airport Improvements EFHA Report

Good morning Missy,

Thank you for sending us the Essential Fish Habitat (EFH) Assessment for Alaska Department of Transportation and Public Facilities' proposed improvements to Saint Mary's Airport. The proposed project objective is to construct a new temporary barge landing on the Yukon River near Saint Mary's Airport in order to support DOT&PF's planned improvements. We recognize your assessment that the project may adversely affect EFH. We agree that potential adverse effects to EFH would be minimal and temporary in nature and support the conservation measures described in your EFH Assessment. Also consider these additional measures to minimize adverse effects to EFH:

- Use silt curtains to contain turbidity during fill placement.
- Pile driving should incorporate "soft start" methods where there are a series of blows at 40 percent energy proceeding the full energy impact pile driving. A hydraulic hammer is preferred as the operator can control sound intensity.
- When possible, use new piles to avoid the introduction of invasive species.
- All piles and equipment should be inspected for invasive invertebrates prior to being used in Seldovia Bay to prevent the spread of exotic species.

For additional conservation recommendations please see Impacts to Essential Fish Habitat from Non-fishing Activities in Alaska. Specifically, to minimize impacts of discharge of fill see **section 5.4.4**, and for pile installation and removal see **section 5.4.7**.

If the airport improvement plans change and become more than minimal and no longer temporary in nature, as referenced in section 1.2 of the document Impacts to Essential Fish Habitat from Non-Fishing Activities in Alaska, please contact Charlene Felkley (charlene.felkley@noaa.gov) or Sean McDermott (sean.mcdermott@noaa.gov) to discuss further actions.

Have a great day,

Charlene

---------- Forwarded message ---------
From: **Sean McDermott - NOAA Federal** <sean.mcdermott@noaa.gov>

Thanks Matt. Adding Charlene.

On Mon, Sep 13, 2021 at 11:56 AM Matthew Eagleton - NOAA Federal <matthew.eagleton@noaa.gov> wrote:

> fyi
>
> On Mon, Sep 13, 2021 at 10:54 AM Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov> wrote:
>
> > Hello,
> >
> > I am sending a copy of the Saint Mary's Airport Improvements Essential Fish Habitat Assessment for your records. Please let me know if you have any questions.
> >
> > Thank You,
> >
> > Melissa Jensen
>
> --
Matthew Eagleton
Fisheries Biologist
Habitat Conservation Division | Alaska Region
NOAA Fisheries | U.S. Department of Commerce
Office mobile: (907) 351-0410
www.fisheries.noaa.gov

--

Sean McDermott
Anchorage Office Supervisor
Habitat Conservation Division
Alaska Region
NOAA Fisheries | U.S. Department of Commerce
****
www.fisheries.noaa.gov

--

Charlene Felkley (pronouns: she/her)

Alaska Region Habitat Division

NOAA Fisheries | U.S. Department of Commerce

Office: (907)271-5006

https://www.fisheries.noaa.gov/

From:	Jensen, Melissa L (DOT)
To:	Emily Creely; Johnston, Christopher F (DOT)
Subject:	[EXT] Fwd: Z605630000 Saint Marys Airport Improvements Project Scoping Request
Date:	Thursday, May 13, 2021 2:27:34 PM
Attachments:	AKR EFH Fact Sheet.pdf

WARNING: *External Sender - use caution when clicking links and opening attachments.*

Begin forwarded message:

From: Sean McDermott - NOAA Federal <sean.mcdermott@noaa.gov>
Date: May 13, 2021 at 2:12:17 PM AKDT
To: "Jensen, Melissa L (DOT)" <melissa.jensen@alaska.gov>, Charlene Felkley - NOAA Federal <charlene.felkley@noaa.gov>
Subject: Re: Z605630000 Saint Marys Airport Improvements Project Scoping Request

Missy,
Thank you for seeking scoping comments for this project. In response to your request, we offer the following online tools to facilitate the identification of coastal and aquatic resources in the project area, as well as our EFH fact sheet (attached). Please contact Charlene Felkley, copied here, if you have any questions.

Essential Fish Habitat Mapper is an online mapping application that provides an interactive platform for viewing a spatial representation of EFH.
Shorezone Alaska is a standardized system cataloging coastal geometric and biological resources.

-Sean

On Fri, May 7, 2021 at 9:14 AM Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov> wrote:

> The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary’s Airport Improvements project, State Project Number #Z605630000. The DOT&PF anticipates that construction of this project could begin in 2022.
>
> DOT&PF is requesting scoping comments to support preparation of an environmental document for the proposed project in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Please

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>
> If you have any questions or need additional information do not hesitate to ask.
>
> Thanks,
>
> Missy Jensen

--
Sean McDermott
Anchorage Office Supervisor
Habitat Conservation Division
Alaska Region
NOAA Fisheries | U.S. Department of Commerce
****
www.fisheries.noaa.gov

Essential Fish Habitat – Alaska Fact Sheet

I. Background

In 1996, Congress added new habitat conservation provisions to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the federal law that governs U.S. marine fisheries management. The Magnuson-Stevens Act mandated the identification of **Essential Fish Habitat (EFH)** for managed species as well as measures to conserve and enhance the habitat necessary to fish to carry out their life cycles. The Magnuson-Stevens Act encourages cooperation among NMFS, the Council, fishing participants, Federal and state agencies, and others to conserve and enhance EFH.

II. What is EFH?

The Magnuson-Stevens Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C. 1802(10)). NMFS further interprets EFH in the guidelines under 50 CFR 600 Subparts J and K.

III. The EFH Mandate

Section 305(b)(2)-(4) of the Magnuson-Stevens Act outlines a process for NMFS and the Council to comment on activities proposed by **Federal** or State agencies that may have an **adverse affect** to EFH. Specifically, Federal agencies are required to consult with NMFS on any action authorized, funded, or undertaken that may adversely affect EFH. The Council may comment on and make recommendations to NMFS and other Federal or State agencies that may affect EFH for fishery resources under its authority.

The EFH Consultation process begins with a determination of adverse effect by the Federal action agency. If the Federal agency determines the action would have adverse effect, then the Federal agency is required to prepare an **EFH Assessment**. After receiving an EFH Assessment, NMFS must provide the Federal agency with **EFH Conservation Recommendations**, if applicable. The process may use a general concurrence or a programmatic, abbreviated, or expanded consultation procedure.

EFH Conservation Recommendations are advisory. However, within 30 days of receiving NMFS's EFH Conservation Recommendations, the Federal agency must provide a detailed response to NMFS that includes the measures proposed to avoid, mitigate, or offset the impact on EFH. If the Federal agency chooses not to adopt NMFS's EFH Conservation Recommendations, it must explain its reasons for not following the recommendations.

IV. Terminology

Federal action is any action authorized, funded, undertaken, or proposed to be authorized, funded, or undertaken by a Federal agency (16 U.S.C. 1855(b)(2)).

Adverse effect is any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects may be site- specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.910(a)).

NMFS provides **EFH Conservation Recommendations** to a Federal or state agency regarding measures that can be taken by that agency to conserve EFH. EFH Conservation Recommendations may be provided as part of an EFH consultation or may be provided by NMFS to any Federal or state agency whose actions would adversely affect EFH (50 CFR 600.925).

EFH Consultation satisfies the Federal agency consultation and response requirements of section 305(b)(2) and 305(b)(4) of the Magnuson-Stevens Act. NMFS makes EFH Conservation Recommendation under section 305(b)(4)(A) of that Act. When completed, an EFH consultation generally consists of:
1) Federal agency notifies NMFS of an action that may adversely affect EFH,
2) Federal agency provides an EFH Assessment to NMFS,
3) NMFS makes EFH Conservation Recommendations to the Federal agency, and
4) the Federal agency's responds to NMFS's EFH Conservation Recommendations.

General Concurrence is a process for Federal actions that may adversely affect EFH, but for which no further consultation is generally required because NMFS has determined, through an analysis of that type of action, that it will likely result in no more than minimal adverse effects individually and cumulatively (50 CFR 600.920(g)).

Programmatic Consultation allows NMFS to develop EFH Conservation Recommendations that cover all projects / actions implemented under a particular Federal program (50 CFR 600.920(j)).

Abbreviated Consultation allows NMFS to quickly make recommendations for Federal actions that are not likely to have substantial adverse impacts on EFH but that may need slight modifications to minimize adverse effects on EFH (50 CFR 600.920(h)). Once NMFS receives the EFH Assessment from the Federal agency, NMFS must respond in writing within 30 days.

Expanded Consultation allows maximum opportunity for NMFS and the Federal agency to work together in the development of EFH Conservation Recommendations that would minimize the proposed action's adverse impacts on EFH. This type of consultation is used for proposed Federal actions that would likely result in substantial adverse impacts to EFH (50 CFR 600.920(i)). Once NMFS receives an EFH Assessment from the Federal agency, NMFS must respond within 60 days.

EFH Assessment is a written assessment of the effects of a proposed Federal action on EFH (50 CFR 600.920(e)). Federal agencies must provide NMFS with an EFH Assessment for any action that may adversely affect EFH, except for those activities covered by a General Concurrence. An EFH Assessment must contain:
1) a description of the proposed action,
2) an analysis of the adverse effects of the action on EFH and managed species,
3) the Federal agency's conclusions regarding the effects of the action on EFH, and,
4) proposed mitigation, if applicable.

If appropriate, the EFH Assessment should also include the items listed at 50 CFR 600.920(e)(4). The level of detail in an EFH Assessment should be commensurate with the potential impacts to EFH.

V. Contact Information

Matthew Eagleton, Deputy ARA Habitat Conservation Division
(907) 271-6354

Gretchen Harrington, ARA Habitat Conservation Division
(907) 586-7824

Visit us at https://alaskafisheries.noaa.gov/habitat

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

NORTHERN REGION
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5388
Main: 907-451-2200
Fax: 907-451-5126
TDD: 907-451-2363
dot.alaska.gov

In Reply Refer To:
Saint Mary's Airport Improvements
Project Numbers (State/Federal): Z605630000/AIP TBA
No Historic Properties Affected
Attention: This finding contains one (1) DOE

October 4, 2021

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Region Airports Division of the Federal Aviation Administration (FAA), is proposing to upgrade existing aviation facilities at the Saint Mary's Airport, in Saint Mary's Alaska. The project areas are found on Table 1 and shown in Figure 1.

Table 1. Project location

Township	Range	Section(s)	USGS Quad Map1:63,360	Meridian
023N	076W	19,27,28,29,30,32,33	Kwiguk A-3	Seward
023N	077W	6,7,8,9,10,13,14,15,24, 25,36	Kwiguk A-3	Seward
023N	078W	1,7,8,9,10,11,12	Kwiguk A-4	Seward
023N	079W	12	Kwiguk A-4	Seward

The DOT&PF on behalf of FAA finds **that no historic properties would be affected** by the proposed project pursuant to 36 CFR§800.5(b), implementing regulations of Section 106 of the National Historic Preservation Act. This submission provides documentation in support of this finding, as required at 36 CFR§800.11(e).

Project Description
The proposed project would include the following (see Figure 2):

1. Resurface the runway with crushed aggregate and apply dust palliative (17/35 and 6/24) and replace existing runway edge lighting (the edge lighting would be installed in the same location and at the same depth as existing lighting).
2. Resurface the taxiways (A and B) with crushed aggregate and apply dust palliative and replace the existing taxiway edge lighting (the edge lighting would be installed in the same location and at the same depth as existing lighting).
3. Resurface existing gravel apron (with crushed aggregate and dust palliative) and install new lighting equipment (will require new ground disturbance).
4. Replace existing supplemental wind cone and foundation (location, materials, and dimensions would remain the same).
5. Replace existing rotating beacon (location, materials, and dimensions would remain the same).
6. Replace tiedown anchors (location, materials, and dimensions would remain the same).
7. Install new electrical equipment in new electrical equipment enclosure/building (EEE/EEB) (will require new ground disturbance).
8. Apply dust palliative to runway surfaces (Runway 17/35: 6,000' x 150'; Runway 6/24: 1,520' x 60').
9. Replace segmented circle and primary wind cone (location, materials, and dimensions would remain the same).
10. Construct approximately 415' long x 300' wide embankment to extend Runway Safety Area (RSA) north of current endpoint on Runway 17 (clearing vegetation as needed with a hydroaxe).
11. Reconstruct existing asphalt paved apron (mill and overlay).
12. Widen outer edges of Runway 6/24 RSA by 17.5 feet on each side of the runway.
13. Construct a new drainage swale (will require new ground disturbance).
14. Establish a temporary construction materials staging area.

Additional proposed project activities include:

- Develop a temporary barge landing/causeway near the Boreal Fisheries, Inc. (Boreal) fish processing facility by creating a separate structure (see Figure 4).
- Replace an existing culvert along the Yukon River Access Road (see Figure 3).

Materials sites proposed to be used for this project, include:

- Existing and permitted material sites in Saint Mary's [Pitkas Point- (owned and operated by Pitka's Point Corporation) and Saint Mary's- (owned and operated by Nerkilikmute Corporation)] (see Figure 5).
- Existing and permitted commercial source in Nome, materials to be transported via barge to the Boreal fish camp barge landing site and hauled to the airport work site via the Yukon River Access Road (see Figure 1).
- A new commercial material site (Pilcher Mountain), haul road, and barge landing near Marshall, Alaska is being developed by Calista Corporation. If Calista Corporation finishes development of that material site in time for the project, materials will be transported via barge down the Yukon River to the Boreal fish camp barge landing site, and materials will be hauled to the airport work site via the Yukon River Access Road (see Figure 1).
- Existing and permitted material site in Mountain Village (owned and operated by Azahorok Corporation), materials to be transported over the existing Mountain Village-Saint Mary's Road (approximately 15 miles) (see Figure 6).

Area of Potential Effect

The Area of Potential Effect (APE) includes the construction areas at the Saint Mary's Airport (see Figures 1 and 2); the drivable surface of the Yukon River Access Road (see Figures 1 and 3), and the temporary barge landing/causeway near the Boreal fish processing facility (see Figure 4). Staging is proposed to occur within the existing work area at the Saint Mary's Airport and at the temporary barge landing at the Boreal fish processing facility (see Figures 2 and 4). The APE also includes the existing Saint Mary's and Pitkas Point Material sites and the drivable surface of the associated haul road (see Figure 5). Additionally, the APE includes the existing and permitted boundary of the Mountain Village Material site, and the ROW boundary (100 feet either side of the road centerline) of the associated haul road to the material site (see Figures 1 and 6). Visual effects on adjacent properties were taken into consideration when determining the APE, and none were identified.

Identification Efforts

A search of the Alaska Heritage Resources Survey-IBS (AHRS) database on September 8, 2021 indicated that one AHRS site is found within the APE. This AHRS site was recorded during a 2021 cultural resources survey completed by DOWL (2021) in support of this project (see Attachment 1). A description of the AHRS site is provided below.

KWI-00087 Boreal Fisheries Complex- The Boreal fisheries complex consists of two primary buildings, several ancillary buildings (including a shipping container), and a 24' x 160' sheet pile backfilled causeway that that extends into the Yukon River. Associated dates with this fish camp, as it is locally known, are from 1974 to present. A comparison of aerial photos from 1984 and 2012 show that a small building at the center of the complex was removed and replaced by an expansion of the large processing building on the east side of the complex. The complex otherwise remains unchanged to date. This AHRS site has not received a determination of eligibility (DOE) for inclusion in the National Register of Historic Places (NRHP).

Additional Identification Efforts

A search of the Alaska Department of Natural Resources Division of Mining, Lands and Water Revised Statute (RS) 2477 database of public rights-of-way indicates that one (1) RS 2477 trail intersects the project APE (RST-120). A description of the RS-2477 trail is provided below.

RST-120 Kotlik-Marshall Trail- This RS-2477 trail begins at Kotlik, Alaska on Apoon Pass, it travels overland until it reaches the north bank of the Yukon River, where it continues until it reaches Marshall, Alaska. This trail is not visible on satellite imagery, suggesting it is a winter trail. The AHRS database shows this linear feature crossing the project APE at the Boreal fish processing barge landing site. The DOT&PF Northern Region PQI believes that there is reliable historical and current documented evidence by the DNR that the location of a segment of RS2477 #120 does run through the project APE. The DOT&PF believes that evaluation of the entire trail for NRHP eligibility is beyond the scope of this project since the trail is about 150 miles long and the portion within the APE is only 100 feet long. For these reasons, no AHRS number has been assigned to the trail. As there is no physical evidence of the trail within or adjacent to the project APE, the trail does not reach the threshold for the application of the Criteria of Evaluation for the National Register of Historic Places (36CFR§60.4). Therefore, no potential effect to the trail needs to be assessed.

A review of the DOT&PF Northern Region Cultural Resources Library revealed that the APE within the Saint Mary's Airport Boundaries has been previously surveyed for cultural resources (DePew and Pendleton 2003). literature review also revealed that the St. Mary's-Mountain Village Road and the three village corporation-owned material sites proposed to be used for this project (Saint Mary's, Pitkas Point, and Mountain Village) have been previously surveyed for cultural resources (Hull 2012). The temporary barge landing at the Boreal fish processing facility and the Yukon River Access Road near Saint Mary's Airport (see Figures 1 and 4) were surveyed by DOWL personnel in support of this project (see

Attachment 1). Stephen R. Braund and Associates (SRB&A) surveyed the proposed barge landing, Port Access Road and the proposed Pitcher Mountain material site near Marshall, Alaska (see Attachment 2). SRB&A's survey was in support of the development of a new commercial material site by Calista Corporation that will benefit this project if it is developed in time. The DOT&PF Archaeologist-Cultural Resources Specialist (PQI) believes that this level of identification is sufficient for this project.

Determination of Eligibility
KWI-00087 Boreal Fisheries Complex- A review of the available literature indicates that the Boreal Fisheries Complex is not associated with an event or pattern of events that have made significant contributions to the broad patterns of Alaskan or regional history (Criterion A). Although Boreal Fisheries has played a role in the Yukon River commercial fisheries, it does not rise to the level of local, state, or national significance required to be considered for the NRHP. Likewise, the Boreal Fisheries Complex is not associated with the life of significant persons (Criterion B). The fisheries complex was established in 1974 by the Crawford Family and run as a family business. The fisheries complex was purchased by International Seafoods (Kodiak) in 2018, and they remain the owners today. The Fisheries complex does not display distinctive architectural characteristics of a type, period, or method of construction (Criterion C). The fisheries complex is a mixture of building types, including a repurposed shipping container, that show no continuity in style or method of construction. The fisheries complex lacks potential to further our understanding of the history of the area and does not appear to contain a subsurface component (Criterion D). Therefore, the DOT&PF PQI finds KWI-00087 not eligible for inclusion in the NRHP under any of the four criteria (A, B, C, D,), and seeks concurrence from the Alaska SHPO.

Consulting Parties
On June 8, 2021 the DOT&PF, on behalf of FAA sent out consultation initiation letters to the following potential interested parties regarding this project: the State Historic Preservation Officer (SHPO); the Association of Village of Council Presidents (AVCP), Algaaciq Native Village, Asa'carsarmiut Tribe, Azachorok, Incorporated, Calista Corporation, Native Village of Pitka's Point, Nerkikmute Native Corporation, Pitka's Point Native Corporation, Saint Mary's Native Corporation, Yupiit of Andreafski, Native Village of Marshall, Maserculiq, Incorporated, City of Marshall, City of Saint Mary's.

Comments were received from Tisha Kuhns, Vice President of Land and Natural Resources for Calista Corporation, on June 11, 2021 asking for clarification related to whether we had already received correspondence from her corporation. Additionally, the DOT&PF received correspondence from Liz Ortiz of the SHPO office reference 3130-1R FAA/2021-00573 on June 24, 2021 indicating that her office had not objections to the proposed area of potential effect or the level of effort proposed for the project. She indicated that her office is anticipating the forthcoming survey report that includes the Pilcher Mountain Materials Source and access road, as well as the other previously un-surveyed areas within the APE. Those cultural resources reports are attached (Attachments 1 and 2) to this document. No other comments were received.

Please direct your concurrence or comments to me at my address above, by telephone 907-451-2227, or by e-mail at holly.mckinney@alaska.gov.

Sincerely,

Holly J. McKinney
Cultural Resource Specialist -Archaeologist (PQI)

State of Alaska DOT&PF, Northern Region

Enclosures:

Figure 1. Project Location and Vicinity map.
Figure 2. Proposed Airport Improvements and APE, St. Mary's Airport.
Figure 3. Yukon River Access Road APE.
Figure 4. Proposed Causeway and APE at Borealis fish processing facility.
Figure 5. APE Saint Mary's and Pitka's Point material sites.
Figure 5. APE Mountain Village material site.

Attachment 1: Cultural Resources Report and Recommendations: Saint Mary's Airport Improvements, Project Number Z605630000 (DOWL 2021).
Attachment 2: Cultural Resources Field Survey Report for Barge Landing and Material site in Marshall, Alaska associated with Saint Mary's Airport Improvement Project (SRB&A 2021).

References:

DePew, A.D. and C.L. Pendleton 2003 Archaeological Survey of Proposed Improvements to the Saint Mary's Airport, ADOT&PF Project No. 60563. Office of History and Archaeology Short Report Number 2003-6.

DOWL, 2021 Cultural Resources Report and Recommendations: Saint Mary's Airport Improvements, Project Number Z605630000. Report prepared for the Alaska Department of Transportation and Public Facilities.

Hull, M. 2012 The St. Mary's- Mountain Village Road Rehabilitation Archaeological Survey: AKAS Project No. 60240. Report prepared for Alaska DOT&PF.

Stephen R. Braund & Associates (SRB&A) 2021 Cultural Resources Field Survey Report for Barge Landing and Material Site in Marshall, Alaska associated with Saint Mary's Airport Improvement Project. Prepared for DOWL, Anchorage, Alaska.

Electronic cc w/ enclosures:

Christopher Johnston, P.E., DOT&PF Northern Region, Project Manager
Jack Gilbertsen, FAA, Alaska Region, Regional Environmental Manager
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Melissa Jensen, DOT&PF, Northern Region, Environmental Impact Analyst

Area of Potential Effect

0 1 2 Miles

Saint Mary's Airport Improvement
State Project Number #Z605630000

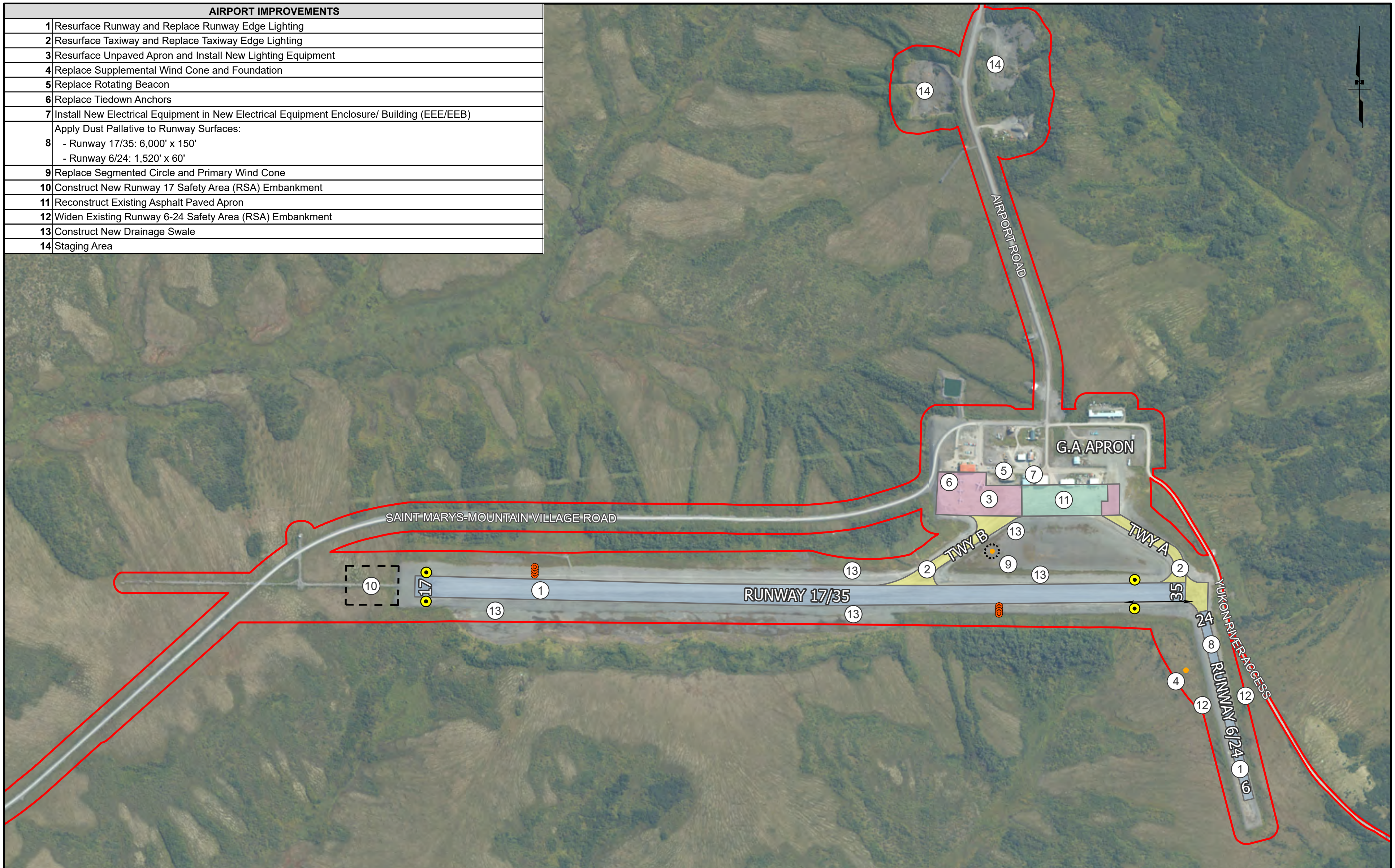
Project Location & Vicinity

Date: September 03, 2021

FIGURE 1 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Location & Vicinity Map
Imagery Layer: Earthstar Geographics

AIRPORT IMPROVEMENTS	
1	Resurface Runway and Replace Runway Edge Lighting
2	Resurface Taxiway and Replace Taxiway Edge Lighting
3	Resurface Unpaved Apron and Install New Lighting Equipment
4	Replace Supplemental Wind Cone and Foundation
5	Replace Rotating Beacon
6	Replace Tiedown Anchors
7	Install New Electrical Equipment in New Electrical Equipment Enclosure/ Building (EEE/EEB)
8	Apply Dust Pallative to Runway Surfaces: - Runway 17/35: 6,000' x 150' - Runway 6/24: 1,520' x 60'
9	Replace Segmented Circle and Primary Wind Cone
10	Construct New Runway 17 Safety Area (RSA) Embankment
11	Reconstruct Existing Asphalt Paved Apron
12	Widen Existing Runway 6-24 Safety Area (RSA) Embankment
13	Construct New Drainage Swale
14	Staging Area



PAPI
REIL
Wind Cone
Segmented Circle
Gravel Apron
Paved Apron
Taxiway
Runway
RSA Extension
Area of Potential Effect

Feet
0 550 1,100

Saint Mary's Airport Improvement
State Project Number #Z605630000

Saint Mary's APE

Date: September 10, 2021

FIGURE 2 OF 6

Area of Potential Effect

Proposed Culvert Replacement

Feet
0 90 180

Saint Mary's Airport Improvement
State Project Number #Z605630000

Yukon River Access Road APE

Date: September 03, 2021

FIGURE 3 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Yukon Access Rd APE

Area of Potential Effect
Existing Causeway
Proposed Causeway
Proposed Staging Area

Feet
0 45 90

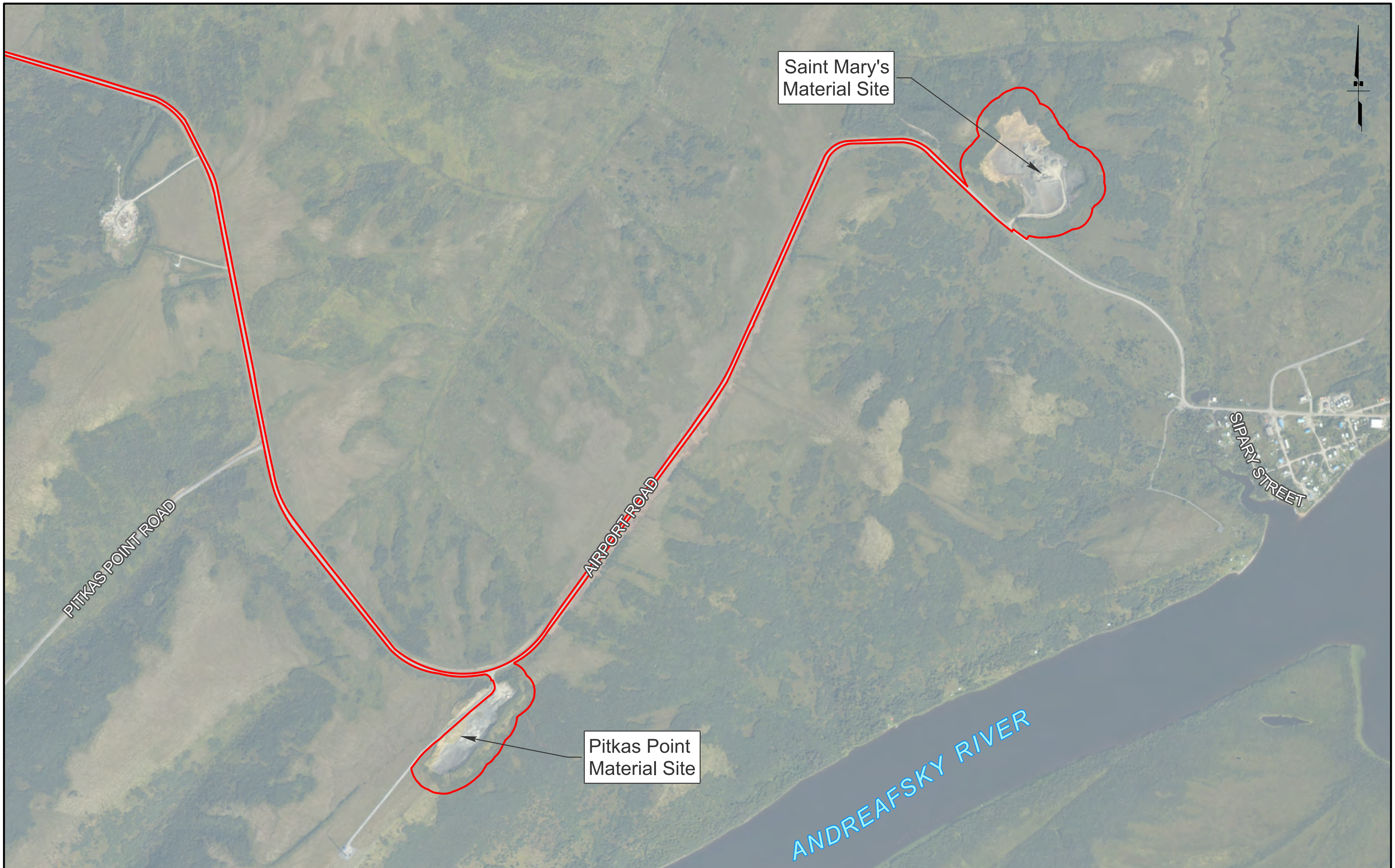
Saint Mary's Airport Improvement
State Project Number #Z605630000

Boreal Fisheries Complex APE

Date: September 03, 2021

FIGURE 4 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Proposed Causeway APE



Area of Potential Effect

0 140 280 Feet

Saint Mary's Airport Improvement
State Project Number #Z605630000

Pitkas Point and Saint Mary's Material Sites APE

Date: September 03, 2021

FIGURE 5 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Pitkas Point & St Mary's Material Site

Area of Potential Effect

Miles
0 0.7 1.4

Mountain Village Material Site

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: June 07, 2021

FIGURE 6 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Mt Village Material Site
Imagery Layer: Earthstar Geographics, Maxar

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

In Reply Refer To:
Saint Mary's Airport Improvements
State/Federal Project Number(s): Z605630000/Pending
Initiation of Consultation

June 8, 2021

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Region, Airports Division of the Federal Aviation Administration (FAA), is proposing to upgrade existing aviation facilities at the Saint Mary's Airport, in Saint Mary's Alaska. To support this project, a new material site (Pilcher Mountain) and associated haul route near Marshall, Alaska is being proposed for development. The project areas are found on Table 1 and shown in Figure 1.

Table 1. Project location

Township	Range	Section(s)	USGS Quad Map1:63,360	Meridian
023N	076W	18,19,30	Kwiguk A-3	Seward
023N	077W	13, 24, 25, 36	Kwiguk A-3	Seward
021N	070W	2,3,4,5,11,12	Marshall D-1	Seward

Project Description

The proposed project would include the following (see Figure 2):

1. Resurface the Runway with crushed aggregate and apply dust palliative (17/35 and 6/24).
2. Resurface the Taxiways (A and B) with crushed aggregate and apply dust palliative.
3. Replace/Relocate Navigational Aids (NAVAIDs).

4. Move Runway 35 landing point approximately 400 feet north. Operational Surface will remain and be maintained (new striping indicators will be placed on the runway surface).
5. Construct approximately 415' long x 300' wide embankment to extend Runway Safety Area (RSA) north of current endpoint (clearing vegetation as needed with a hydroaxe).
6. Widen outer edges of Runway 6/24 RSA by 17.5 feet on each side of the runway.
7. Resurface existing gravel apron (with crushed aggregate and dust palliative).
8. Repave (mill and overlay) existing asphalt apron.
9. Replace wind cone and segmented circle (location, materials, and dimensions would remain the same).
10. Replace supplemental wind cone (location, materials, and dimensions would remain the same).
11. Rehabilitate runway lighting (location, materials, and dimensions would remain the same).
12. Rehabilitate taxiway lighting (location, materials, and dimensions would remain the same).
13. Establish a temporary construction materials staging area.

Additional proposed project activities include:

- Make necessary drainage improvements to the airfield's existing drainage ditches and culverts (exact locations will be included in the findings letter).
- Develop a temporary barge landing/causeway near the Boreal fish processing facility, by either extending the existing causeway by approximately 250- feet (see Figure 3) or creating a separate structure.
- Create a new road (Port Access Road) to access the proposed Pilcher Mountain material site near Marshall, Alaska (see Figure 5).
- Develop a new barge landing site along Poltes Slough, near the Pilcher Mountain material site proposed Port Access Road (see Figure 5).
- Develop the Pilcher Mountain material site near Marshall, Alaska (see Figure 5).

There are additional potential materials sites that are being investigated for suitability of use for this project, including:

- Existing, permitted material sites in Saint Mary's (see Figure 4).
- Using material from an existing commercial source in Nome and transporting it via barge to the Borealis fish camp barge landing site, and hauling the materials to the airport work site via the Yukon River Access Road (see Figure 1).
- Develop a new material site (Pilcher Mountain), haul road, and barge landing near Marshall, Alaska (see Figure 5). Transport the materials via barge down the Yukon River to the Borealis fish camp barge landing site, and hauling the materials to the airport work site via the Yukon River Access Road (see Figure 1).
- Existing, permitted material sites in Mountain Village, and transport the material over the existing Mountain Village-Saint Mary's Road (approximately 15 miles) (see Figure 6). This option may require minor improvements to the existing haul route.

The specific Material site(s) that will be used to support project activities will be presented in the findings letter.

Preliminary Area of Potential Effect

The Preliminary Area of Potential Effect (Preliminary APE) includes the construction areas at the Saint Mary's Airport (see Figures 1 and 2); the drivable surface of the Yukon River Access Road (see Figure 1), and the temporary barge landing/causeway near the Boreal fish processing facility (see Figure 3). Staging is proposed to occur within the existing work area at the Saint Mary's Airport and at the temporary barge landing at the Borealis fish processing facility (see Figures 2 and 3). The Preliminary APE also includes the construction areas near Marshall, Alaska that are associated with the new Pi1cher Mountain material site (see Figures 1 and 5). The Preliminary APE near Marshall includes the proposed new barge landing area, the proposed new access road (the right-of-way extends 100 feet either side of the road centerline), and the proposed area to be developed as a material source (Pilcher Mountain) (see Figure 5). Staging for the work area near Marshall, is proposed to occur within the right-of-way of the new proposed access road (see Figure 5). Additionally, the Preliminary APE includes the drivable surface of the haul road to the existing material sites in Saint Mary's, and the Saint Mary's material site boundaries (see Figure 4) as well as the ROW boundary (100 feet either side of the road centerline) of the haul road to the existing Mountain Village material site, and the Mountain Village material site boundary (see Figure 6). The Area of Potential Effect (APE) will be defined after comments are received from your agency and other consulting parties.

Identification Efforts

A search of the Alaska Heritage Resources Survey-IBS (AHRS) database on May 27, 2021 indicated that no AHRS sites are found within the Preliminary APE. A search of the Alaska Department of Natural Resources Division of Mining, Lands and Water Revised Statute (RS) 2477 database of public right-of-ways indicates that one (1) RS 2477 trail intersects the proposed Preliminary APE (RST 120). A description of the RS-2477 is provided below.

RST-120 Kotlik-Marshall Trail- This RS-2477 trail begins at Kotlik, Alaska on Apoon Pass, it travels overland until it reaches the north bank of the Yukon River, where it continues on until Marshall. This trail is not visible on satellite imagery, suggesting it is a winter trail.

A review of the DOT&PF Northern Region Cultural Resources Library revealed that the Preliminary APE within the Saint Mary's Airport Boundaries has been previously surveyed for cultural resources (DePew and Pendleton 2003). No cultural resources were encountered during that investigation. The literature review also revealed that the St. Mary's-Mountain Village Road has been previously surveyed for cultural resources (Hull 2012). There is a portion of the Preliminary APE that has not been subjected to a cultural resources survey. The temporary barge landing at the Borealis fish processing facility and the Yukon River Access Road near Saint Mary's Airport (see Figures 1 and 3); and the proposed barge landing, Port Access Road and the proposed Pitcher Mountain material site near Marshall have not been previously surveyed (see Figure 5). DOWL cultural resource personnel are scheduled to survey those areas in summer 2021. The results of DOWL's cultural resource survey will be included with the Findings letter for this project.

Consulting Parties

The DOT&PF, on behalf of FAA has identified the following potential interested parties to initiate consultation with regarding this project: the State Historic Preservation Officer (SHPO); the

Association of Village of Council Presidents (AVCP), Algaaciq Native Village, Asa'carsarmiut Tribe, Azachorok, Incorporated, Calista Corporation, Native Village of Pitka's Point, Nerkikmute Native Corporation, Pitka's Point Native Corporation, Saint Mary's Native Corporation, Yupiit of Andreafski, Native Village of Marshall, Maserculiq, Incorporated, City of Marshall, City of Saint Mary's.

If you have questions or comments related to this proposed project, I can be reached at the address above, by telephone at 907-451-2227 or by e-mail at holly.mckinney@alaska.gov.

Your timely response will greatly assist us in incorporating your concerns into project development. For that purpose, we respectfully request that you respond within thirty days of your receipt of this correspondence.

Sincerely,

Holly J. McKinney

Holly J. McKinney
Cultural Resource Specialist -Archaeologist (PQI)
State of Alaska DOT&PF, Northern Region

Enclosures:

Figure 1. Project Location and Vicinity map.
Figure 2. Proposed Airport Improvements and Preliminary APE, St. Mary's Airport.
Figure 3. Proposed Causeway and Preliminary APE at Borealis fish processing facility.
Figure 4. Preliminary APE Saint Mary's and Pitka's Point material sites.
Figure 5. Preliminary APE for a potential new Marshall material site and Access Road.
Figure 6. Preliminary APE Mountain Village material sites.

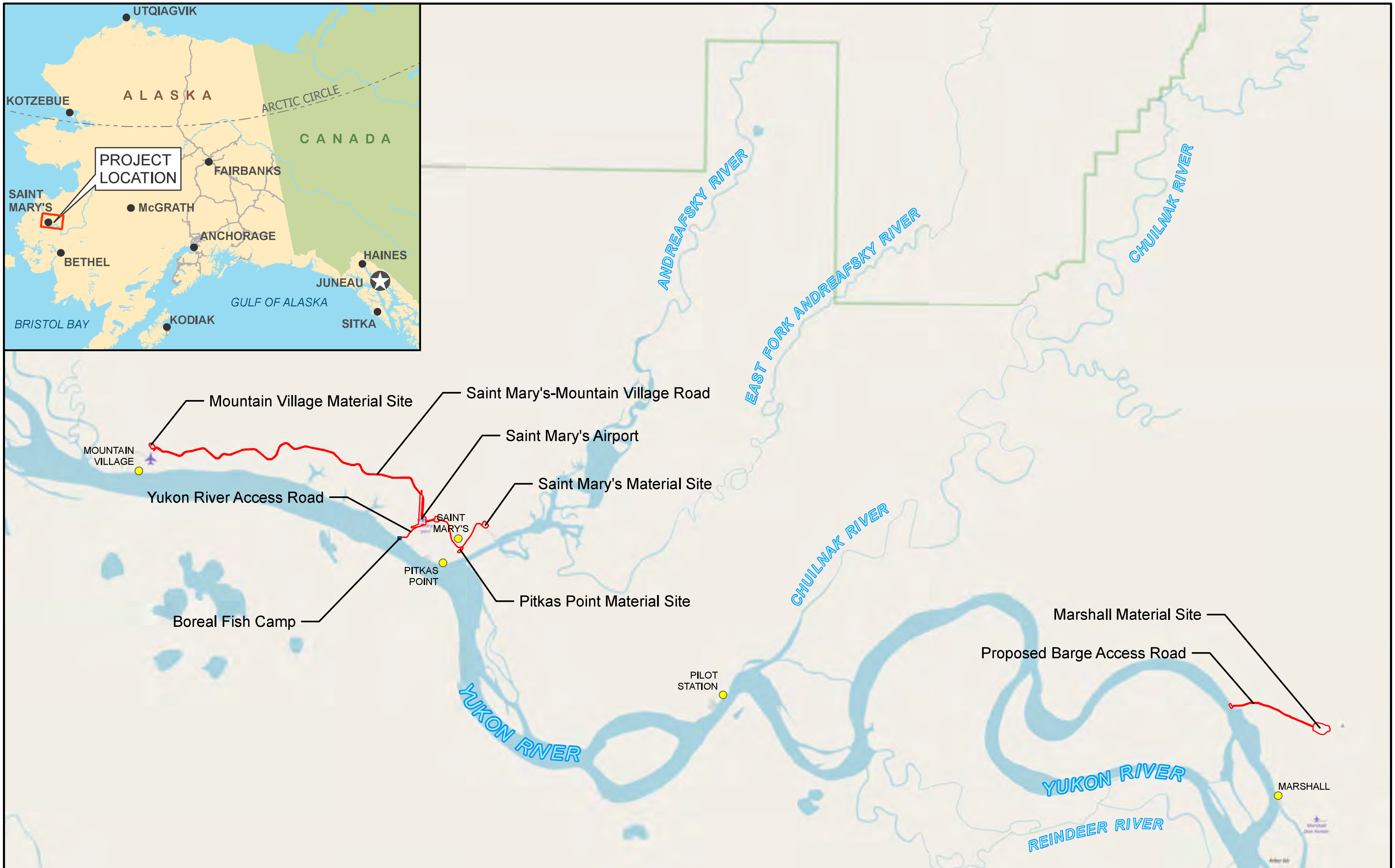
References:

DePew, A.D. and C.L. Pendleton 2003 Archaeological Survey of Proposed Improvements to the Saint Mary's Airport, ADOT&PF Project No. 60563. Office of History and Archaeology Short Report Number 2003-6.

Hull, M. 2012 The St. Mary's- Mountain Village Road Rehabilitation Archaeological Survey: AKAS Project No. 60240. Report prepared for Alaska DOT&PF.

Electronic cc w/ enclosures:

Jack Gilbertsen, FAA, Alaska Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager
Christopher Johnston, P.E., DOT&PF Northern Region, Project Manager
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Melissa Jensen, DOT&PF, Northern Region, Environmental Impact Analyst
Molly Proue, DOT&PF, Statewide NEPA Manager



Preliminary Area of Potential Effect

akplacenames

0 3 6 Miles

Project Location & Vicinity

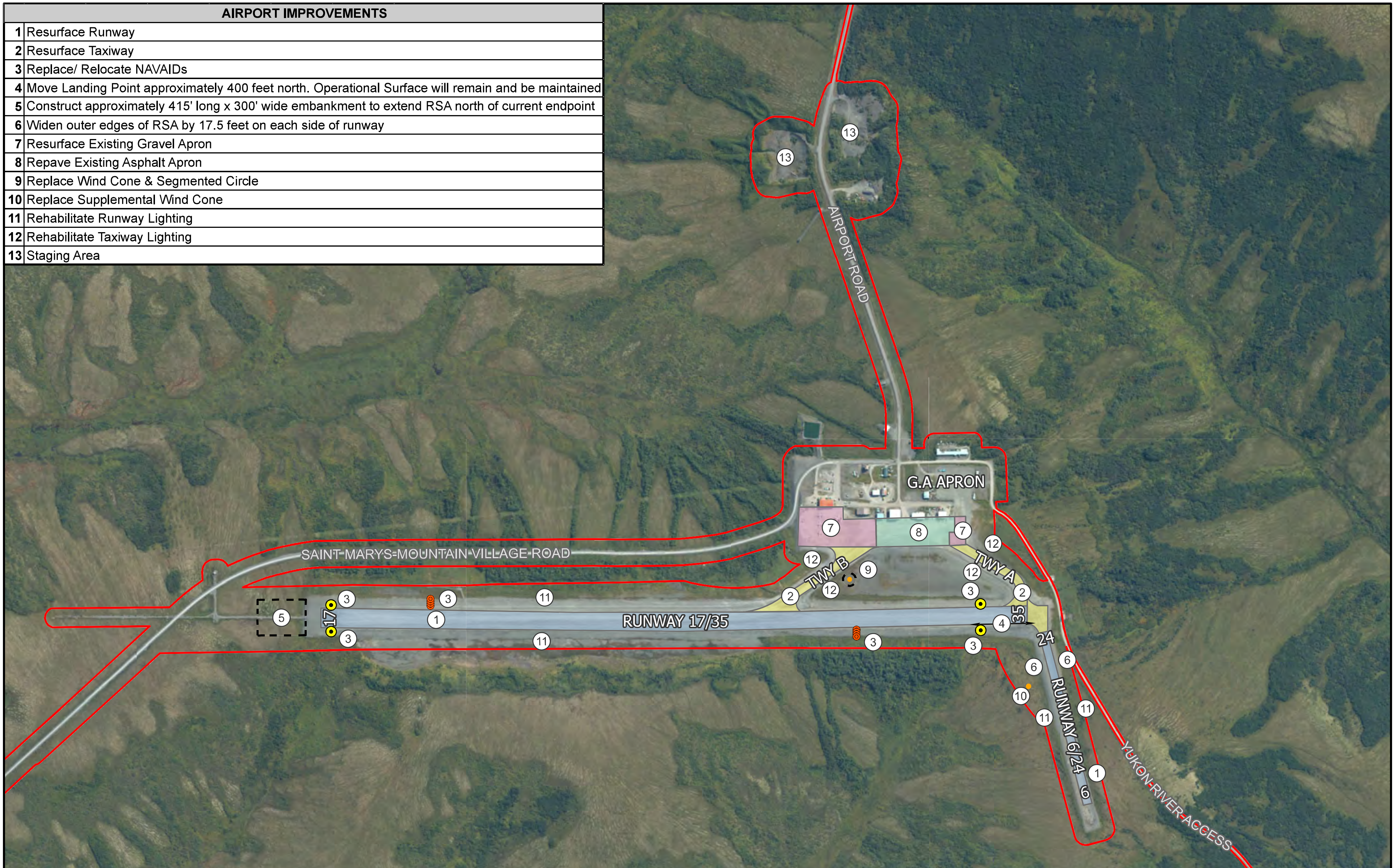
Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: June 07, 2021

FIGURE 1 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Project Extent

AIRPORT IMPROVEMENTS	
1	Resurface Runway
2	Resurface Taxiway
3	Replace/ Relocate NAVAIDs
4	Move Landing Point approximately 400 feet north. Operational Surface will remain and be maintained
5	Construct approximately 415' long x 300' wide embankment to extend RSA north of current endpoint
6	Widen outer edges of RSA by 17.5 feet on each side of runway
7	Resurface Existing Gravel Apron
8	Repave Existing Asphalt Apron
9	Replace Wind Cone & Segmented Circle
10	Replace Supplemental Wind Cone
11	Rehabilitate Runway Lighting
12	Rehabilitate Taxiway Lighting
13	Staging Area



PAPI
REIL
Gravel Apron
Paved Apron
Taxiway
Wind Cone
Segmented Circle
RSA Extension
Runway
Preliminary Area of Potential Effect

Feet
0 300 600 1,200

Proposed Airport Improvements

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: June 07, 2021

FIGURE 2 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Airport Improvements

Preliminary Area of Potential Effect

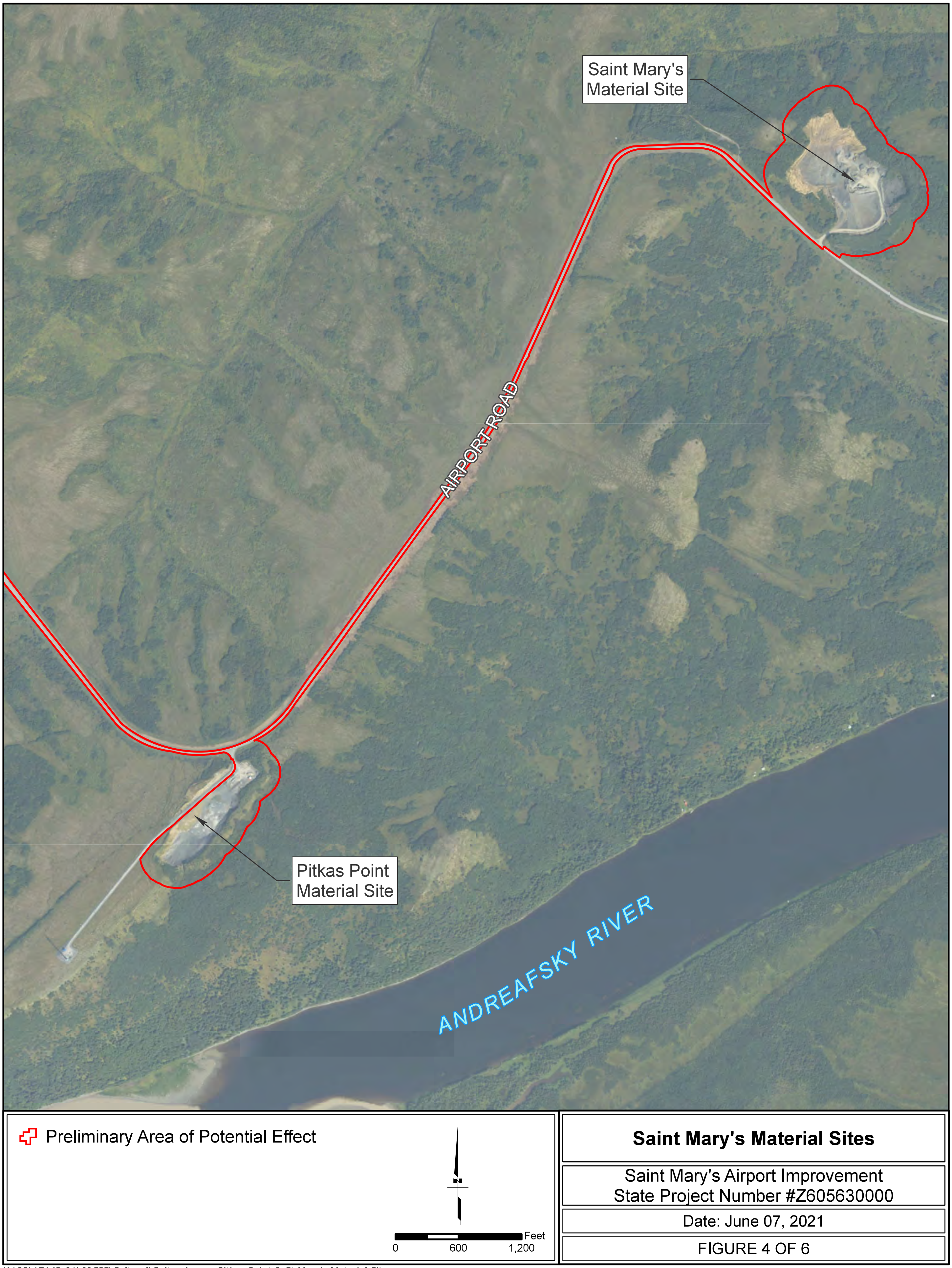
0 50 100 Feet

Proposed Causeway

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: June 07, 2021

FIGURE 3 OF 6



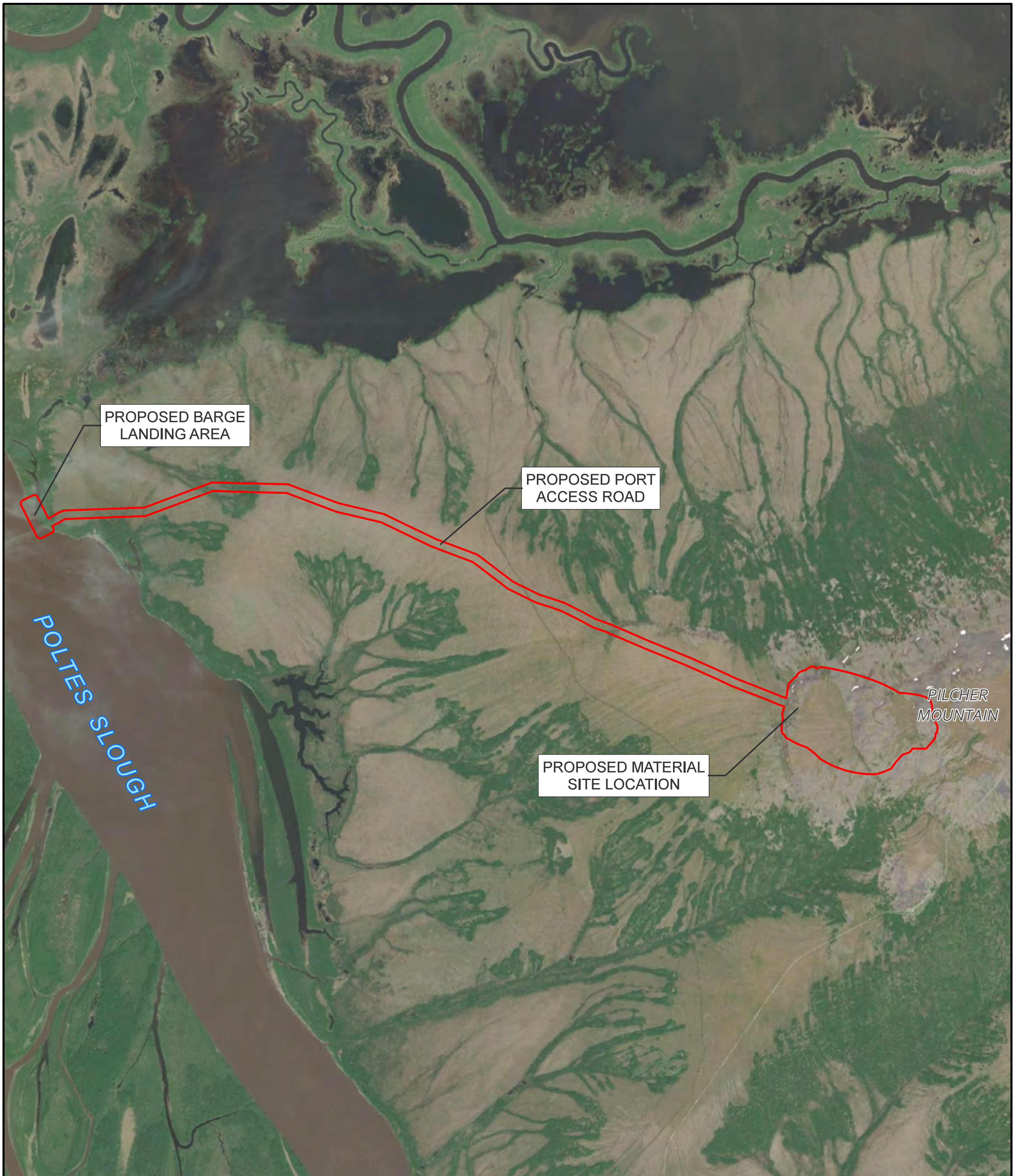
Saint Mary's Material Sites

Saint Mary's Airport Improvement
State Project Number #Z605630000

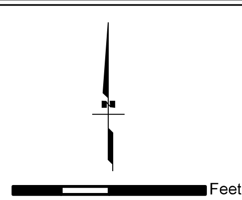
Date: June 07, 2021

FIGURE 4 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Pitkas Point & St Mary's Material Site



Preliminary Area of Potential Effect



Potential New Marshall Material Site and Access Road

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: June 07, 2021

FIGURE 5 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Cultural Marshall Project Area
Imagery Layer: Earthstar Geographics

Preliminary Area of Potential Effect

Miles
0 0.7 1.4

Mountain Village Material Site

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: June 07, 2021

FIGURE 6 OF 6

K:\23\15143-01\60GIS\Cultural\Cultural.aprx Mt Village Material Site
Imagery Layer: Earthstar Geographics, Maxar

From:	Jensen, Melissa L (DOT)
To:	Emily Creely; Johnston, Christopher F (DOT)
Subject:	[EXT] Fwd: Z605630000 Saint Marys Airport Improvements Project Scoping Request
Date:	Thursday, May 13, 2021 2:57:03 PM
Attachments:	Scoping Letter 2021_0505.pdf Preliminary Research 2021_0428 (1).docx Saint Marys Airport Improvements Project Scoping Figures.pdf

---

Begin forwarded message:

From: "DNR, Parks OHA Review Compliance (DNR sponsored)" <oha.revcomp@alaska.gov>
Date: May 13, 2021 at 2:55:01 PM AKDT
To: "Jensen, Melissa L (DOT)" <melissa.jensen@alaska.gov>
Cc: "Ortiz, Liz M (DNR)" <liz.ortiz@alaska.gov>
Subject: FW: Z605630000 Saint Marys Airport Improvements Project Scoping Request

Good afternoon,

The Office of History and Archaeology/Alaska State Historic Preservation Office received your documentation, and its review has been assigned to Liz Ortiz under 2021-00573. We may contact you if we require additional information. Our office ordinarily has 30 calendar days after receipt to complete our review, but our office has entered tolling in response to complications from COVID-19 and our review may be delayed as a result. Please contact the project reviewer or myself by email if you have any questions or concerns.

For future project review submissions to our office, we recommend sending documentation to oha.revcomp@alaska.gov.

Best,
Sarah

Sarah Meitl
Review and Compliance Coordinator
Alaska State Historic Preservation Office
Office of History and Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3561
Office: 907-269-8720

sarah.meitl@alaska.gov<mailto:sarah.meitl@alaska.gov>
Teleworking - Email is the best method of communication.

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Monday, May 10, 2021 1:52 PM
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Subject: FW: Z605630000 Saint Marys Airport Improvements Project Scoping Request

From: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov<mailto:melissa.jensen@alaska.gov>>
Sent: Friday, May 7, 2021 9:10 AM
To: ak-airport-env@faa.gov<mailto:ak-airport-env@faa.gov>; ak-airport-env@faa.gov<mailto:ak-airport-env@faa.gov>; douglass_cooper@fws.gov<mailto:douglass_cooper@fws.gov>; matthew.eagleton@noaa.gov<mailto:matthew.eagleton@noaa.gov>; sean.mcdermott@noaa.gov<mailto:sean.mcdermott@noaa.gov>; regpagemaster@usace.army.mil<mailto:regpagemaster@usace.army.mil>; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov<mailto:cindy.heil@alaska.gov>>; Lomax, Terri J (DEC) <terri.lomax@alaska.gov<mailto:terri.lomax@alaska.gov>>; Gleason, Erin P (DEC) <erin.gleason@alaska.gov<mailto:erin.gleason@alaska.gov>>; Estensen, Jeff L (DFG) <jeff.estensen@alaska.gov<mailto:jeff.estensen@alaska.gov>>; Brase, Audra L (DFG) <audra.brase@alaska.gov<mailto:audra.brase@alaska.gov>>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov<mailto:liz.ortiz@alaska.gov>>; Proulx, Jeanne A (DNR) <jeanne.proulx@alaska.gov<mailto:jeanne.proulx@alaska.gov>>; algaaciq@yahoo.com<mailto:algaaciq@yahoo.com>; ksmcityclerk@yahoo.com<mailto:ksmcityclerk@yahoo.com>; waltonksm@yahoo.com<mailto:waltonksm@yahoo.com>; matt99632@yahoo.com<mailto:matt99632@yahoo.com>; cityofmarshall@yahoo.com<mailto:cityofmarshall@yahoo.com>; David Herbert <dherbert@smcsd.us<mailto:dherbert@smcsd.us>>; billya47@gmail.com<mailto:billya47@gmail.com>; tkuhns@calistacorp.com<mailto:tkuhns@calistacorp.com>; algaaciq@yahoo.com<mailto:algaaciq@yahoo.com>; atcoperations@gci.net<mailto:atcoperations@gci.net>; pitkaspoint@yahoo.com<mailto:pitkaspoint@yahoo.com>; yupiit.of.andreafski@gmail.com<mailto:yupiit.of.andreafski@gmail.com>; yupiit.of.andreafski@gmail.com<mailto:yupiit.of.andreafski@gmail.com>; KDelaCruz@avcp.org<mailto:KDelaCruz@avcp.org>; info@avcp.org<mailto:info@avcp.org>; info@azachorok.com<mailto:info@azachorok.com>; pitkaspointnc@yahoo.com<mailto:pitkaspointnc@yahoo.com>; marshalltc.manager@gmail.com<mailto:marshalltc.manager@gmail.com>; office@maserculiq.com<mailto:office@maserculiq.com>;

sbusch@smnc.net<mailto:sbusch@smnc.net>; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov<mailto:chris.johnston@alaska.gov>>; Kromrey, Lindsey L (DOT) <lindsey.kromrey@alaska.gov<mailto:lindsey.kromrey@alaska.gov>>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov<mailto:brett.nelson@alaska.gov>>; Weingarth, Erik S (DOT) <erik.weingarth@alaska.gov<mailto:erik.weingarth@alaska.gov>>; Schaeffer, Calvin C (DOT) <calvin.schaeffer@alaska.gov<mailto:calvin.schaeffer@alaska.gov>>; Beck, Albert M L (DOT) <albert.beck@alaska.gov<mailto:albert.beck@alaska.gov>>; community@flygrant.com<mailto:community@flygrant.com>; rzerkel@lynden.com<mailto:rzerkel@lynden.com>; cfomai@nac.aero<mailto:cfomai@nac.aero>; reverts@evertsair.com<mailto:reverts@evertsair.com>; rob@ravnalaska.com<mailto:rob@ravnalaska.com>; Lee Ryan <lryan.air@gmail.com<mailto:lryan.air@gmail.com>>
Subject: Z605630000 Saint Marys Airport Improvements Project Scoping Request

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary's Airport Improvements project, State Project Number #Z605630000. The DOT&PF anticipates that construction of this project could begin in 2022.

DOT&PF is requesting scoping comments to support preparation of an environmental document for the proposed project in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Please identify any environmental, cultural, historic, or subsistence resources you believe may potentially be impacted by the proposed project, and also provide any other information you deem valuable to the environmental documentation process. Your responses will help provide us with the necessary input to develop and design a proposed final project that avoids and minimizes as many potential adverse environmental and human impacts as possible.

If you have any questions or need additional information do not hesitate to ask.

Thanks,
Missy Jensen

From:	Jensen, Melissa L (DOT)
To:	Emily Creely; Melissa Osborn; Johnston, Christopher F (DOT)
Subject:	[EXT] FW: Z605630000 Saint Marys Airport Improvements Project Scoping Request
Date:	Monday, May 10, 2021 1:51:56 PM
Attachments:	image001.png

WARNING: *External Sender - use caution when clicking links and opening attachments.*

From: Callie Delgado <callie.delgado@ravnalaska.com>
Sent: Monday, May 10, 2021 1:40 PM
To: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Rob McKinney <Rob@ravnalaska.com>
Subject: RE: Z605630000 Saint Marys Airport Improvements Project Scoping Request

Hi Missy,

I confirmed with our director of airports as well as our station manager for St. Mary's and at this time, we have nothing to add in terms of improvements. We are, however, excited to seeing this project come to fruition and wish you and your team the best of luck!

Please feel free to reach out to me directly should you have any further questions or concerns.

V/r,

Callie Delgado
Manager, **Contact Center**
Ravn Alaska
(907) 266 8491 Direct
(907) 266 8394 Reservations
(800) 866 8394 Toll Free
4700 Old International Airport Rd
Anchorage, AK 99502
callie.delgado@ravnalaska.com

ravn alaska

"We Call Alaska, Home!"

From: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Sent: Monday, May 10, 2021 1:32 PM
To: Rob McKinney <Rob@ravnalaska.com>; Callie Delgado <callie.delgado@ravnalaska.com>

Subject: Re: Z605630000 Saint Marys Airport Improvements Project Scoping Request

Yes,

Callie, how can we help you?

Missy

On May 10, 2021, at 1:30 PM, Rob McKinney <Rob@ravnalaska.com> wrote:

Melissa,

You can reach out to Callie Delgato copied above. She will take good care of you.

Rob

From: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Sent: Friday, May 7, 2021 9:10 AM
To: ak-airport-env@faa.gov; ak-airport-env@faa.gov; douglass_cooper@fws.gov; matthew.eagleton@noaa.gov; sean.mcdermott@noaa.gov; regpagemaster@usace.army.mil; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; Lomax, Terri J (DEC) <terri.lomax@alaska.gov>; Gleason, Erin P (DEC) <erin.gleason@alaska.gov>; Estensen, Jeff L (DFG) <jeff.estensen@alaska.gov>; Brase, Audra L (DFG) <audra.brase@alaska.gov>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; Proulx, Jeanne A (DNR) <jeanne.proulx@alaska.gov>; algaaciq@yahoo.com; ksmcityclerk@yahoo.com; waltonksm@yahoo.com; matt99632@yahoo.com; cityofmarshall@yahoo.com; David Herbert <dherbert@smcsd.us>; billya47@gmail.com; tkuhns@calistacorp.com; algaaciq@yahoo.com; atcoperations@gci.net; pitkaspoint@yahoo.com; yupiit.of.andreafski@gmail.com; yupiit.of.andreafski@gmail.com; KDelaCruz@avcp.org; info@avcp.org; info@azachorok.com; pitkaspointnc@yahoo.com; marshalltc.manager@gmail.com; office@maserculiq.com; sbusch@smnc.net; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Kromrey, Lindsey L (DOT) <lindsey.kromrey@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Weingarth, Erik S (DOT) <erik.weingarth@alaska.gov>; Schaeffer, Calvin C (DOT) <calvin.schaeffer@alaska.gov>; Beck, Albert M L (DOT) <albert.beck@alaska.gov>; community@flygrant.com; rzerkel@lynden.com; cfomai@nac.aero; reverts@evertsair.com; Rob McKinney <Rob@ravnalaska.com>; Lee Ryan <lryan.air@gmail.com>
Subject: Z605630000 Saint Marys Airport Improvements Project Scoping Request

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary's Airport Improvements project, State Project Number #Z605630000. The DOT&PF anticipates that construction of this project could begin in 2022.

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If you have any questions or need additional information do not hesitate to ask.

Thanks,
Missy Jensen

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Anchorage Fish and Wildlife Conservation Office
4700 BLM Road
Anchorage, Alaska 99507

In Reply Refer to:
FWS/IR11/AFWCO

June 7, 2021

Ms. Melissa Jensen
Alaska Department of Transportation and Public Facilities
2301 Peger Road
Fairbanks, Alaska 99709

Subject: NEPA Comments on the effects of the proposed Saint Mary's Airport Improvements Project, State Project #Z605630000 (Consultation 07CAAN00-2021-CPA-0078)

Dear Ms. Jensen,

Thank you for the opportunity to provide early comments on the Saint Mary's Airport Improvements Project, State Project #Z605630000. The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is proposing to upgrade existing aviation facilities under the Saint Mary's Airport Improvements project. You have requested scoping comments pursuant to the National Environmental Policy Act of 1969 (NEPA).

Project components include improvements to the primary and secondary runways, resurfacing of the taxiways and other operational surfaces, improvement of airport drainage systems, and replacement of runway and taxiway lighting and navigational aids. To facilitate construction, vegetation adjacent to the runways would be cleared. To control dust after placement of crushed aggregate for surface upgrades, you would apply a dust palliative. A final material source has not yet been identified, but you have proposed several alternatives under consideration.

You have made preliminary assessments of potential impacts to fish, eagles and eagle nests, threatened and endangered species, migratory birds and their habitats, and marine mammals. You have identified mitigation measures to address anticipated impacts. Furthermore, you acknowledge the potential need for additional consultation with the U.S. Fish and Wildlife Service (Service) to address impacts to our trust resources.

We appreciate your commitment to protecting Alaska's fish, wildlife, and vegetation. In addition to the mitigation measures you have stated in the preliminary environmental research document, please consider the following actions to increase conservation outcomes:

Minimizing impacts to eagles and migratory birds:
The Service works with project proponents to address impacts on trust resources, including migratory birds. Conservation measures for migratory birds may also benefit non-migratory species. We recommend considering the following voluntary measures to minimize impacts to migratory birds:

- Where practicable, minimize and concentrate construction activities, infrastructure, and man-made structures (e.g., roads, parking lots, and staging areas) to minimize the project's footprint and its impact on bird habitat. Consider staging construction activities and infrastructure in cultivated, fragmented, or degraded habitats rather than relatively intact areas, and/or co-locate construction activities and infrastructure immediately adjacent to already-disturbed areas, including roads and existing utility rights-of-way.
- Minimize human presence near nesting birds during construction and maintenance actions.
- With the proposed construction of new airport lighting, the Service recommends reviewing and implementing, where applicable, the Federal Aviation Administration's Advisory Circular AC70/7460-1L new lighting standards to further reduce impacts on migratory birds. This document can be found here: http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_.pdf
- Educate all employees, contractors, and/or site visitors of relevant rules and regulations that protect wildlife. See the Service webpage on Regulations and Policies (https://www.fws.gov/birds/policies-and-regulations.php) for more information on regulations that protect migratory birds.

Limiting the Spread of Invasive Species:
Invasive species are one of the greatest threats to native biodiversity and are a significant driver of native species loss worldwide. Project proponents play an important role in limiting the spread of invasive species by implementing conservation measures in their project design. As this project will involve vegetation clearing and the acquisition of crushed aggregate, we recommend considering the following voluntary measures:

- Use certified weed free gravel (http://plants.alaska.gov/invasives/weed-free-gravel.htm).
- When using wetland matting it should be cleaned before being transported to the site and before removal from the site.
- Revegetate with native and local plant species. Vigorous non-invasive perennial grass species can also be considered since they can minimize the potential of invasive species to become established. The Alaska Division of Agriculture's Plant Material Center (http://plants.alaska.gov/) is a good reference for appropriate seed mixes.
    - Re-vegetate bare soils as soon as feasible to minimize the possible establishment of invasive plant species.
    - Stabilize disturbed soils using appropriate erosion and sediment control procedures as soon as possible. Use certified invasive-free materials.
- Avoid infested areas to the extent possible. If not possible, consider the seasonality of the work to minimize the operations when invasive species seeds or would be viable and readily moved. The more geographically distant or disturbed sites in Nome may present more of a threat for spreading invasive species as opposed to other identified sites to

acquire crushed aggregate. If Nome is used as a source of materials, we recommend ensuring rigorous measures to prevent the introduction of invasive species.

- Equipment should arrive and leave the project clean without visible soil clumps, plant, or animal material.
  - Use a pressure washer paying special attention to wheel wells, areas behind the bumper, trailers and other areas that are likely to catch vegetation or seeds.
  - Equipment washing should occur at the same location during project operations; this site should then be surveyed regularly and treated as necessary. Do not clean equipment in or near waterways as it may promote the spread of invasive plant species downstream.

Record and report locations of invasive plants that are new to a particular area. Visit https://accs.uaa.alaska.edu/invasive-species/submit-data-to-akepic/ to record and report your findings.

<u>Limiting Impacts to Wetlands:</u>
Wetlands serve important ecological function and are very vulnerable to impacts. Project proponents play an important role in reducing impacts to wetlands by incorporating conservation measures in project designs. We recommend the following voluntary measures:

- Isolate wetlands from construction-generated sediment and pollutants (i.e., soil sediments, fuels, grease and oil) with properly installed silt fencing to avoid and minimize water quality degradation to protect respiratory gill function of fish. See https://www.adfg.alaska.gov/static/lands/habitatrestoration/streambankprotection/pdfs/csbs_siltfence.pdf
- Use the appropriate size of culverts and bridge structures to maintain surface and subsurface sheet flow of wetland hydrology and to promote wetland function (i.e., maintain areas of upwelling, downwelling, filtering of nutrients), aquatic organism movement, and water exchange in important feeding, rearing and refugia habitats.

The Service is happy to provide technical assistance as needed. If you have any questions or need additional information, please contact Mr. Jake Gottschalk at jake_gottschalk@fws.gov or (702) 994-4927. Please reference consultation number 07CAAN00-2021-CPA-0078.

Sincerely,

Douglass M. Cooper
Ecological Services Branch Chief

From:	Johnston, Christopher F (DOT)
To:	Emily Creely; Melissa Osborn
Subject:	[EXT] FW: Z605630000 Saint Marys Airport Improvements Consultation Initiation
Date:	Thursday, June 24, 2021 2:58:08 PM
Attachments:	image001.png

WARNING: *External Sender - use caution when clicking links and opening attachments.*

FYI. SHPO response to initiation.

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Thursday, June 24, 2021 10:49 AM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Proue, Molly M (DOT) <molly.proue@alaska.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Gilbertsen, Jack (FAA) <jack.gilbertsen@faa.gov>
Subject: RE: Z605630000 Saint Marys Airport Improvements Consultation Initiation

3130-1R FAA / 2021-00573

Good morning Holly,

The Alaska State Historic Preservation Office received your correspondence (dated June 8, 2021) on June 8, 2021. Following our review of the documentation provided in the initiation letter, we have no objections to the proposed area of potential effect (APE), or level of effort proposed for identification at this time given the early stage of project design and development. Our office is anticipating the forthcoming survey report that includes the Pilcher Mountain materials source and access road, as well as the other previously un-surveyed areas within the APE, and looks forward to continued consultation on this project as it moves to findings of effect and toward completion.

Thank you for sending a Section 106 consultation initiation letter to our office. Please contact Liz Ortiz at (907)269-8722 or liz.ortiz@alaska.gov if we can be of further assistance.

Best,
Liz Ortiz

Review and Compliance
Alaska State Historic Preservation Office
Office of History and Archaeology
Department of Natural Resources
550 W. 7th Ave, Suite 1310
Anchorage AK, 99501
(907) 269-8722
liz.ortiz@alaska.gov

Due to Covid-19 concerns, we are currently teleworking. Email is the best communication method.
Be Well!

From: Ortiz, Liz M (DNR)
Sent: Tuesday, June 8, 2021 1:47 PM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>; DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Proue, Molly M (DOT) <molly.proue@alaska.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Gilbertsen, Jack (FAA) <jack.gilbertsen@faa.gov>
Subject: RE: Z605630000 Saint Marys Airport Improvements Consultation Initiation

Hi Holly,

This project is logged in with me as file number 2021-00573. We are still tolling, but I will get back to you as soon as I can.

Thanks!
Liz Ortiz

Archaeologist II - Review and Compliance
Alaska State Historic Preservation Office
Office of History and Archaeology
Department of Natural Resources
550 W. 7th Ave, Suite 1310
Anchorage AK, 99501
(907) 269-8722
liz.ortiz@alaska.gov
We are currently teleworking; email communication is best. Be well!

From: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Tuesday, June 8, 2021 1:06 PM
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Proue, Molly M (DOT) <molly.proue@alaska.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Gilbertsen, Jack (FAA) <jack.gilbertsen@faa.gov>
Subject: Z605630000 Saint Marys Airport Improvements Consultation Initiation

Hi Liz,

Please see attached consultation Initiation letter for the Saint Mary's Airport Improvements Project.

Sincerely,
Holly McKinney

Holly McKinney, PhD
Archaeologist (PQI)
Cultural Resource Specialist
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907) 451-2227
Fax (907)451-5126

In-Office Schedule: Monday-Friday 7:00AM-3:00PM

From:	Jensen, Melissa L (DOT)
To:	Emily Creely
Subject:	[EXT] FW: Z605630000 Saint Marys Airport Improvements Consultation Initiation
Date:	Tuesday, June 08, 2021 1:55:01 PM
Attachments:	image001.png Z605630000_Saint_Marys_Airport_Improvements_Consultation_Initiation_Packet_SHPO_06082021.pdf

From: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Tuesday, June 8, 2021 1:06 PM
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Proue, Molly M (DOT) <molly.proue@alaska.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Gilbertsen, Jack (FAA) <jack.gilbertsen@faa.gov>
Subject: Z605630000 Saint Marys Airport Improvements Consultation Initiation

Hi Liz,

Please see attached consultation Initiation letter for the Saint Mary's Airport Improvements Project.

Sincerely,
Holly McKinney

Holly McKinney, PhD
Archaeologist (PQI)
Cultural Resource Specialist
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907) 451-2227
Fax (907)451-5126

In-Office Schedule: Monday-Friday 7:00AM-3:00PM

Findings Letter to be inserted here.

MEETING SUMMARY

Project:	Saint Mary's Airport Improvement Project
Project No:	215028
Meeting Date:	June 3, 2021
Location:	Virtual via, ZOOM
Project Team:	Emily Creely (EC), DOWL
	Melissa Osborn (MO), DOWL
	Chris Johnston (CJ), Alaska DOT&PF
	Melissa Jensen (MJ), Alaska DOT&PF
	Erik Weingarth (EW), Airport Manager - Saint Mary's Airport, Alaska DOT&PF
	Harrison Houston (HH), SALT
	Michael Fredericks (MF), SALT
Community Participants:	Marvin Parent (MP), Tribal Administrator, Native Village of Marshall
	John Andrews (JA), Transportation Director, Native Village of Marshall
	George Beans (GB), Tribal President,Yupiit of Andreasfsky (Saint Mary's TC)
	Mary Martinez (MM), Land Planner, Calista Corporation
	Ivy Lamont (IL), IGAP Coordinator, Native Village of Pitkas Point

The purpose of the meeting was to review the project history, current project overview, environmental review, and discuss any questions/concerns/comments.

The following items were discussed:

Overall Project Goal:

- Rehabilitate the runways, taxiways, and main apron at St. Mary's airport to current standards.
    - Resurface both runways at their existing lengths.
    - Expand Runway Safety Areas (RSA) on each runway.
    - Replace airport lighting systems.
    - Working with FAA on replacing of their navigational aids.
- This is an FAA funded project.
- An environmental document in accordance with the National Environmental Policy Act (or NEPA), must be created to document and address any potential impacts to the environment. The environmental review addresses both the immediate project scope and any impacts connected to the project such as material sites.

- This meeting provides an opportunity for public comments.

Project History:
Alaska DOT&PF's Christopher Johnson provided a historical overview of the project:

- 1990's Last major Airport Improvements Project
- 2016 Agency and Community Discussions: Saint Mary's Airport Resurfacing Project
    - Identified the need to update the aviation forecast and planning documents to determine how best to bring the airport into conformance with current design standards and ensure the airport meets the community need.
- 2018 Public Meeting: Aviation Forecasting and to Determine Critical Aircraft for Airport (April)
    - Gathered information necessary to complete an aviation forecast and determine critical aircraft.
- 2019 Public Meeting Present Proposed Main Runway Concepts (March)
    - Presented the results from practicability study and the proposed project concept.
    - Confirmed the existing length of the runways.
    - Confirmed the needs.
- 2019/20 Updated Airport Planning Documents and Concept Design
    - Updated airport planning documents.
    - Begin design process.
- 2021 Complete Environmental Review and Design (Current)
    - Partnered with DOWL to complete the actions regarding environmental and design.
- 2021/22 Bidding for Construction
- 2022 Construction Begins
    - Starts in the summer of 2022.
    - Anticipates 2 years.

Current Project Overview:
Melissa Osborn with DOWL used figure 2 of the presentation to provide an overview of the project in depth:

- The project resurface runway 17/35 with gravel per number 1, figure 2.
- The runway will remain at 6000 feet.
- On the south end of runway, we will move the landing point approximately 400 feet north shown as number 4, figure 2.
- On the north end of the runway there will be a 415' x 300' runway safety area constructed. This area is not usable for take-off or landing but is there for an overrun shown as number 5, figure 2.
- Also on runway 17/35 is the replacement of all lighting and signage per number 11, figure 2.
- On the other, smaller runway 6/24 the safety area will be widened about 17.5 feet on each site as show number 6, figure 2.
- The lighting and signage on runway 6/24 will be replaced.
- Moving to taxiways A and B that lead from the main runway to the parking apron, those taxiways will be both be rehabilitated. They will both stay gravel, and the lighting and signage will be replaced per number 2, 12, 9, figure 2.
- At the apron, number 7 & 8, figure 2, the surfaces will be replaced. Where there is gravel it will remain gravel and where is asphalt it will remain asphalt. There will also be lighting and signage replaced.
- Number 9 and 10, the primary wind cone and segmented circle will be replaced.

- The GA apron is not a part of the scope. It will remain as it is now.

Suitable Material Required

- There are two kinds of rock that can be used to meet FAA standards.
- Some of that rock can be found locally, and some will need to be barged in from either Marshall or Nome.
- We are currently assessing where we will get that rock, as well as how and when we will bring it to the project site.

Environmental Review Overview

Emily Creely with DOWL discussed the Environmental Review (ER) for the project required by the National Environmental Policy Act.

- The ER requires Federal Agencies (Federal Aviation Administration) to assess the environmental effects of proposed projects.
- Currently conducting the ER through an Environmental Assessment (EA) which is a document that contains:
  - Reason for the project
  - Details the project plan and considered alternatives
  - Potential effects of the project
  - Document's outreach to agencies and public
- The Environmental Assessment will:
  - Look at impacts associated with finding adequate rock material sources to do the work and figure out how to access and transport the material to the site.
  - Look at ways to minimize impacts to the communities and environment while still getting the job done.
- Material Site Options to be evaluated in the Environmental Assessment:
  - Access option for material from Nome or Marshall through a temporary barge landing at the Borealis Fish Camp
  - Pitka's Point material site (slide 6)
  - Saint Mary's material site (slide 6)
  - Marshall material site – harder rock runway surfacing (slide 7)
  - Mountain Village material site (slide 8)
- Field studies in support material site evaluation of the project are conducted in the next 3 weeks.
  - Includes a wetland delineation team – next week
  - Cultural and historic resources team – the week following the wetland delineation team
- Environmental Assessment draft completed in July and out to communities for comment.

Next Steps

Michael Fredericks presented other ways to provide comment or ask questions about the project:

- Next Community Meeting: End of July
- Project Website: www.saintmarysairportimprovements.com
  - Provides project information
  - Link to recording and summary of this meeting
  - Comment form
  - Contact information

Saint Mary’s Airport Public Meeting

Public Outreach Record Chart

06/16/21 SALT

The engagement team completed the following public engagement in each community impacted by the project.

Engagement Date & Description		Stakeholder Organization														
		Yupiit of Andreasfsky (St. Marys Tribal Council)	Algaaciq Native Village Tribal Council	City of St. Marys	Asa'carsarmiut Tribe (Tribal Council)	City of Mountain Village	Native Village of Pitka’ s Point	City of Marshall	Marshall Traditional Council	Ohogamiut Traditional Council	Saint Mary's School District	Nerklikmute Native Corporation	Calista Corporation	Alaska Village of Council Presidents	Azachorok, Incorporated	Saint Mary's Native Corporation
5/15:	Introduction to the project and discussion of meeting dates.	X	X	X	X	X	X	X	X	X						
5/20:	Follow Up calls as needed	X	X	X	X	X	X	X	X	X						
5/26:	Meeting Flyer Distribution	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6/01:	Facebook Post Distribution	X	X	X	X	X	X	X	X	X						
6/03:	Meeting Reminder and Presentation Distribution	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Questions/Comments/Concerns:

Q: When you are done with the runway resurfacing; will the length be 6000 ft? (George)
A: Yes, planning a 6000ft runway. Main change is extending the safety areas gravel embankment.

Q: So, Area 5 shown on Figure 2 is not an extension of the runway? (George)
A: Yes, based on the type of aircraft that uses the airport, the length beyond the runway threshold called the runway safety area (RSA) was only 200 ft and needs to be 600 ft, so it wasn't meeting the standard. The extension shown on the map as Area 5 allows us to meet the runway safety area requirements.

Q: On this project, in total; how much CO1/CO2 (greenhouse gases) do you anticipate will be displaced for this runway/quarry? (In reference to the decreased numbers of Salmon/King Salmon over the years) (Marvin)
A: Will investigate and provide information.

Q: There are two routes in Marshall's inventory (that are NOT surveyed) that follow the approximate route to the barge landing site. (John)
A: Design Team Requests: Tribal Transportation Plan from John

Q: Proposed Marshall barge landing area includes a graveyard and "a handful" of native allotments. (John)
A: Worked with the city/Calista and representation from the Tribe and is ensuring:

- Additional work to flush out route.
- Suitable Study Area.
    - Get permission to conduct studies in the area.
- Plan will have No impact on graveyard.

Q: In the future, will someone contact the owners of the native allotments?
A: Current plan is designed around the native allotment but will reach out if necessary or if changes transpire.

Prepared by Harrison Houston, Project Assistant, SALT
cc: all attendees

Attachment: Meeting Presentation
Engagement Record

Saint Mary’s Airport Improvement Project

Community Engagement Meeting

June 3, 2021

Agenda

Welcome

Introductions

Project History – Chris Johnston, DOT&PF

Current Project Overview – Melissa Osborn, DOWL

Environmental Review – Emily Creely, DOWL

Questions/Concerns/Comments

Next Steps

Project Location & Vicinity

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: April 26, 2021

FIGURE 1 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Project Extent

Project Timeline

2016
Agency and Community Discussions: Saint Mary's Airport Resurfacing project

2018
Public Meeting: Aviation Forecasting and to Determine Critical Aircraft for Airport

2019
Public Meeting: Present Proposed Main Runway Concept

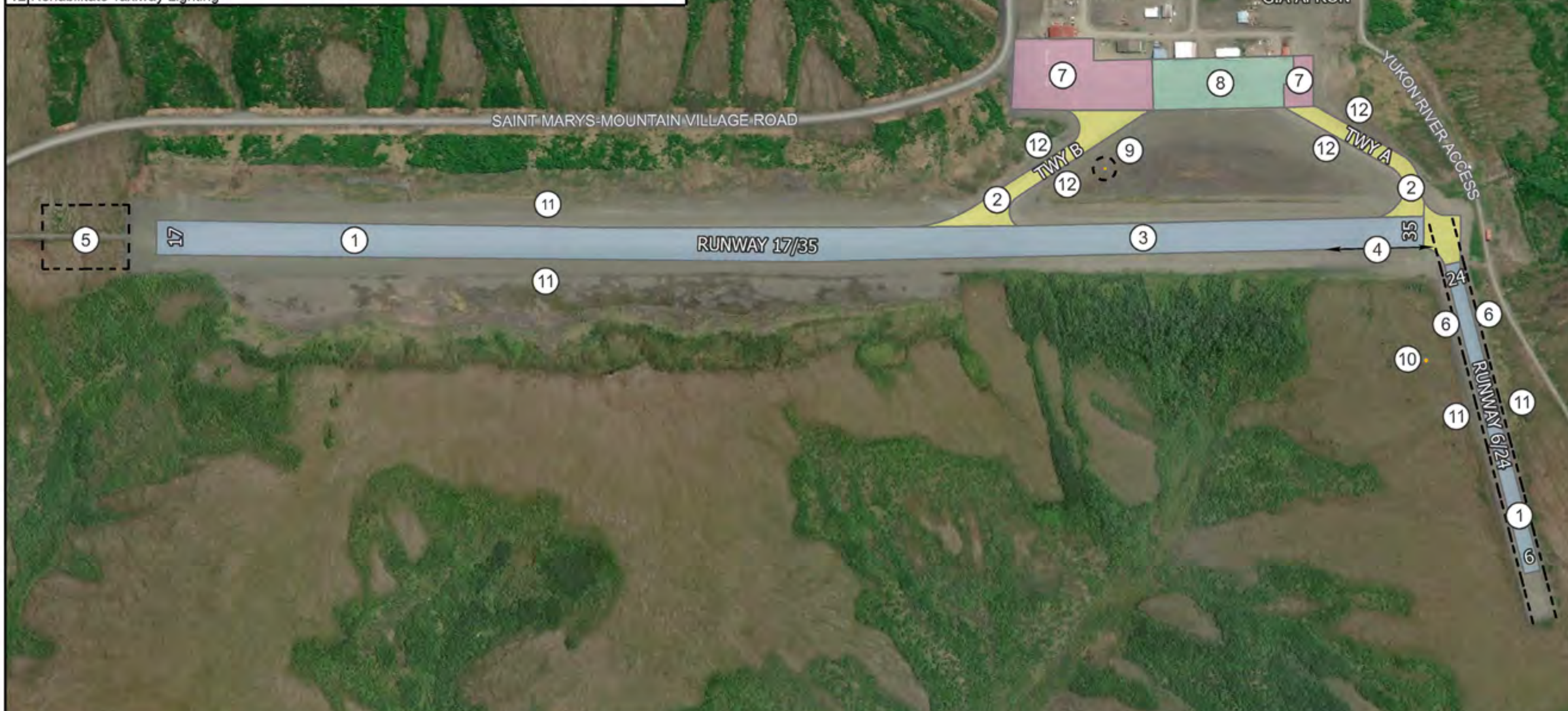
2019/2020
Updated Airport Planning Documents and Concept Design

2021
Complete Environmental Review and Design

2021/2022
Bidding for Construction

2022-2024
Construction Begins in Summer and anticipated to last 2 years

AIRPORT IMPROVEMENTS	
1	Resurface Runway
2	Resurface Taxiway
3	Lengthen Runway by 2 feet to be 6,010-foot long x 150-foot wide
4	Move Landing Point approximately 400 feet north. Operational Surface will remain and be maintained
5	Construct approximately 415' long x 300' wide embankment to extend RSA north of current endpoint
6	Widen outer edges of RSA by 17.5 feet on each side of runway
7	Resurface Existing Gravel Apron
8	Repave Existing Asphalt Apron
9	Replace Wind Cone & Segmented Circle
10	Replace Supplemental Wind Cone
11	Rehabilitate Runway Lighting
12	Rehabilitate Taxiway Lighting



Gravel Apron
Paved Apron
Taxiway
Wind Cone
Segmented Circle
RSA Extension
Runway

Feet
0 190 380 760

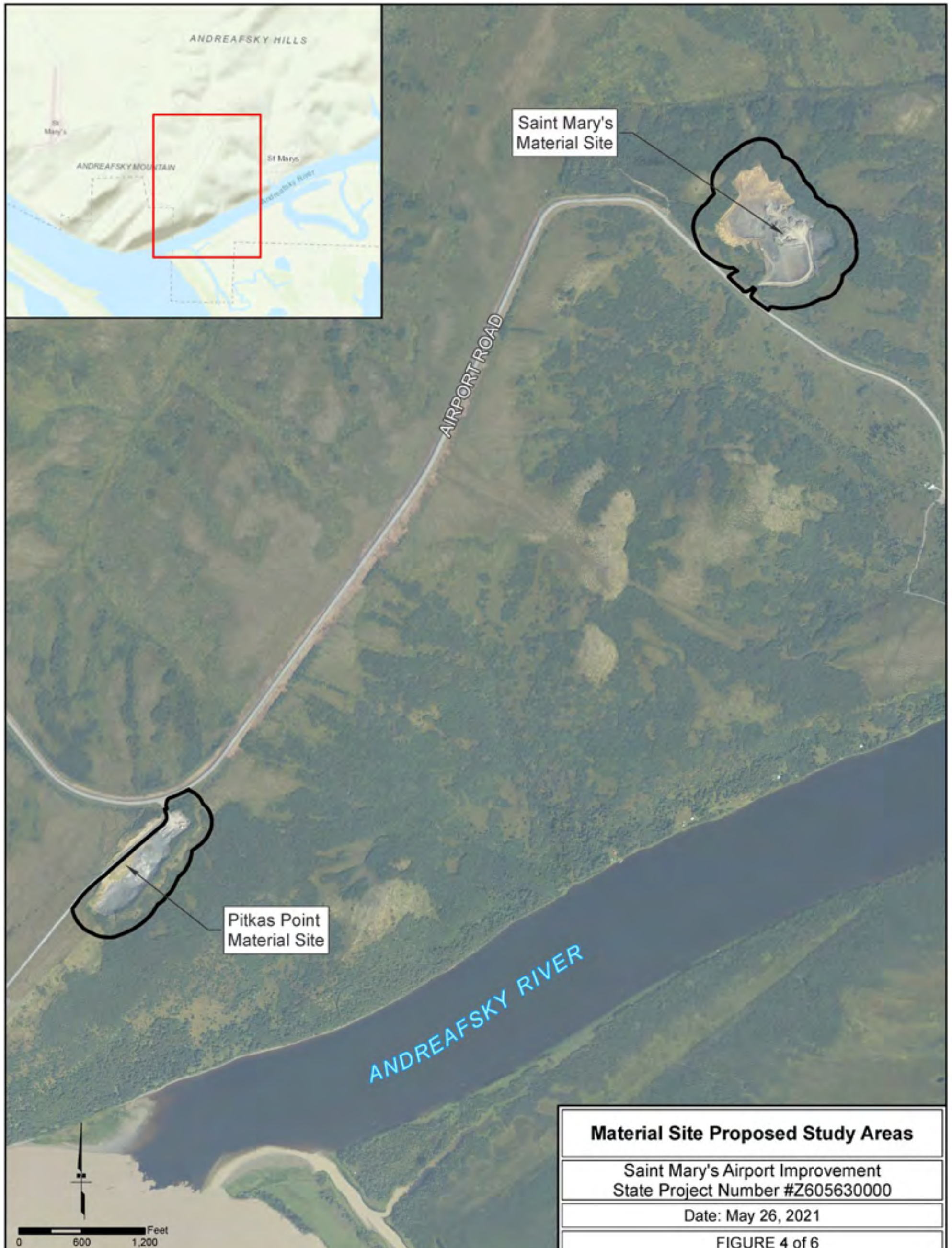
Proposed Airport Improvements

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: April 28, 2021

FIGURE 2 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Airport Improvements
Imagery Layer: Maxar



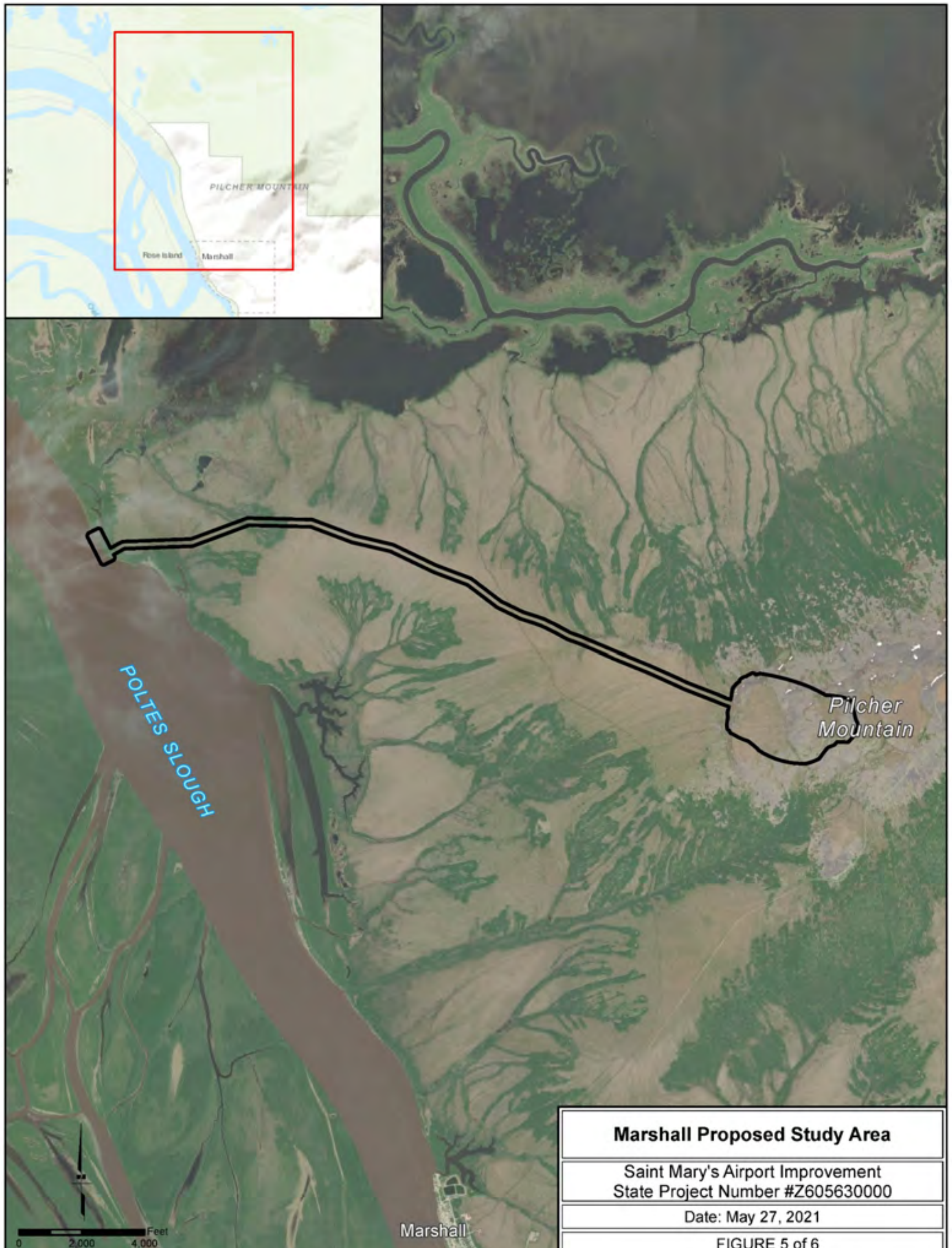
Material Site Proposed Study Areas

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: May 26, 2021

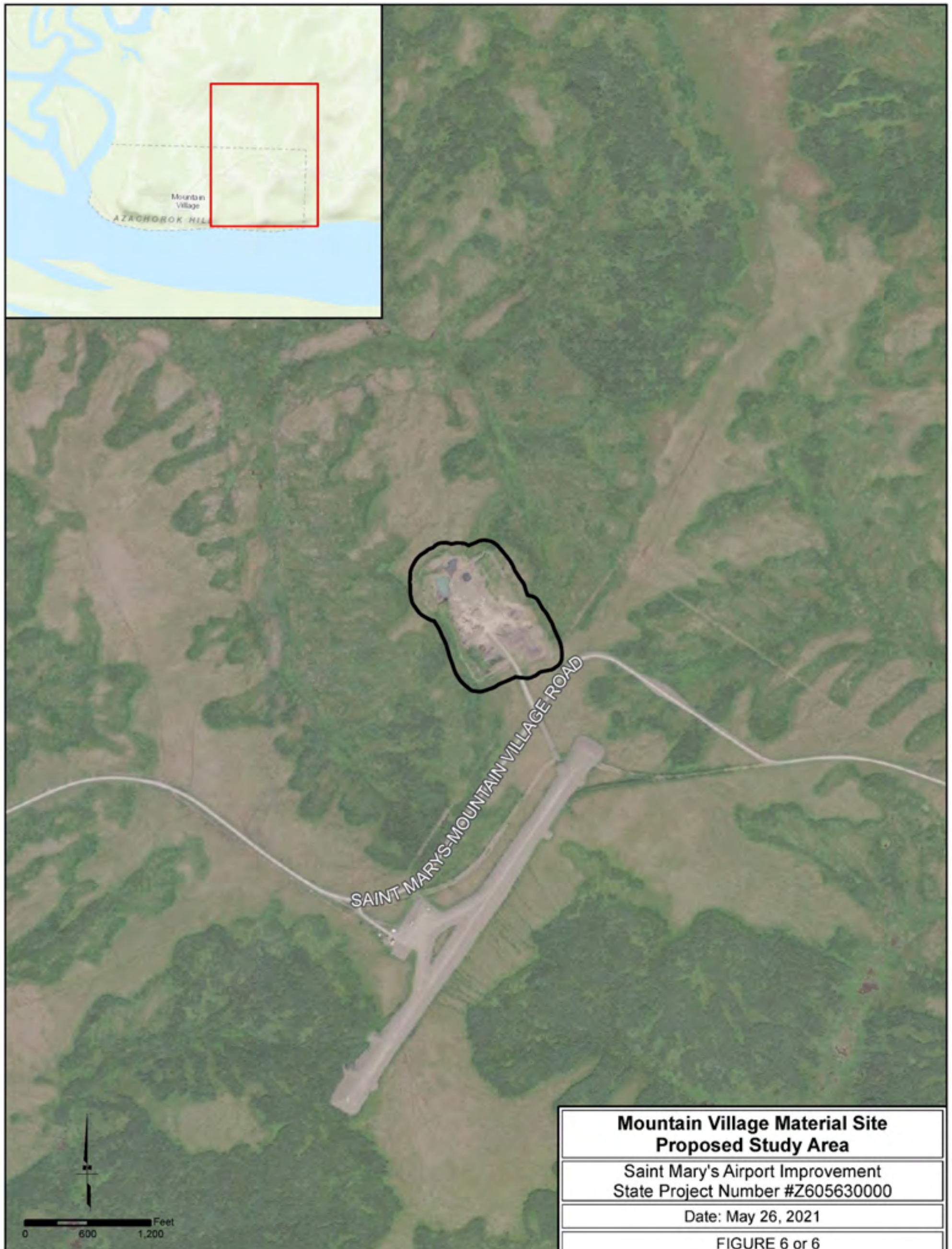
FIGURE 4 of 6

K:\23\15143-01\60GIS\15143\15143.aprx Proposed Wetand Study Area - Mat Sites



Marshall Proposed Study Area
Saint Mary's Airport Improvement State Project Number #Z605630000
Date: May 27, 2021
FIGURE 5 of 6

K:\23\15143-01\60GIS\15143\15143.aprx Proposed Wetand Study Area - Marshall



Mountain Village Material Site
Proposed Study Area

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: May 26, 2021

FIGURE 6 or 6

K:\23\15143-01\60GIS\15143\15143.aprx Proposed Wetand Study Area - Mt Village

Next Steps

Next Community Meeting
End of July

Project Website:
www.saintmarysairportimprovements.com

You Are Invited!

Saint Mary's Airport Improvement Project

The Anchorage Department of Transportation and Public Facilities (DOT&PF) is proposing to improve the Saint Mary's Airport with upgrades to the existing aviation facilities, aging navigational aids, and drainage. Pre-construction activities including environmental permitting will take place in 2021. Construction is anticipated to begin in 2022.

Community Engagement Meeting

When: 4:00pm, Thursday June 3rd, 2021

Virtual Link: https://us02web.zoom.us/j/85685059984

Call-In Number: 669-900-9128, Meeting ID: 856 8505 9984

Agenda: The purpose of the meeting is to gather community input on the Saint Mary's Airport Improvement project. ADOT&PF staff will provide an overview of the project history, the current project status, and the proposed project schedule. Staff will provide time to take community comments and answer questions.

For more information visit: www.saintmarysairportimprovements.com

For questions regarding the project, please contact Chris Johnston, Project Manager, Alaska DOT&PF, 907-451-2322 or chris.johnston@alaska.gov

For questions regarding the meeting, please contact Michael Fredericks, Public Involvement Coordinator, 907-223-3493 or mfredericks@salt-ak.com

This project is being developed in accordance with the following Executive Orders (EO): EO12898 Environmental Justice, EO 11990 Wetland Involvement, EO 11593 Protection and Enhancement of Cultural Resources, EO11988 Floodplain Management, and EO13112 Invasive Species, as amended by EO 13751. DOT&PF operates all programs without regard to race, religion, color, gender, age, marital status, ability, or national origin. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi_statement.shtml.

AIRPORT IMPROVEMENTS	
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2	Resurface Taxiway
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10	Replace Supplemental Wind Cone
11	Rehabilitate Runway Lighting
12	Rehabilitate Taxiway Lighting

Gravel Apron
Paved Apron
Taxiway
Wind Cone
Segmented Circle
RSA Extension
Runway

0 190 380 760 Feet

Proposed Airport Improvements

Saint Mary's Airport Improvement
State Project Number #Z605630000

Date: April 28, 2021

FIGURE 2 OF 5

K:\23\15143-01\60GIS\15143\15143.aprx Airport Improvements
Imagery Layer: Maxar


JOIN US TONIGHT!
Saint Mary's Airport Improvement Project
Community Engagement Meeting
When: 4:00pm, Thursday June 3, 2021
Virtual Link: https://us02web.zoom.us/j/85685059984
Call-In Number: 669-900-9128, Meeting ID 856 8505 9984

Public Meeting Sign In Sheet

Meeting: Saint Mary's Airport Improvements

Date: June 3, 2021

Location: Via Zoom

This information is voluntary. Its purpose is to ensure fair and equal representation by the public in all projects and programs administered by the Alaska Department of Transportation and Public Facilities.

Please print legibly- Thanks!

Name/Email/Phone	Company/Address/ Signature	Please check all that apply:
Marvin Parent	Native Village of Marshall	Female ☐ Male ☒ White ☐ Hispanic ☐ AK Native ☒ Asian ☐ N. American ☐ Pac. Islander ☐ Black ☐ Other ☐
John Andrews	Native Village of Marshall	Female ☐ Male ☒ White ☐ Hispanic ☐ AK Native ☒ Asian ☐ N. American ☐ Pac. Islander ☐ Black ☐ Other ☐
Mary Martinez	Calista Corporation	Female ☒ Male ☐ White ☐ Hispanic ☐ AK Native ☒ Asian ☐ N. American ☐ Pac. Islander ☐ Black ☐ Other ☐
Ivy Lamont	Native Village of Pitkas Point	Female ☒ Male ☐ White ☐ Hispanic ☐ AK Native ☒ Asian ☐ N. American ☐ Pac. Islander ☐ Black ☐ Other ☐
George Beans	Yupiit of Andreasfsky	Female ☐ Male ☒ White ☐ Hispanic ☐ AK Native ☒ Asian ☐ N. American ☐ Pac. Islander ☐ Black ☐ Other ☐

Organization Type	Organiztion	First Name	Last Name	Title	Address
ANCSA Regional Corporation	Calista Corporation	Andrew	Guy	President/Chief Executive Officer	301 Calista Court, Suite A
ANCSA Regional Corporation	Calista Corporation	Tisha	Kuhns	VP of Land and Natural Resources	5015 Bussiness Park Blvd., Ste 3000
ANCSA Village Corporation	Azachorok, Incorporated	Loren	Peterson	President	P.O. Box 32213
ANCSA Village Corporation	Maserculiq, Incorporated	Dolores	Hunter	Chair	P.O. Box 90
ANCSA Village Corporation	Nerkikmute Native Corporation	William	Ashton	President	P.O. Box 87
ANCSA Village Corporation	Pitka's Point Native Corporation	Bibianna	Sage	President	P.O. Box 289
ANCSA Village Corporation	Saint Mary's Native Corporation	Florence	Busch	President	P.O. Box 149
City Government	City of Marshall	Jaylene	Mayor	Mayor	P.O. Box 09
City Government	City of Mountain Village	Peter	Andrew	Mayor	PO Box 32085
City Government	City of Saint Mary's	Sven	Paukan	Mayor	P.O. Box 209
City Government	City of Saint Mary's	Marvla	Sipary	City Clerk	P.O. Box 209
City Government	City of Saint Mary's	Walton	Smith	City Manager	P.O. Box 209
City Government	Saint Mary's School District	Herbert	David	Superintendent	PO Box 9
Regional Non-Profit	Association of Village of Council Presidents	Scott	Hess	AVCP Unit 2	P.O. Box 219
Tribal Government	Algaaciq Native Village	Flora	Paukan	President	P.O. Box 48
Tribal Government	Asa'carsarmiut Tribe	James C.	Landlord	First Chief	P.O. Box 32249
Tribal Government	Native Village of Marshall	Nicolai	Duny	President	P.O. Box 110
Tribal Government	Native Village of Marshall	Marvin	Parent	Administrator	P.O. Box 110
Tribal Government	Native Village of Marshall	John	Andrew	Transportation Director	P.O. Box 110
Tribal Government	Native Village of Pitka's Point	Margaret	Guidry	President	P.O. Box 127
Tribal Government	Yupiit of Andreafsky	Gail	Alstrom-Beans	President	P.O. Box 88
Tribal Government	Yupiit of Andreafsky	Richard	Alstrom	Tribal Administrator	P.O. Box 88

MEETING SUMMARY

PROJECT:	Saint Mary's Airport Improvements	DATE:	6/3/2021
PROJECT NUMBER:	15143.01	TIME:	10:00
ORGANIZER:	Emily Creely	SUBJECT:	Marshal Material Site

ATTENDEES:	ORGANIZATION:
Emily Creely, Gary Jenkins, Melissa Osborn	DOWL
Chris Johnston, Missy Jensen, Lindsey Kromrey	DOT&PF
Tisha Kuhns, Miranda Strong, Mary Martinez	Calista Corp.
Russ Weller, Dolores Hunter, Marilyn Williams	Maserculiq, Inc.
Jaylene Sitka, Garret Peters, Michael Peters	City of Marshall

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DOT&PF: Introduction of project and obstacles of project pertaining to best material. Our goal is to get a thumbs up on Marshall site and permissions to get out in the field.

DOWL: Is this the correct location for the material extraction on the map?
Calista Corp.: Yes, the backside of Pilcher Mountain has been in discussion for some time.
Maserculiq, Inc.: Yes. There is private land not shown on this map, such as a native cemetery. The cemetery is near the proposed road and east of the proposed site. It is an individual allotment on Calista land. We are unsure of the status, but they might be interested in the sale of the property.
Calista Corp.: That is something she needs to request, or we can approach once we have more information to purchase allotment, only if the trail goes through the property.
The cemetery is south of road and south of bluff, in the green area.
DOWL: Where is the private land located?
Maserculiq, Inc.: The bluff
Calista Corp.: The road is to go around allotments to avoid private property but its all conceptual. That's why the road currently curves a bit on the ridgeline

DOWL: Do we have permission to conduct the study? If so, can we get it in writing?
Maserculiq, Inc.: Yes, we would want written agreement with whoever is conducting study since land is owned by Maserculiq.

DOWL: Since we will be digging soil plugs, is that considered subsurface?
Calista Corp: Because of 4(f), we can send a letter of non-objection.
DOWL: This project has a very fast turnaround and field crew are going out next week. Is it possible to obtain these agreements before that?
Calista Corp: Possibly.
Maserculiq, Inc.: No, but maybe next week
DOWL: How about by next Thursday?
Maserculiq, Inc.: Yes. What type of equipment will be used by the field crew?
DOWL: The only motorized equipment will be to get the 2 individuals through the GCI access trail and Pilcher Mountain for wetland delineation and to rent a boat to see the bluff. They will be digging approximately 24" deep holes while placing soil on plastic sheeting for minimal disturbance. They will be taking observational photos and notes while documenting vegetation,

hydrology, and the landscape. In a couple weeks, the cultural crew will be doing their fieldwork with a similar process and equipment. No heavy equipment or hazardous materials will be used during fieldwork.
Maserculiq, Inc.: Great, that makes it easier to create the agreement.
DOWL: Do you want us to send you a write up with what exactly we will be doing in the field?
Maserculiq, Inc.: Yes.

DOWL: Edits will be made to the two figures so the road alignments match.
DOT&PF: Are we separating traffic to the material site and access road?
Calista Corp.: There will be need to so no haul trucks go through town.
Maserculiq, Inc.: There has been issues with the road and lease agreement with United Telephone in the past. They aren't willing to allow other traffic.

DOT&PF: We may need to study the ATV trail more. If there are folks from Marshall that can weigh in?
Maserculiq, Inc.: There has been opposition to road across from Pilcher Mountain, it is more of an aesthetic issue.
City of Marshall: It is a concern about ground disturbance to berry picking grounds.

DOT&PF: Will the haul route along the ridge line be a concern?
City of Marshall: The road would open opportunity for residents to access more berry picking grounds. It would be best to hold public meeting for input.
DOT&PF: Yes, we are open to host public involvement. There is a virtual meeting tonight and will solicit comments for Pilcher Mountain. We can hold a separate meeting for Marshall if needed.
Maserculiq, Inc.: It is encouraged to hold physical meeting in Marshall due to connectivity issues and low participance compared to in person meetings.
DOT&PF: We can work on setting that up.

DOWL: Does it make sense to include the study in that potential route? We can do the fieldwork now just in case that option moves forward.
DOT&PF: We would differ to community on that. It makes sense to cover basis, so we don't have to comeback out to Marshall.
Can DOWL draw something up for study area and send over? If there is concern over it, we can eliminate once we have permissions.
Maserculiq, Inc.: Will it be an issue that the site is located within the refuge?
DOWL: We don't think so. It is 4(f), so permission for access if not refuge.
Calista Corp: The Marshall site is outside of refuge boundary and only crosses in 2 sections. We can get the total length. We can show USFWS letters of support, non-objection letters, and scope of work. We don't perceive them denying request since it is land status to village corp. and Calista.
DOWL: Will the refuge have to sign off on the entire project?
Calista Corp.: Unsure on that. We will need to discuss more. The first thing is a letter of non-objection for Calista subsurface. Please share work description so we can draft letter of non-objection.

DOWL: Our field crew will be in Saint Mary's and Mountain village the first half of next week and Marshall by Thursday. Will it be possible to have the letters by then?
Calista Corp.: Yes
DOWL: Any other permitting questions?

DOT&PF: Not right now. Eventually for the contractors for specific materials. We want to make sure the pit is ready for contactors. The public meeting will be good opportunity to discuss.

DOWL: Has there been an in person public meeting in Marshall since the pandemic?
City of Marshall: No, you will be the first. Bryce came in 2018/2019 to discuss rock query project but it's different.
DOT&PF: That was tied to Pilot Station Airport relocation project. There was concern about hauling material through town.
City of Marshall: Yes, that was the only time rock query was discussed.

Calista Corp.: Jaylene or Russ, please send out updated Covid policy.
City of Marshall: Travel mandates were lifted February 8th.

DOT&PF: We will find a date that works for the presentation on Marshall airport project while we are out there. That project has been discussed off and on for some time due to funding but rescored as priority. The goal is to start construction 2023/2024.
Maserculiq, Inc.: Will someone make sure the haul trucks aren't too heavy for the bridge? The new bridge was constructed 2 years ago.
DOT&PF: Yes. We will have it go through bridge inspection and place appropriate restrictions for the contractor.
Calista Corp.: Will there be local hire and a union waver?
DOT&PF: That will be up to contractor
Maserculiq, Inc.: Can you create a list of CDLs?
City of Marshall: Yes.

DOT&PF: Do we need people from the tribe or city out there in the field?
Calista Corp.: It is highly encouraged, maybe even bear guard.
Maserculiq, Inc.: The dotted line to proposed site and existing road is a well-used 4 wheeler trail. It would separate berry picking to tree line below
City of Marshall: There is no existing trail before road and proposed access road. The existing trail is further down the hill from proposed road.

DOT&PF: Have you made contact for local hire?
DOWL: No.
The wetlands crew will carry a firearm and is experienced with this type of work. The cultural team will ready out for an elder to come out. Cultural people will reach out
Maserculiq, Inc.: Please send us info on meeting.

TASK ASSIGNMENTS:	ASSIGNED TO:	DUE BY:
◆ Send out field work description	Emily Creely	ASAP
◆ Update figures	Emily Creely	ASAP
◆ Put access request in	Emily Creely	ASAP
◆ Update Covid policy	Jaylene and Russ	ASAP
◆ Send Maserculiq info on public meeting	Emily Creely	ASAP