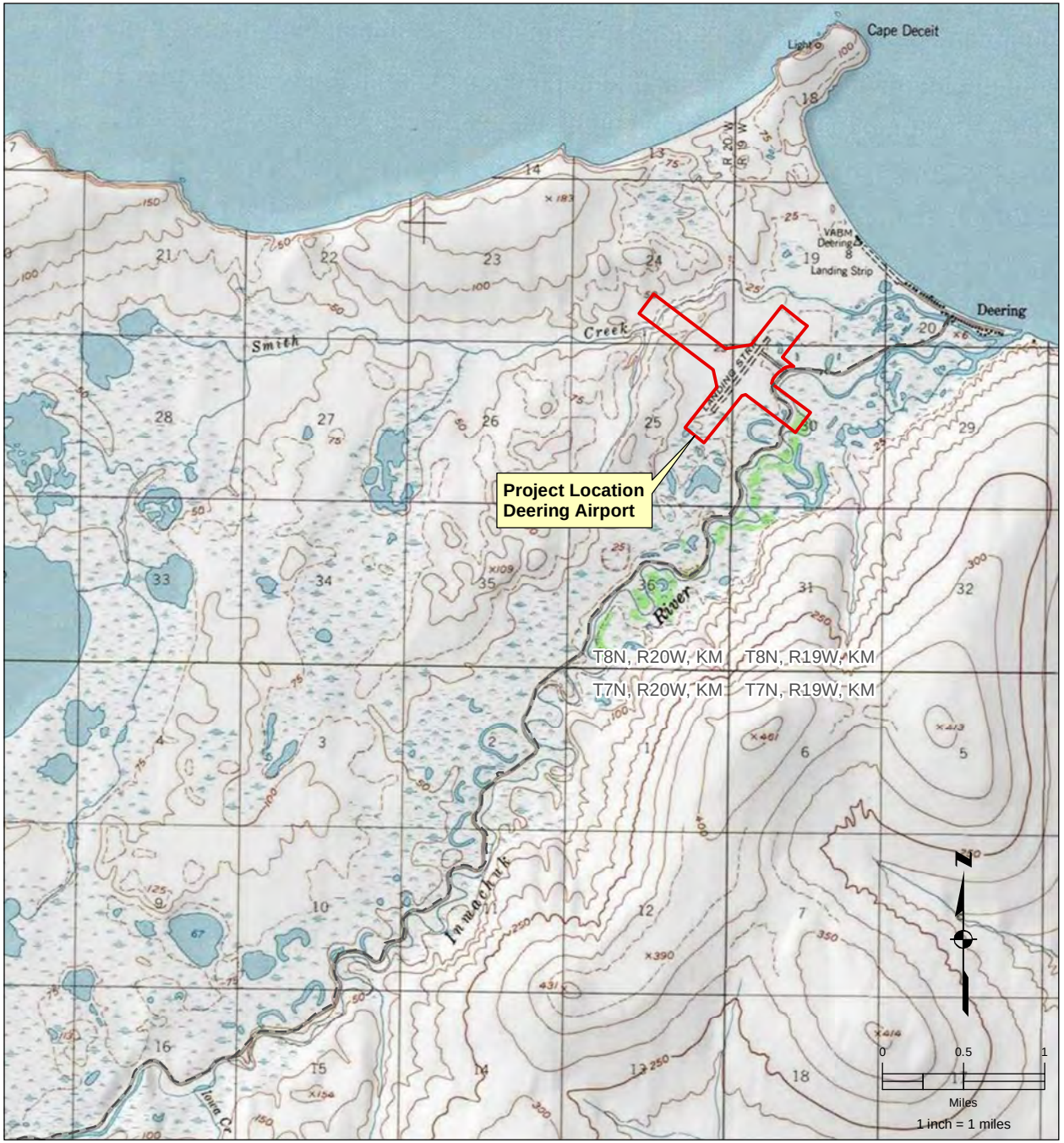
Appendix A: Figures



Project Origin: City of Deering
Cape Nome Recording District,
Township 08N, Range 20W, Section: 25
Township 08N, Range 19W, Section: 19 & 30
Kateel River Meridian
USGS: KOTZEBUE (A-2) ALASKA
Deering Airport
Latitude: 66.0691 N
Longitude: -162.7670 W

Legend

– – Deering Road (Existing)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

STATE OF ALASKA
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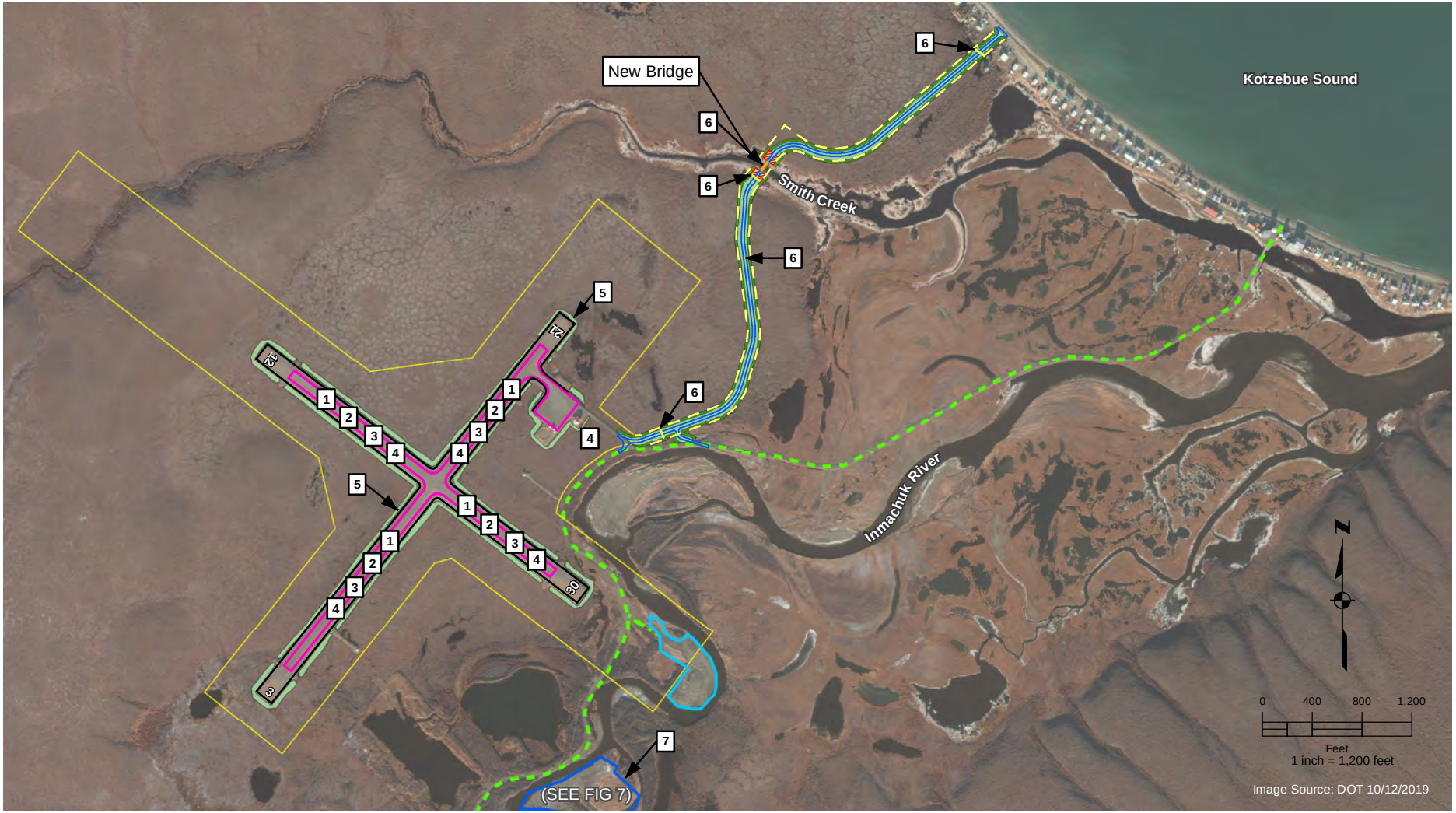
Deering Airport and Access Road Improvements

Location & Vicinity Map

Environmental Assessment

DATE: March, 2021 | FIG. 1

Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig01_Loc_Vic.mxd



Proposed Action Items:

1. Rehabilitate and Resurface Airport Surfaces
2. Repair Runway Embankments
3. Apply Dust Palliative to Airport Ground Traffic Surfaces
4. Replace Airport Lighting System
5. Improve or Re-Establish Airport Drainage
6. Construct a New Airport Access Road, Culverts, and New Bridge
7. Utilize Existing Gravel Bar(s) for Material Source (See Figure7). Haul Material to Airport using Existing Barge Landing and Developed Roads

- Deering Road/Existing Access Roads
- Edge of Runway/Apron Pavement Area
- Runway/Taxiway Safety Area
- New Airport Access Road
- New Culverts
- Proposed ROW Acquisition for Access Road
- Potential Material Sites
- Potential Staging Area
- New Bridge
- Temporary Work Pad
- Existing Airport Boundary
- Permanent Impacts
- Temporary Impacts

STATE OF ALASKA
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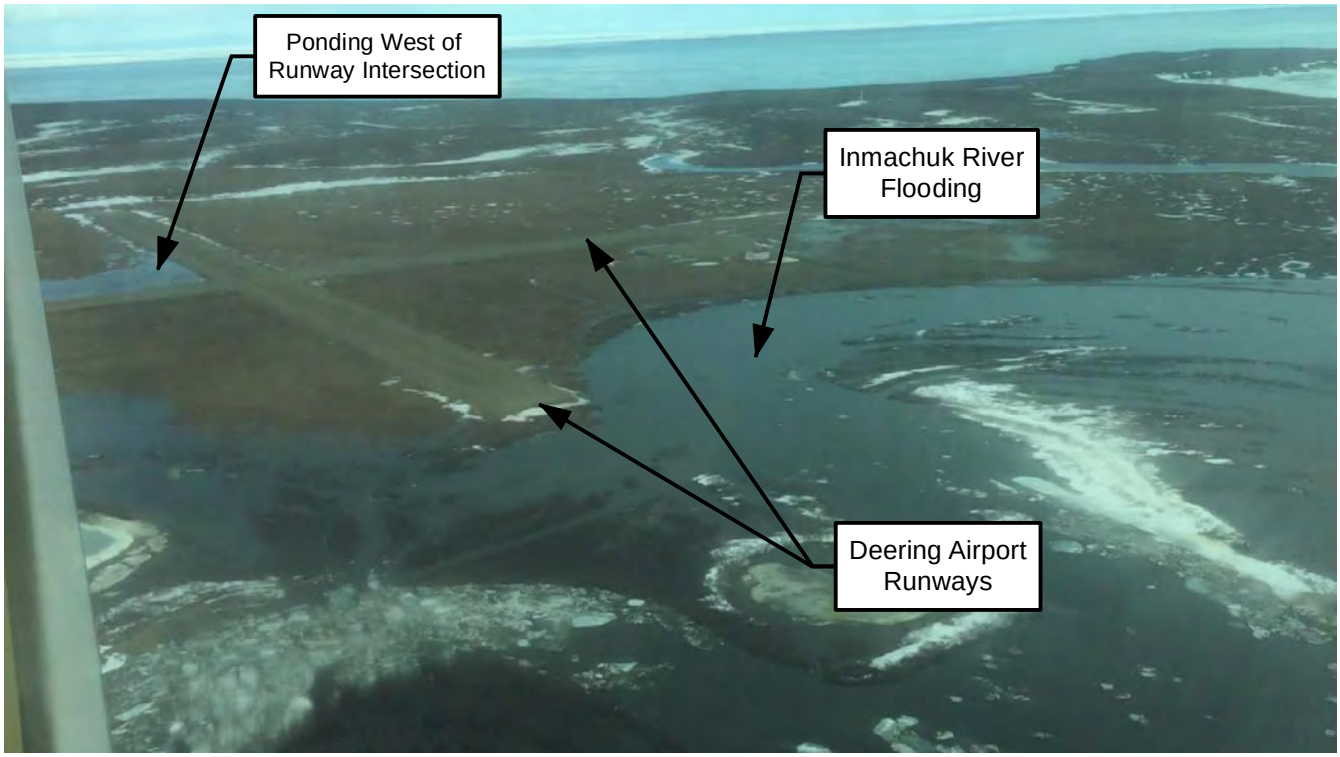
Deering Airport and Access Road Improvements

Proposed Action Site Plan

Environmental Assessment

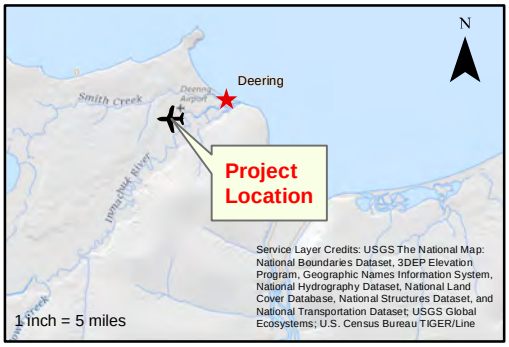
DATE: March, 2021 | FIG. 2

Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig02_Site_Plan.mxd



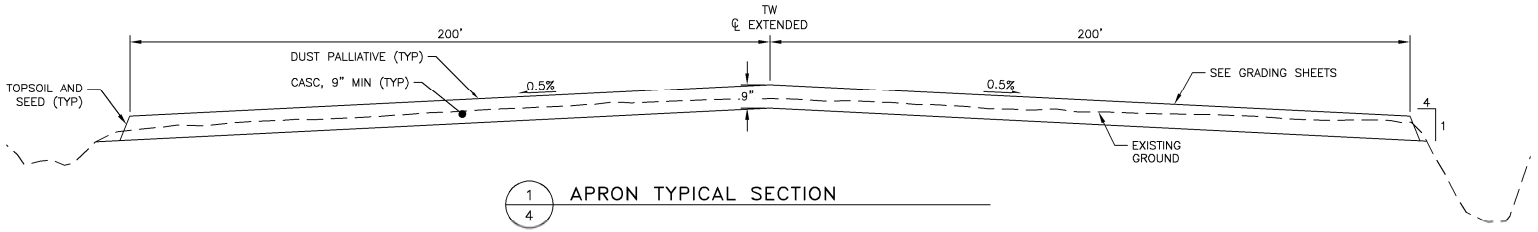
Deering Airport, Spring 2016

Source: RFP 25-17-1-070 Attachment 1

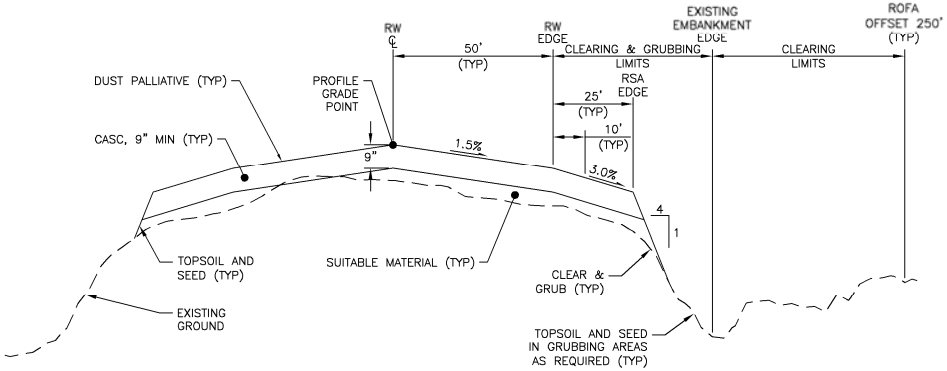


STATE OF ALASKA Department of Transportation and Public Facilities 2301 Peger Road Fairbanks, AK 99709
Deering Airport and Access Road Improvements
Historic Flooding (Spring 2016)
Environmental Assessment
DATE: March, 2021 — FIG. 3

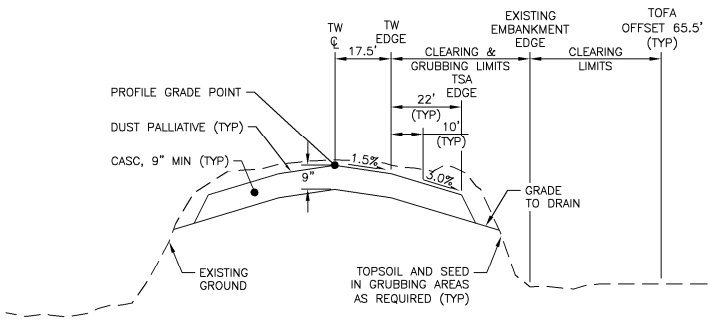
Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig03_Flood.mxd



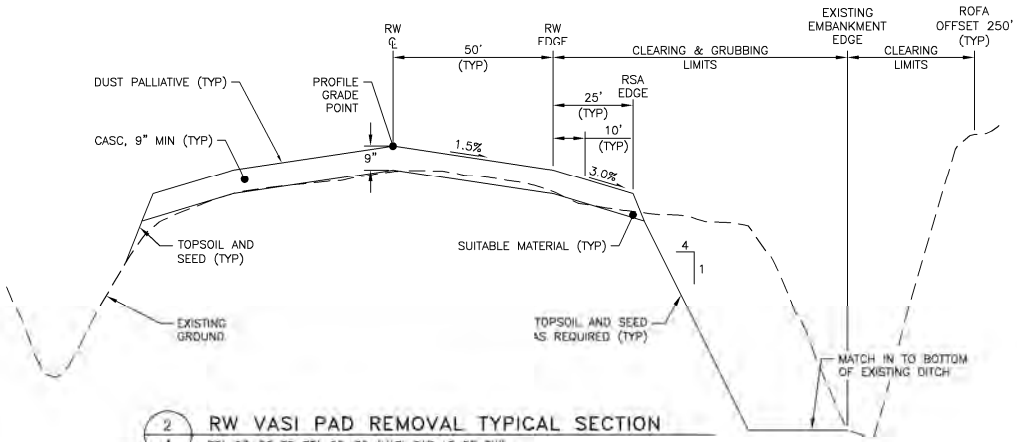
1/4 APRON TYPICAL SECTION



2/4 RW/RSA TYPICAL SECTION
STA 83+44.17 TO STA 93+50
STA 95+25 STA 124+00
STA 125+50 TO STA 131+99.85



3/4 TW/TSA TYPICAL SECTION
STA 0+75 TO STA 2+50



2/4 RW VASI PAD REMOVAL TYPICAL SECTION
STA 93+50 TO STA 95+25 (VASI PAD LT OF RW)
STA 124+00 TO STA 125+50 (VASI PAD RT OF RW)

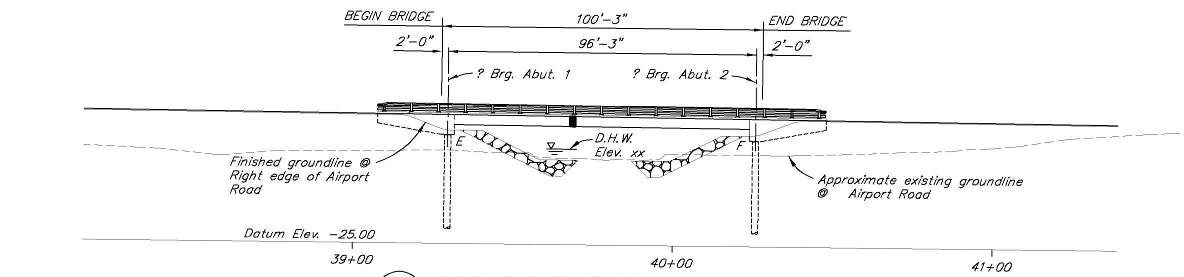
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Deering Airport and Access Road Improvements

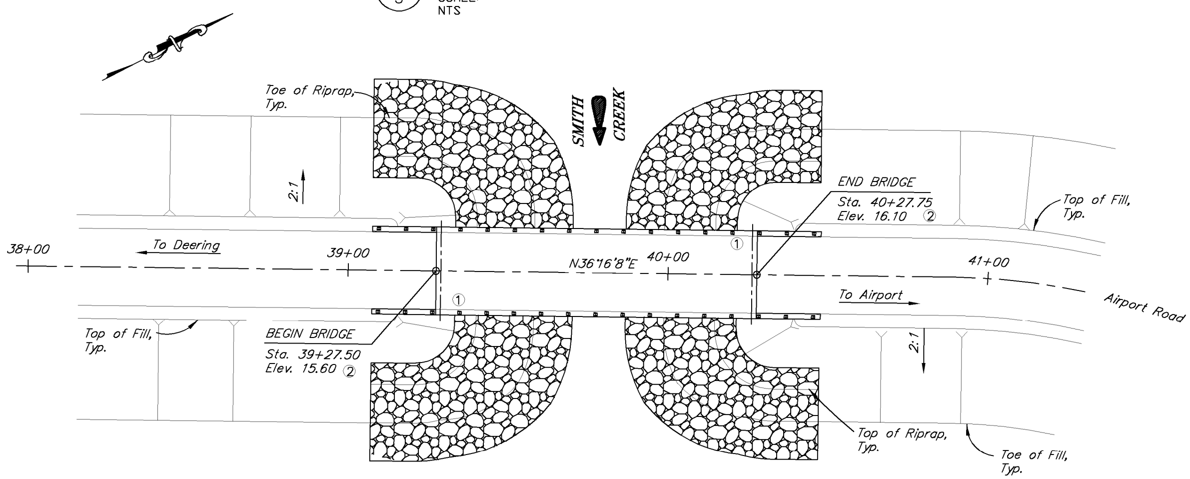
Airport Typical Sections

Environmental Assessment

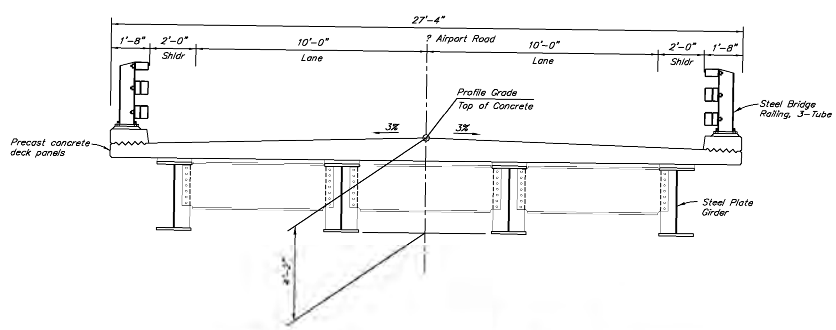
DATE: February 2021 | FIG 4



1/3 BRIDGE ELEVATION
SCALE: NTS



2/3 BRIDGE PLAN
SCALE: NTS



3/3 VEHICULAR BRIDGE SECTION
SCALE: NTS

STATE OF ALASKA
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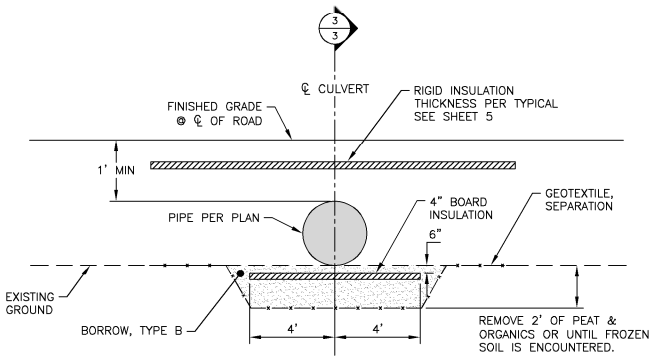
Deering Airport and Access Road Improvements

Bridge Plan, Elevation, and Section

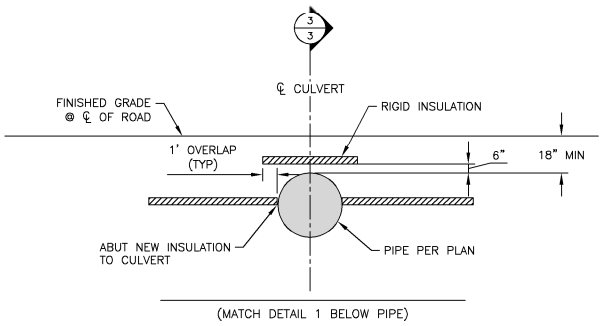
Environmental Assessment

DATE: February 2021

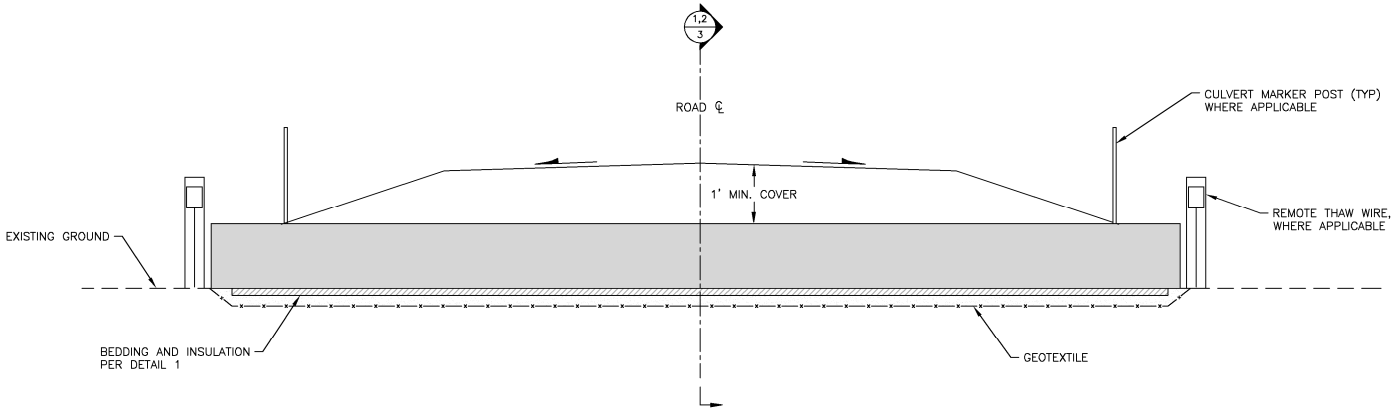
FIG 5



1/3 TYPICAL CULVERT CROSS SECTION
SCALE: NTS



2/3 TYPICAL CULVERT CROSS SECTION W/ INSULATION CONFLICT
SCALE: NTS



3/21 TYPICAL CULVERT CROSS SECTION
SCALE: NTS

CULVERT NOTES

1. ROADWAY SECTION DEPICTED ABOVE IS IN REGION WITHOUT GUARDRAIL. CULVERT INSTALLATION SHALL BE SIMILAR IN REGIONS WITH GUARDRAIL.

STATE OF ALASKA
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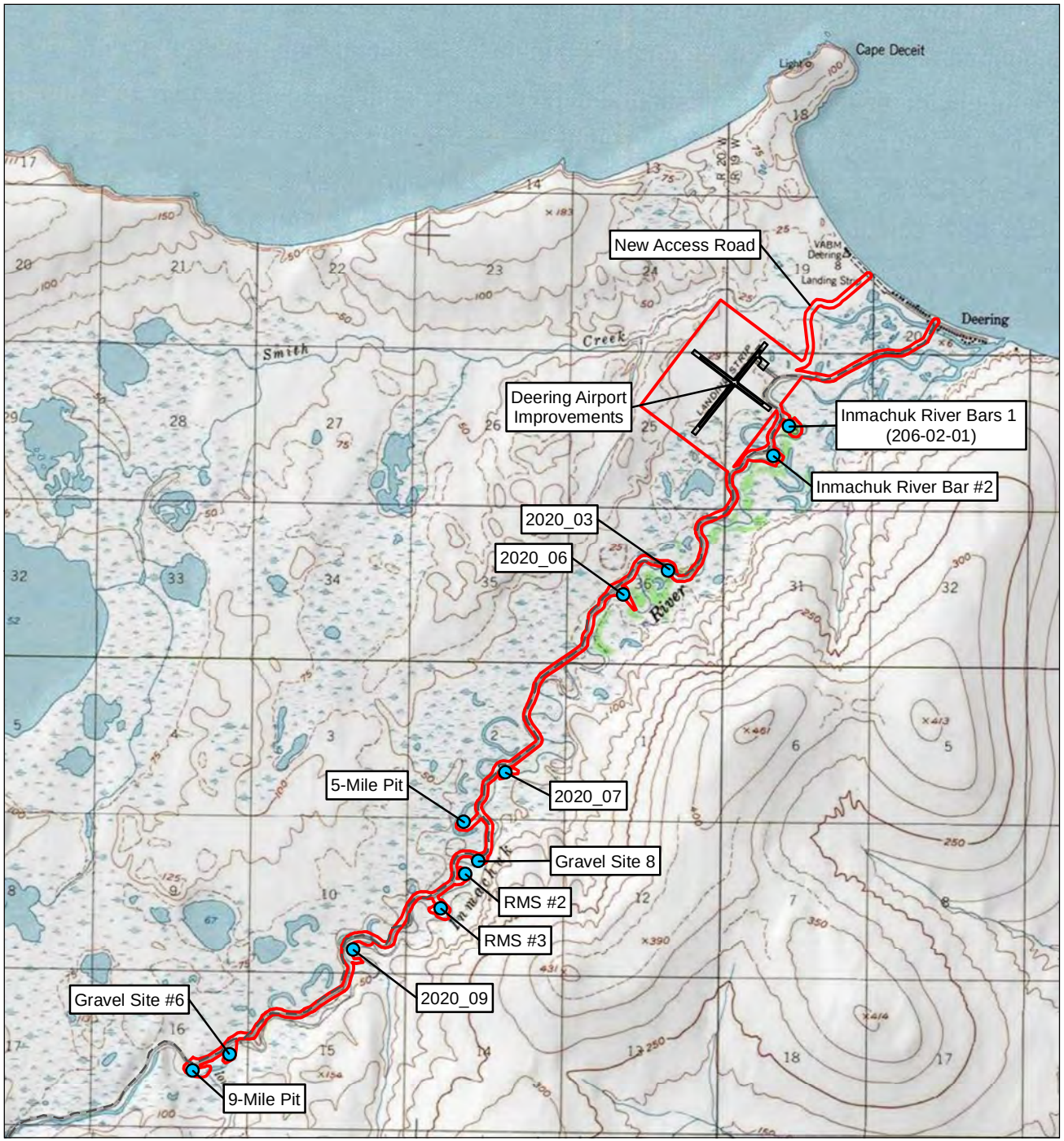
Deering Airport and Access Road Improvements

Culvert Typicals

Environmental Assessment

DATE: February 2021 | FIG 6



Legend

- Deering Road (Existing)
- Area of Potential Effect (APE)
- Potential Material Sites/Staging Areas

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

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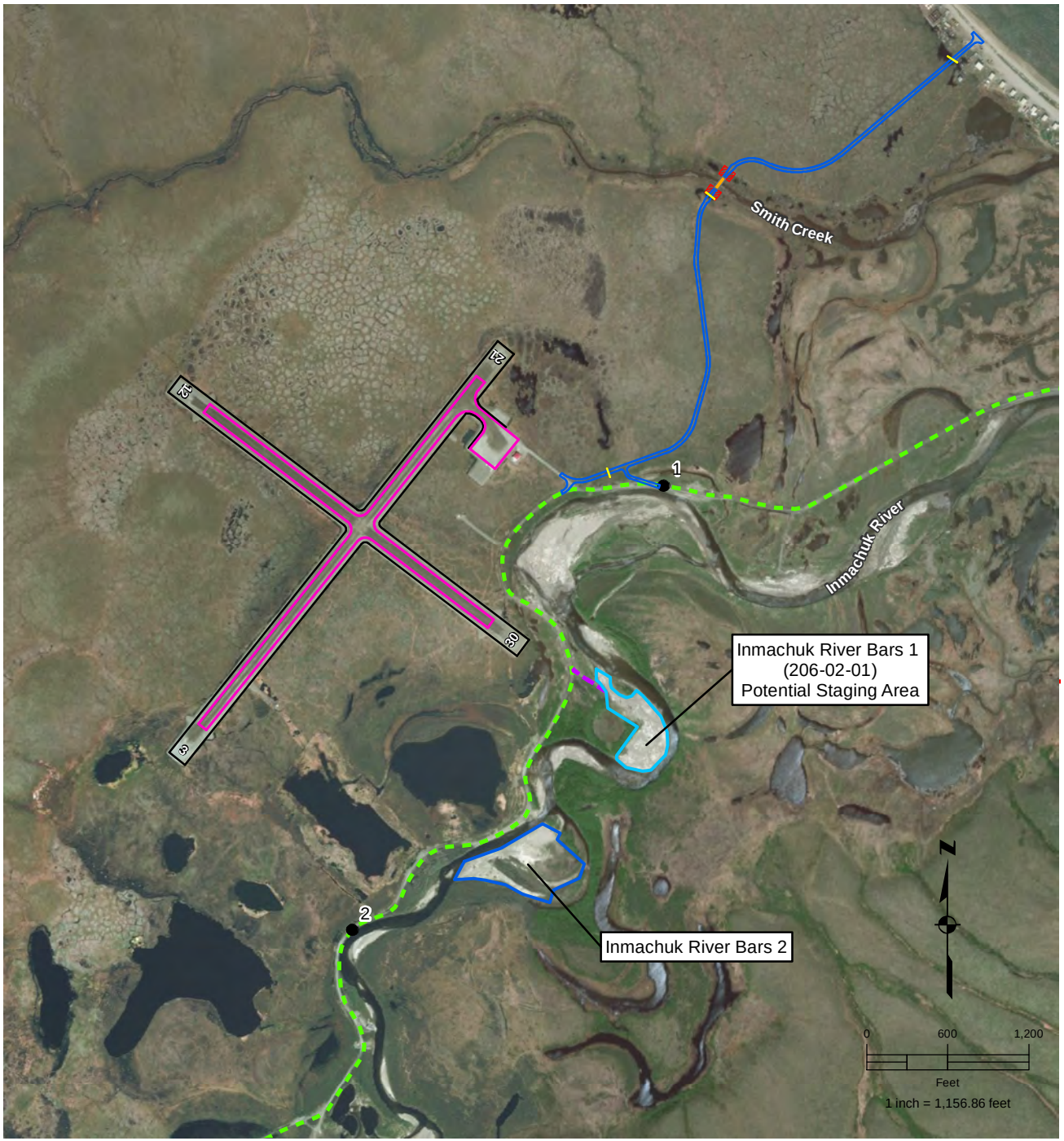
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas Overview

Environmental Assessment

DATE: March, 2021 | FIG. 7

Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig07_Mat_Source.mxd

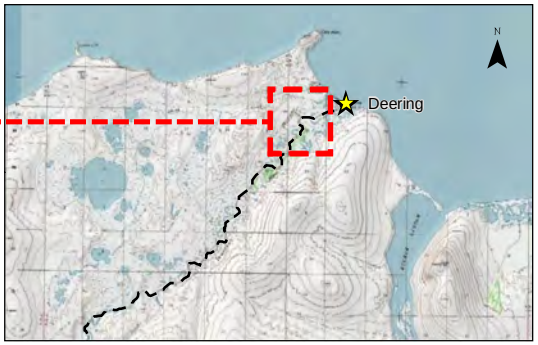


Legend

- Potential Material Sites
- Potential Staging Area
- Proposed West Airport Access Road
- Edge of Runway/Apron Pavement Area
- Runway/Taxiway Safety Area (RSA/TSA)
- Proposed Culverts
- Proposed Bridge
- Temporary Work Pad
- Deering Road
- Existing Material Site/Staging Access
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed



STATE OF ALASKA
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2301 Peger Road Fairbanks, AK 99709

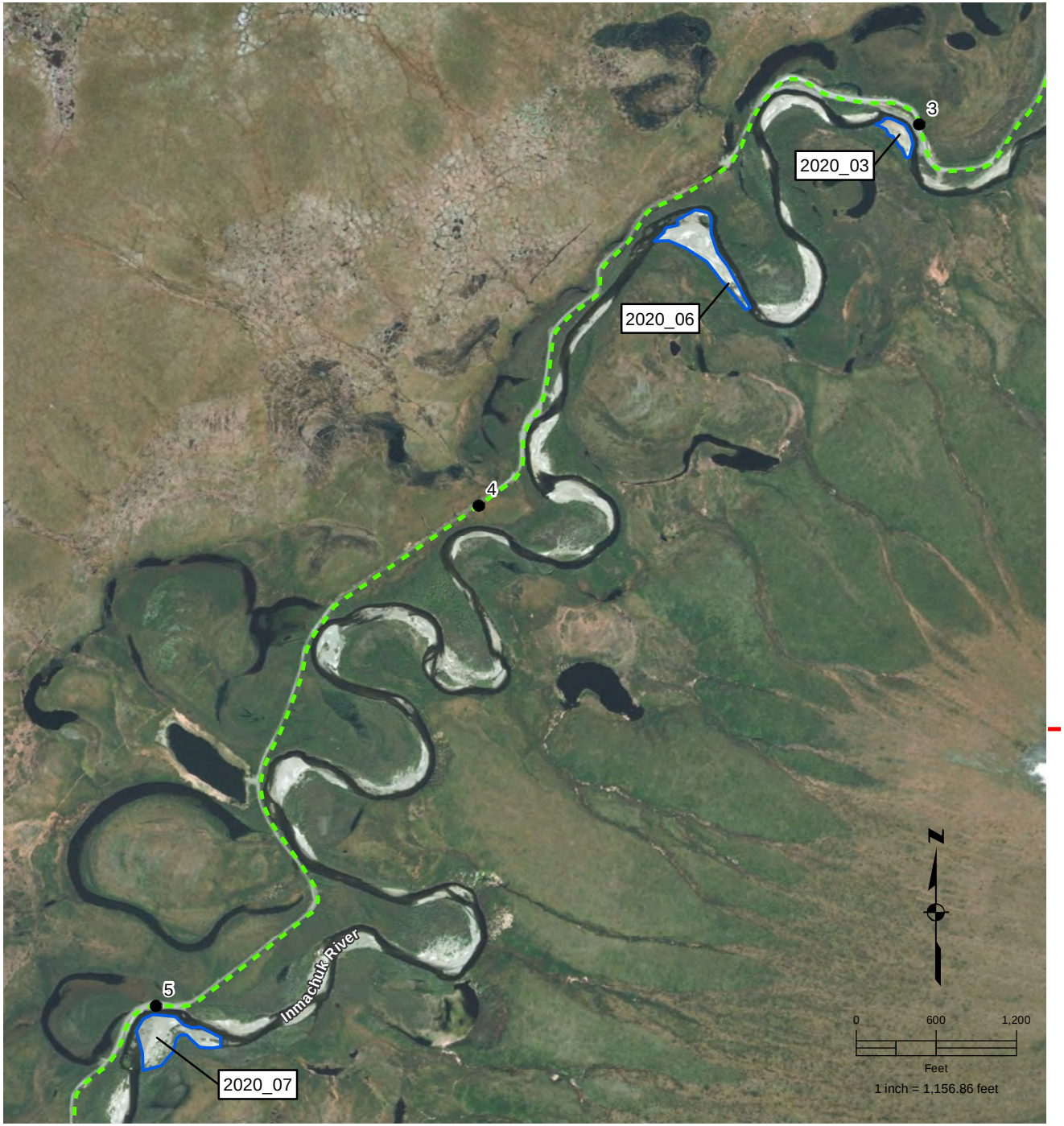
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Environmental Assessment

DATE: March, 2021 | FIG. 7a

Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig07a_Mat_Source_Detail.mxd

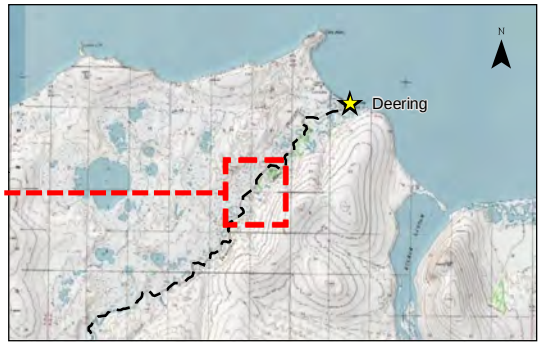


Legend

- Potential Material Sites
- Deering Road
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed



STATE OF ALASKA
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2301 Peger Road Fairbanks, AK 99709

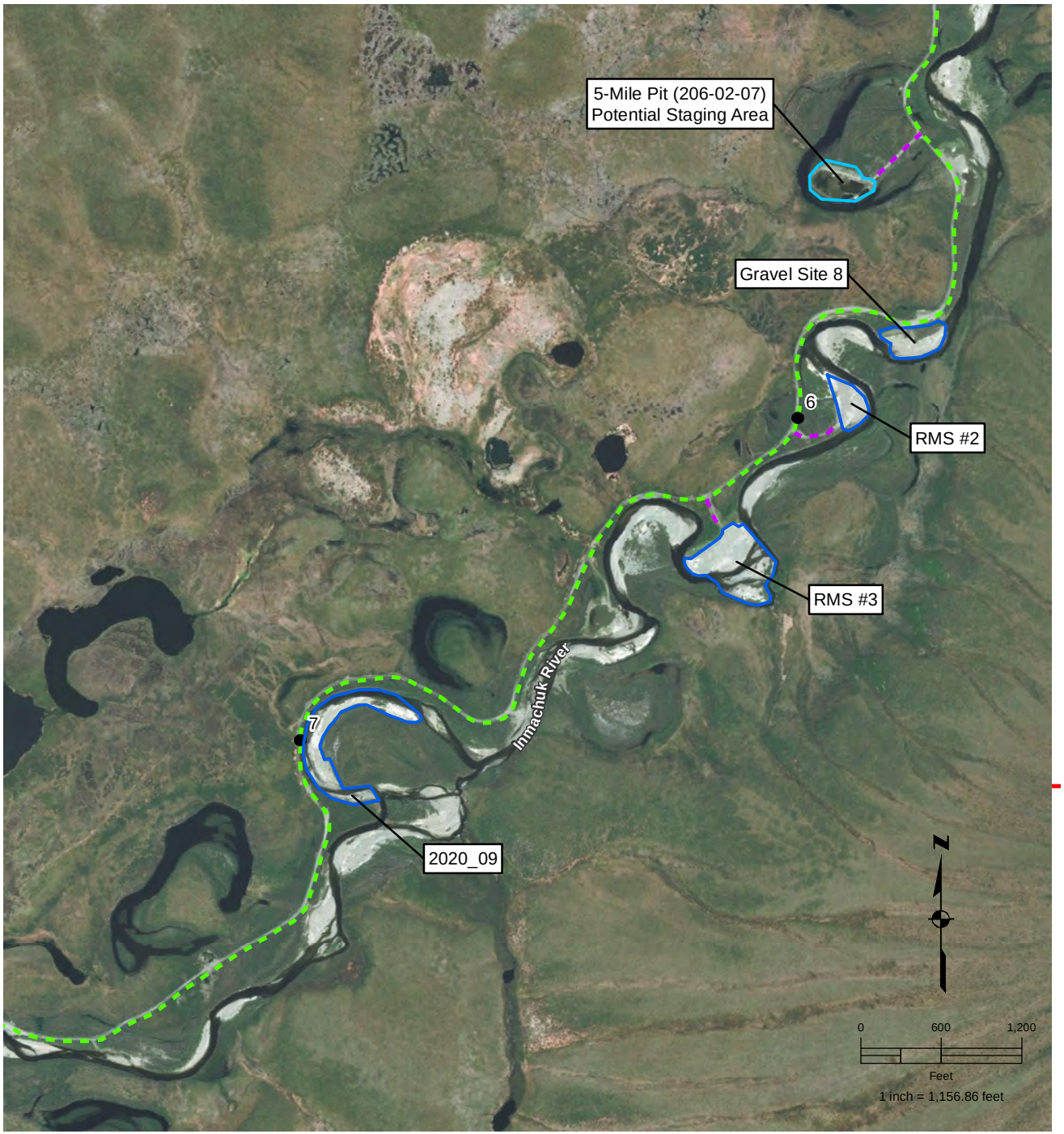
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Environmental Assessment

DATE: March, 2021 | FIG. 7b

Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig07a_Mat_Source_Detail.mxd

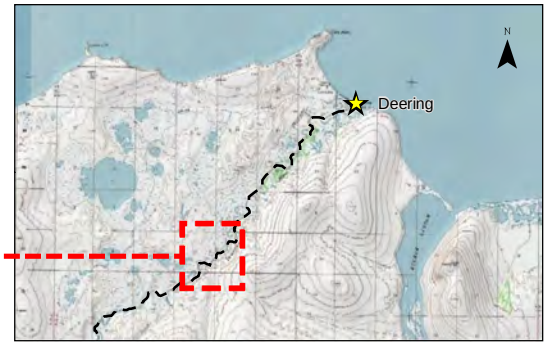


Legend

- Potential Material Sites
- Potential Staging Area
- Deering Road
- Existing Material Site/Staging Access
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed



STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

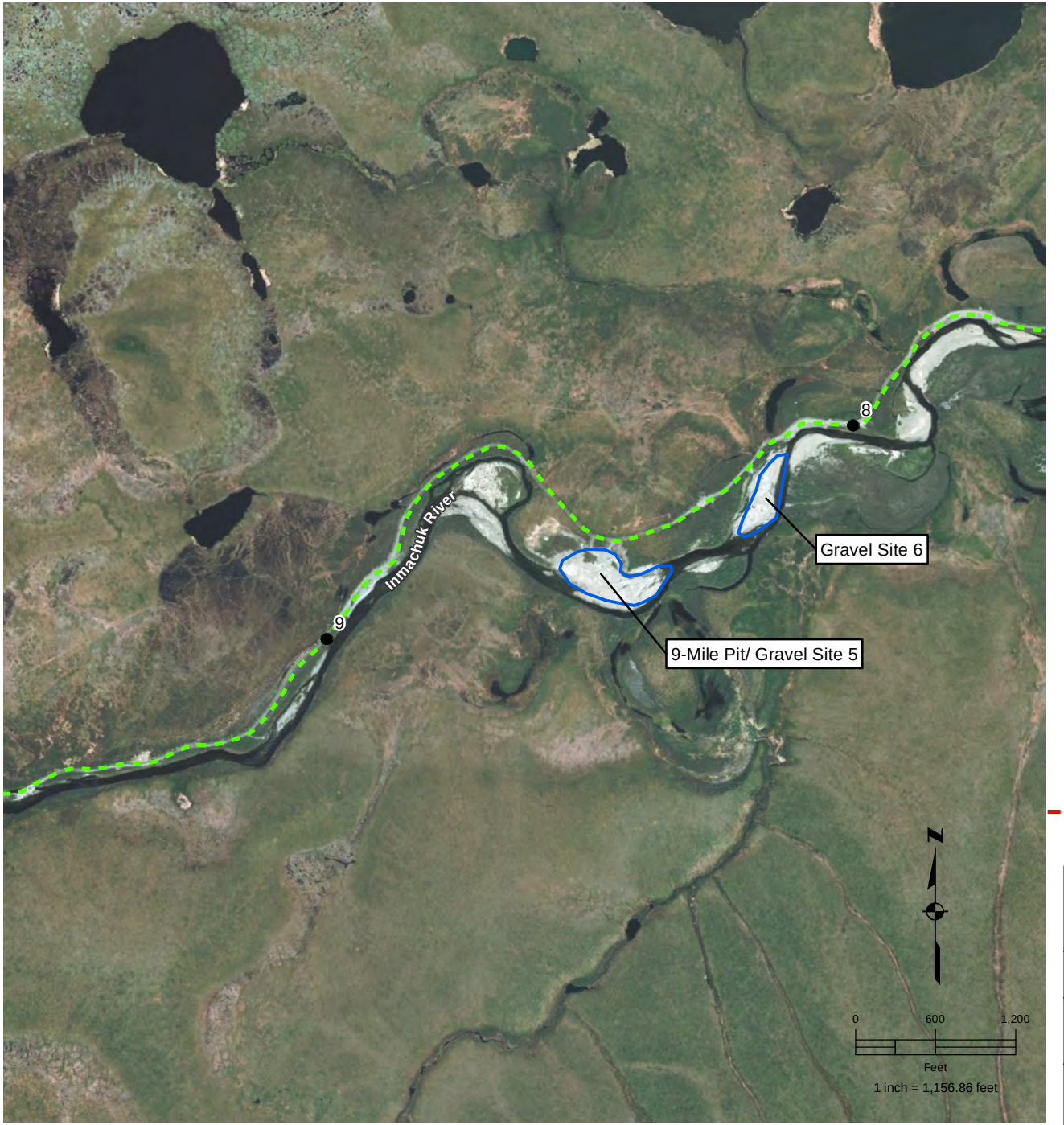
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Environmental Assessment

DATE: March, 2021 | FIG. 7c

Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig07a_Mat_Source_Detail.mxd

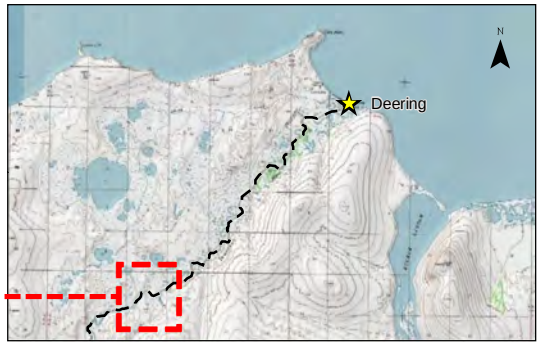


Legend

- Potential Material Sites
- Deering Road
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed



STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

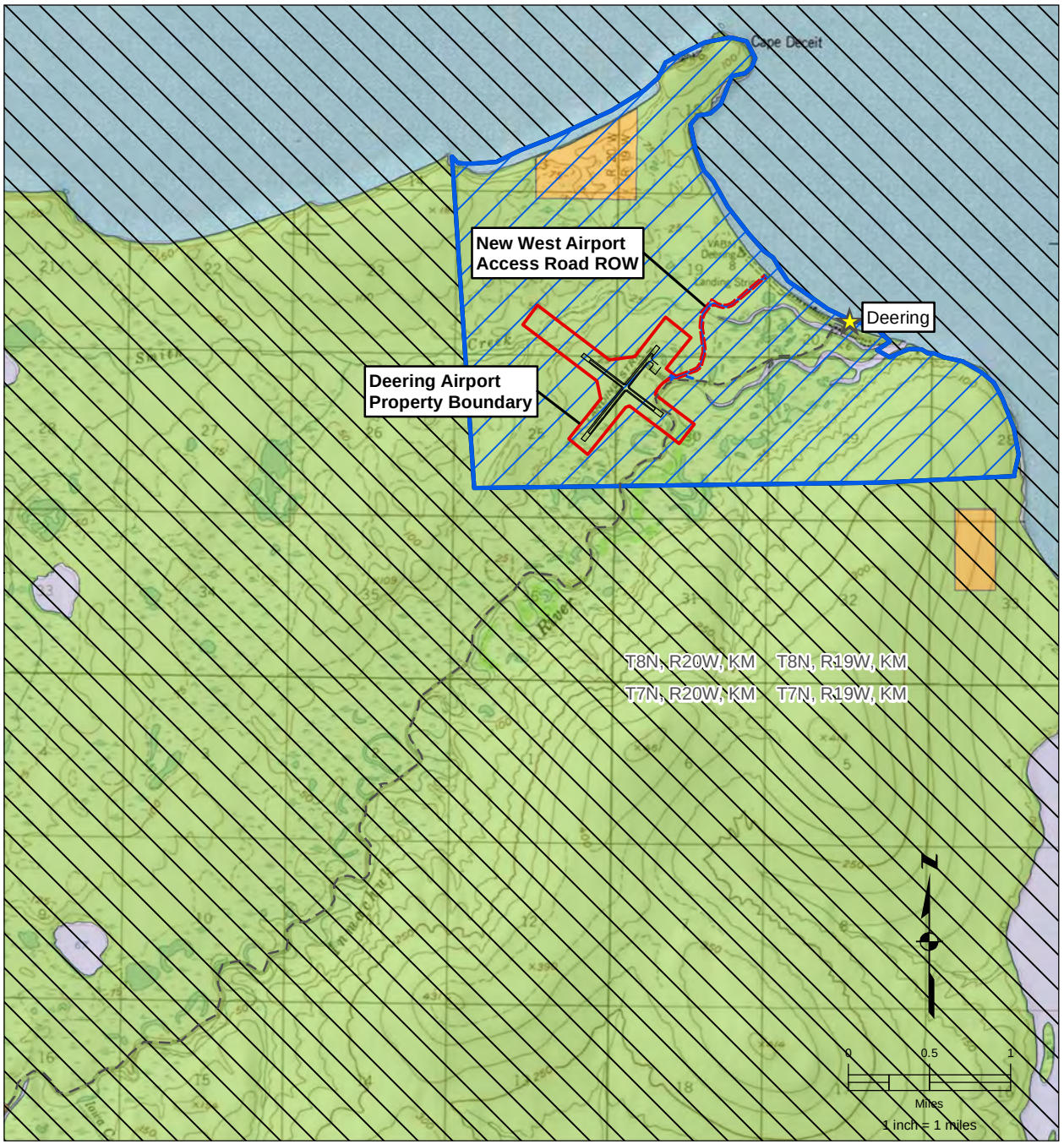
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Environmental Assessment

DATE: March, 2021 | FIG. 7d

Document Path: U:\2047062400\gis\mxd\environmental_assessment_figures\2047062400_EA_Fig07a_Mat_Source_Detail.mxd



Legend

Deering Road (Existing)

BLM AK Administered Lands

Alaska Native Allotment

Alaska Native Lands Patented or Interim Conveyed

Undetermined

Zoning Districts

Village District

Subsistence Conservation

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
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STATE OF ALASKA
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2301 Peger Road Fairbanks, AK 99709

Deering Airport and Access Road Improvements

Land Ownership

Environmental Assessment

DATE: March, 2021

FIG. 8

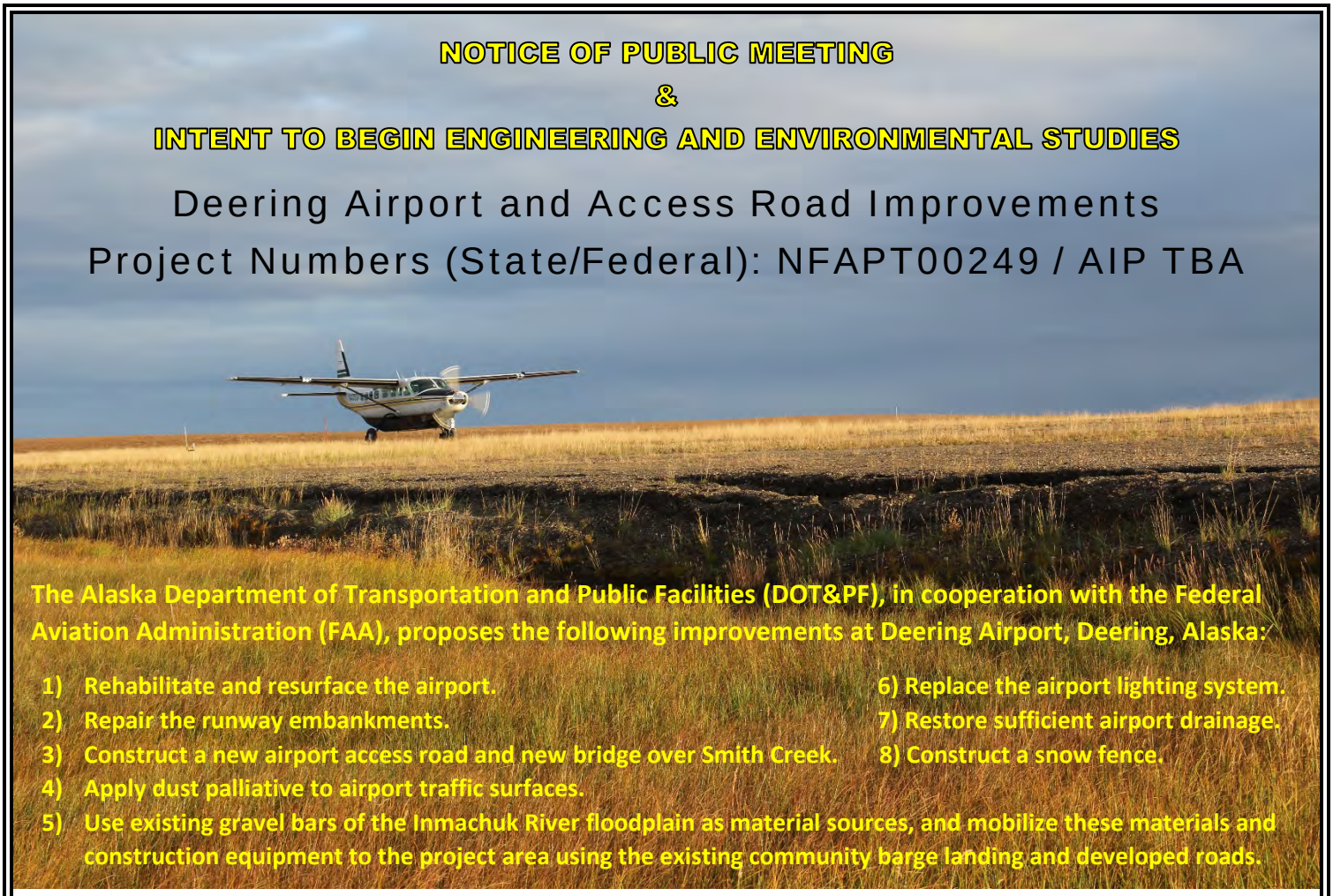
Document Path: U:\20470624\00\gis\mxd\environmental_assessment_figures\20470624_EA_Fig08_Land_Ownership.mxd

Appendix B: Public Involvement

Notice of 2020 Public Meeting

NOTICE OF PUBLIC MEETING
&
INTENT TO BEGIN ENGINEERING AND ENVIRONMENTAL STUDIES

Deering Airport and Access Road Improvements
Project Numbers (State/Federal): NFAPT00249 / AIP TBA



The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes the following improvements at Deering Airport, Deering, Alaska:

1) Rehabilitate and resurface the airport.
2) Repair the runway embankments.
3) Construct a new airport access road and new bridge over Smith Creek.
4) Apply dust palliative to airport traffic surfaces.
5) Use existing gravel bars of the Inmachuk River floodplain as material sources, and mobilize these materials and construction equipment to the project area using the existing community barge landing and developed roads.
6) Replace the airport lighting system.
7) Restore sufficient airport drainage.
8) Construct a snow fence.

The project purpose is to remedy Deering Airport deficiencies, bring the airport to current FAA design standards, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP).

Deering Airport has two gravel surfaced, perpendicular runways designated as Runway (RW) 3-21 and RW 12-30. Over time, winter snow removal operations have graded most surfacing off both runways' surfaces, resulting in persistent rutting and water ponding on the underlying runway embankment. Additionally, drifting snow collects west of the runways' intersection, requiring a substantial snow removal effort and creating springtime meltwater ponding adjacent the runway embankments. These conditions keep airport maintenance costs high. Additionally, the airfield's surface course and lighting system are beyond their useful life and need rehabilitation or replacement.

The Deering Airport and its access road are also subject to flooding due both to spring ice jams in the Inmachuk River and strong, periodic storm surges from Kotzebue Sound. For example, in 2015 and 2016, ice jams at the Inmachuk River mouth submerged portions of the airport access road (Deering-Inmachuk Road), which provides access between the Deering community and the airport (and also lies mostly off airport property). The ice jam also extended to one runway threshold embankment (Figure 2). In 2016, these conditions caused the State of Alaska to declare a community disaster at Deering. There are no documented flood events overtopping the airport surfaces.

Please join us in person or by phone to discuss the proposed project!

When: **Monday July 20, 2020 at 7:00 pm** **Where**: **Deering City Building** **How?: See below**

Deering residents: **can call Bonita Barr (907-363-2138) for info on attending in person.**

All others: **call in Toll-Free: (833) 436-6264 & then use Code: 116 662 893#**

See attached Figures 1-7 for depictions of proposed airport & road improvements. You can mail or email questions, comments, suggestions or other information to the DOT&PF Project Manager Jonathan Hutchinson (contact info below). While we accept information at any time, to best assist the design team please provide comments by **August 17, 2020**.

The proposed project will comply with Section 106 of the National Historic Preservation Act; Executive Orders: 11990 (Wetlands Protection), 11988 (Floodplain Protection), 12898 (Environmental Justice), 11593 (Historic Preservation), 13084 (Consultation and Coordination with Indian Tribal Governments); the Clean Air Act, Clean Water Act, Fish and Wildlife Coordination Act, and U.S. DOT Act Section 4(f).

To request further information about this project, you may contact:

Jonathan Hutchinson, P.E., DOT&PF Engineering Manager
2301 Peger Road, Fairbanks, AK, 99709
jonathan.hutchinson@alaska.gov

What Project Activities and Milestones are Coming Up Next?

- **Geotechnical Investigations** – Crew will be in Deering by late Fall/Early Winter 2020 (subject to change re: COVID).
- **Draft Environmental Assessment** – Currently in development, with proposed completion by Winter 2021/2022.
- **Final Design** – scheduled to be complete by December, 2021.
- **Advertise the Project for Bid** – January 2022.
- **Proposed Construction Timeframe** – 2022-2023.

THANK YOU for your interest in the project, for your suggestions and comments, and for your participation in the Project Design Process!

Blank Comment Card

Deering Airport and Access Road Improvements

Project Numbers (State/Federal): NFAPT00249 / AIP TBA

Comments Are Welcome!

Please take a moment to fill out this comment sheet so that we can respond to your comments. If you do not finish the comment sheet today, please mail to Jonathan Hutchinson, P.E., DOT&PF, 2301 Peger Road Fairbanks, AK 99709; or e-mail to jonathan.hutchinson@alaska.gov. Thank You!

Name: _____ Telephone: _____

Address: _____

Please add comments you think may be helpful during the design development process. Are there specific elements of the project that you wish to address?

Place
Stamp
Here

Jonathan Hutchinson, P.E.
Department of Transportation & Public Facilities
2301 Peger Road
Fairbanks, AK 99709

Public Meeting Agenda

Public Meeting Agenda

July 20, 2020, 7:00-9:00 pm

Deering Airport and Access Road Improvements

Project Numbers (State/Federal): NFAPT00249 / AIP TBA

Invocation

Meeting Format – Bonita Barr

Introductions

- Jonathan Hutchinson, P.E., DOT&PF Project Manager
- Paul Karczmarczyk, DOT&PF Environmental Analyst
- Monique Garbowicz, Stantec Project Manager
- Kacy Hillman, Stantec Environmental Scientist

Project Background – Jonathan Hutchinson

- Overview of past projects (West Airport Road) and how we got to where we are now.

Environmental – Kacy Hillman

- Desktop Wetland Delineation
- Draft Environmental Assessment
- Environmental Permitting

Project Design – Monique Garbowicz

- Review Proposed Action Items:
    1. Rehabilitate and resurface the airport surfaces.
    2. Repair runway embankments.
    3. Construct a new airport access road, including a new bridge over Smith Creek.
    4. Apply dust palliative to airport ground traffic surfaces.
    5. Replace the airport lighting system.
    6. Improve or re-establish sufficient airport drainage.
    7. Construct a snow fence.
    8. Utilize existing gravel bar(s) within the Inmachuk River floodplain for a material source and mobilize these materials and other equipment to the airport construction area using the combined existing community barge landing and developed roads.

Project Activities and Milestones – Jonathan Hutchinson

- Geotechnical Investigations – Crew will be in Deering by late Fall/Early Winter 2020 (subject to change re: COVID).

- Draft Environmental Assessment – Currently in development, with proposed completion by Winter 2021/2022.
- Final Design – scheduled to be complete by December 2021.
- Advertise the Project for Bid – January 2022.
- Proposed Construction Timeframe – 2022-2023.

Questions?

Handout

Deering Airport and Access Road Improvements

Project Update

Project Numbers (State/Federal): NFAPT00249 / AIP TBA

August 10, 2020

An aircraft right before take off at the Deering Airport. The instability of the embankment clearly showing along the edge of the runway.

Runway looking south east.

Project Staff

- **Jonathan Hutchinson, P.E**., DOT&PF Project Manager
- **Paul Karczmarczyk**, DOT&PF Environmental Analyst
- **Monique Garbowicz,** Stantec Project Manager
- **Kacy Hillman,** Stantec Environmental Scientist

Project Background

Overview of past projects and how we got to where we are now.

1. Bureau of Indian Affairs developed plans and completed an Environmental Assessment in 2017 for the West Airport Road Project to provide Deering with an emergency evacuation route and more reliable access to the airport. The project proposed a new bridge over Smith Creek.

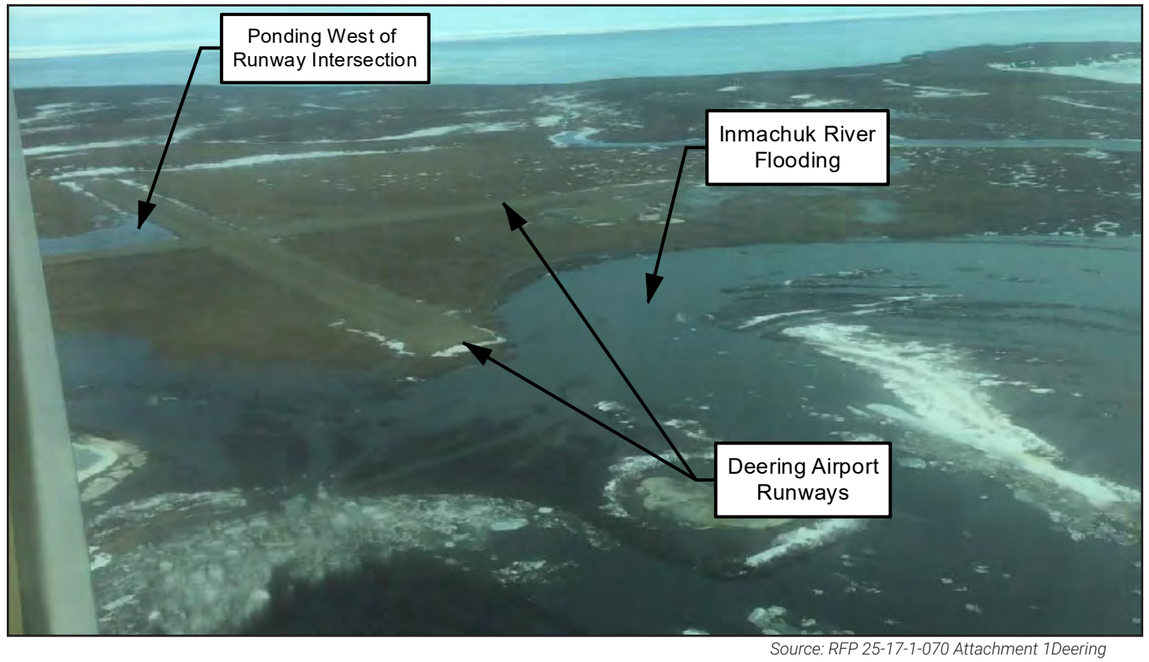
Current Project.

1. The project purpose is to remedy deficiencies at the Deering Airport by resurfacing per FAA guidance, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP)
2. Deering Airport has two gravel surfaced, perpendicular runways designated as Runway (RW) 3-21 and RW 12-30. Over time, winter snow removal operations have graded most surfacing off both runways' surfaces, resulting in persistent rutting and water ponding on the underlying runway embankment. Additionally, drifting snow collects west of the runways' intersection, requiring a substantial snow removal effort and creating springtime meltwater ponding adjacent the runway embankments. These conditions require extra maintenance and as a result keep airport maintenance costs high. The airfield's surface course and lighting system are also beyond their useful life and need rehabilitation and replacement, respectively.

(continued on page 3)

3. The Deering Airport and its access road are also subject to flooding due to spring ice jams in the Inmachuk River and strong, periodic storm surges from Kotzebue Sound. For example, in 2015 and 2016, ice jams at the Inmachuk River mouth submerged portions of the airport access road (Deering-Inmachuk Road). The access road, which lies mostly off airport property, provides access between the Deering community and the airport. The ice jam also extended to one runway threshold embankment (Figure 2). In 2016, these conditions caused the State of Alaska to declare a community disaster at Deering. There are no documented flood events overtopping the airport surfaces.

Historic Flooding (Spring 2016)



Source: RFP 25-17-1-070 Attachment 1Deering

- Figure 2 -

Environmental

DOT&PF is evaluating potential effects to the environment as required under the National Environmental Policy Act (NEPA), as well as other federal and state regulations. Activities include completion of special studies, an Environmental Assessment document, and individual permits and agency clearances.

Special Studies

1. Desktop Wetland Delineation:
   We are using the wetland delineation completed as part of the West Airport Road project to delineate and map wetlands for the airport property boundary. The desktop wetland mapping will be used to permit wetland impacts associated with airport improvements through the U.S. Army Corps of Engineers.

2. Geotechnical investigations:
   Geotechnical investigations will be conducted on several potential material sources located on gravel bars in the Inmachuk river as well as within previously developed sites along existing roads southwest of Deering.

Environmental Assessment (EA)

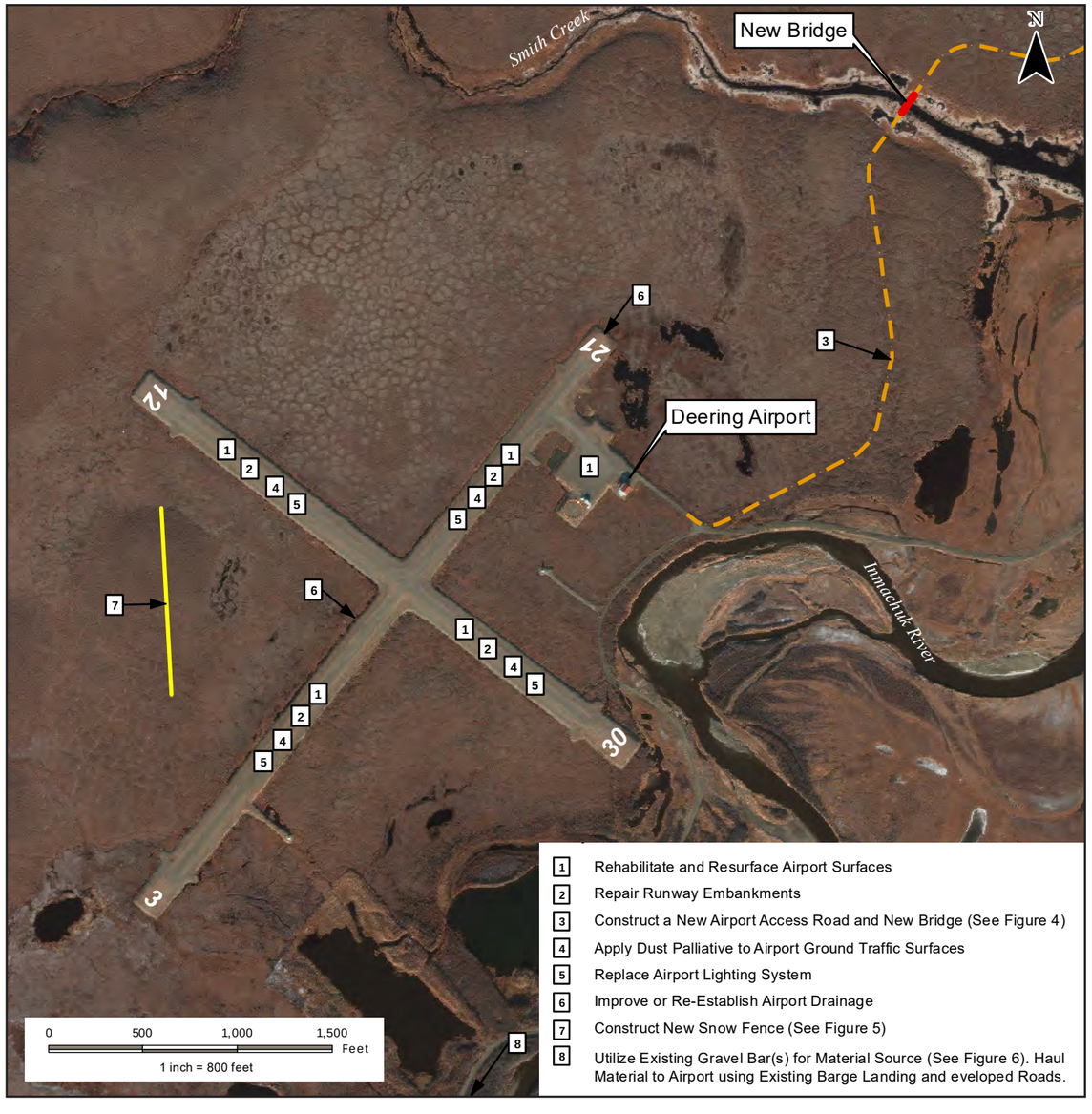
As required under NEPA, we will complete an EA document for the proposed project which will include an assessment of the affected environment within the project area, and an evaluation of potential impacts to the natural and human environment as a result of the proposed improvements. An important aspect of the EA will be identification of ways to avoid and minimize impacts, and mitigation for impacts that cannot be avoided. Public participation is an important aspect of this process.

Permits and Clearances

In addition to compliance with NEPA, several other federal and state regulations apply to this project, including but not limited to the following:

1. Wetland Permitting:
   - The west airport road was permitted for wetland impacts through the U.S. Army Corps of Engineers in 2016.
   - A permit application will be submitted to the U.S. Army Corps of Engineers for the airport improvements.
2. Title 9 Permit Application: A Title 9 permit application will be submitted to the Northwest Arctic Borough Planning Department for the proposed project.

Proposed Action Site Plan



- Figure 3 -


Cracked runway edges.

3. Fish Habitat Permit: A fish habitat permit will be submitted to the Alaska Department of Fish and Game for in water work to construct the bridge over Smith Creek and if project material would be removed from a permitted material site within the Inmachuk River floodplain. Timing of in-water work will be coordinated with the Alaska Department of Fish and Game to avoid impacts to fish.
4. Consultation with the U.S. Fish and Wildlife Service for potential impacts to Threatened and Endangered Species.
5. Consultation with the National Marine Fisheries Service for potential impacts to Essential Fish Habitat.
6. Consultation with the Alaska State Historic Preservation Officer on potential impacts to nationally eligible cultural historic resources that may occur within the project area.

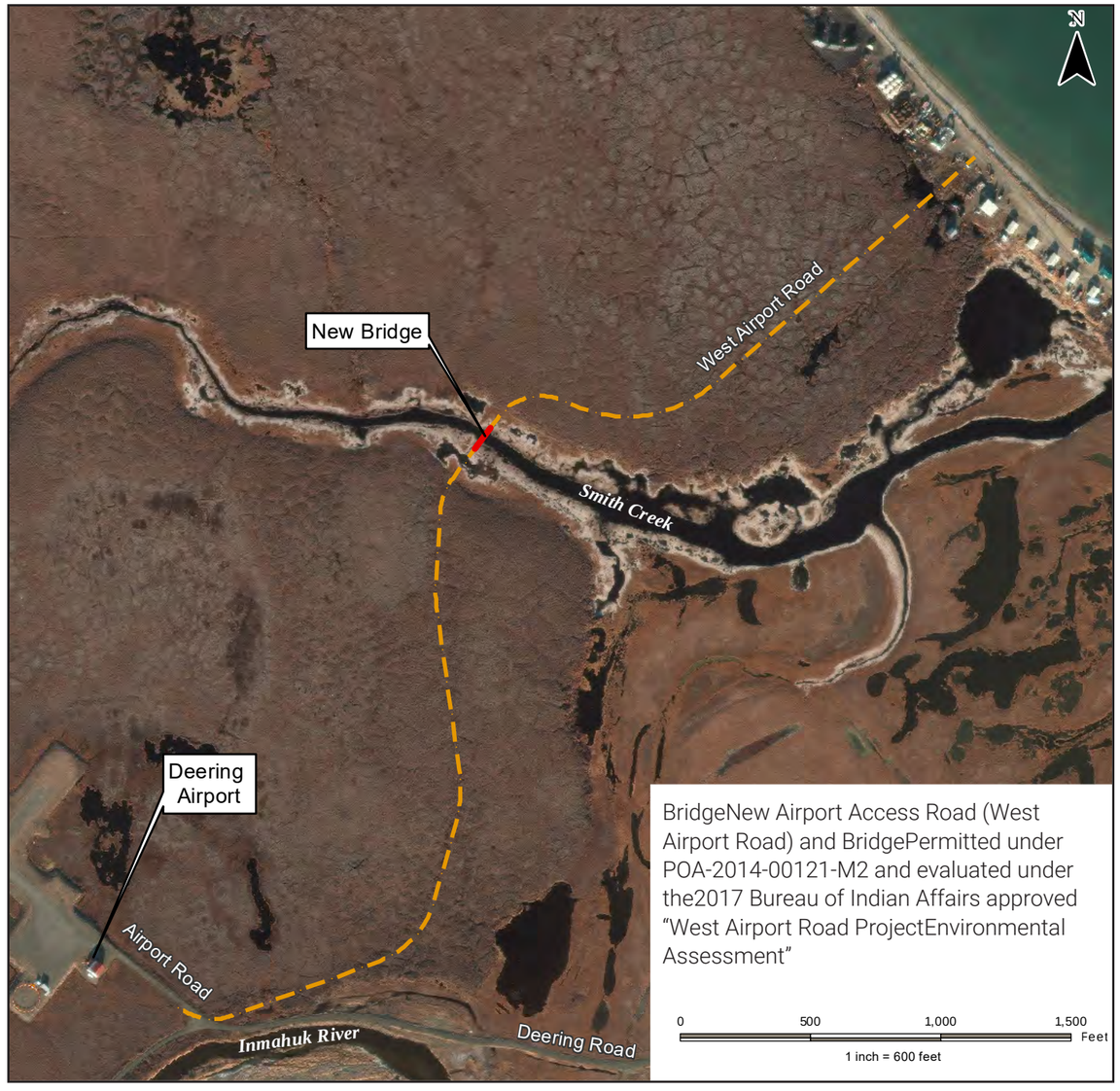
Project Design

We are considering the following improvements to resolve issues at the airport. As the preliminary design progresses, additional details will be provided.

Proposed Action Items:

1. Rehabilitate the runway, taxiway, and apron surfaces by adding a new layer of gravel.
2. Repair the runway embankment that has started to show surface cracks due to settlement.
3. Construct a new airport access road, including a new bridge over Smith Creek.
4. Apply dust control to the runway, taxiway, and apron.
5. Replace the airport lighting system.
6. Improve airport drainage
7. Resolve issues with snow drifting at the airport, including considerations for prevailing winds, embankment geometry, snow management practices, and possible use of snow fencing.
8. Utilize existing gravel bar(s) within the Inmachuk River floodplain for a material source and mobilize these materials and other equipment to the airport construction area using the combined existing community barge landing and developed roads.

New Airport Access Road and Bridge



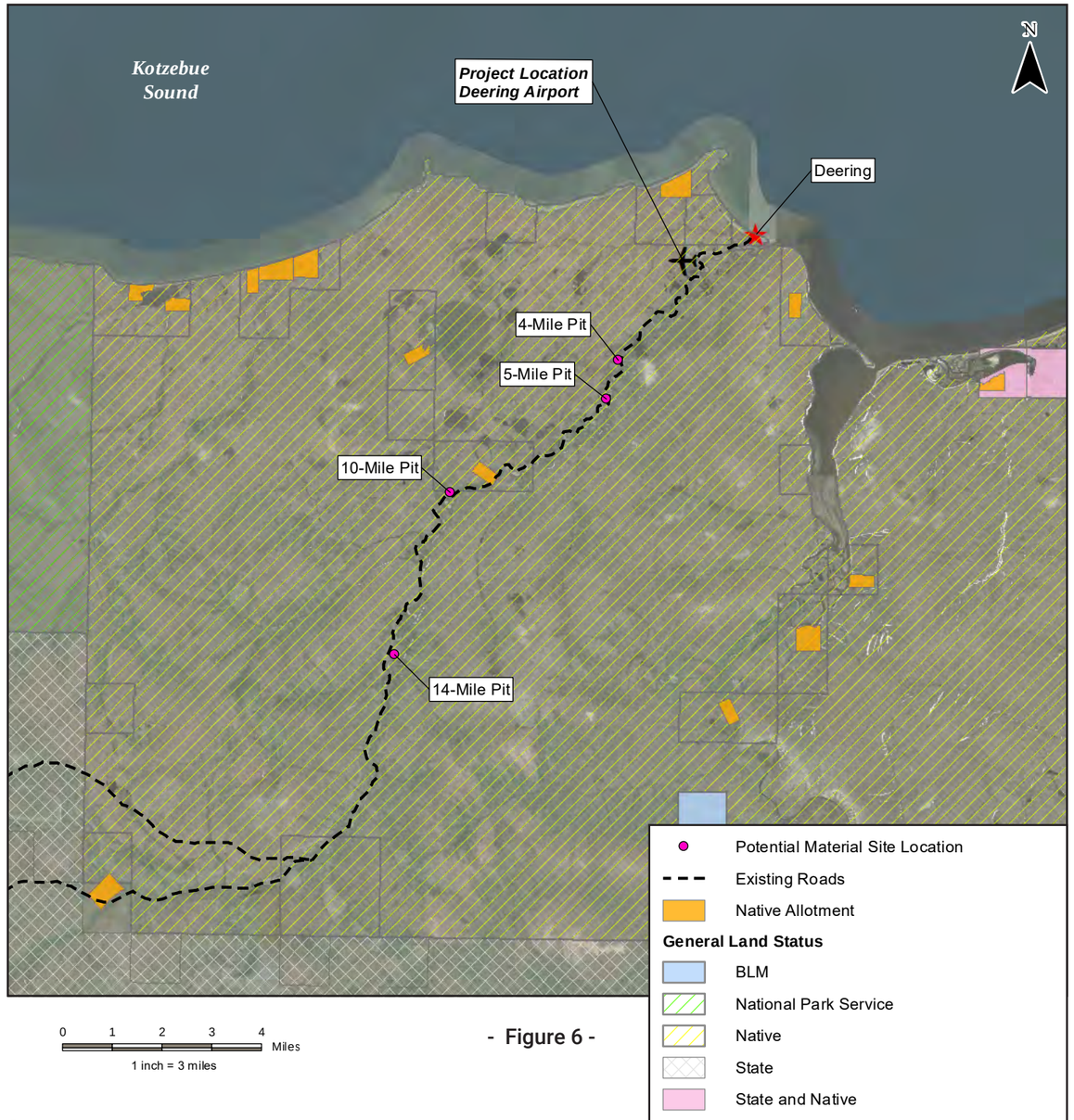
- Figure 4 -

Proposed Snow Fence

- Figure 5 -

Potential Material Site Locations and General Land Status

Potential material site locations, developed from aerial photography will be evaluated to determine viability for use as potential material sites for this project. Geotechnical evaluations will be performed to determine if these material sites are viable for use on this project.



- Figure 6 -

Project Project Activities and Milestones

1. **Geotechnical Investigations** – Crew will be in Deering by late fall/early winter 2020 (subject to change re: COVID).
2. **Draft Environmental Assessment** – Currently in development, with proposed completion by Winter 2021.
3. **Final Design** – Scheduled to be complete by December 2021.
4. **Advertise the Project for Bid** – January 2022.
5. **Proposed Construction Timeframe** – 2022-2023

Deering Airport and Access Road Improvements

Project Update

Project Numbers (State/Federal): NFAPT00249 / AIP TBA

August 10, 2020

Figures

Project Origin: City of Deering
Cape Nome Recording District,
Township 08N, Range 20W, Section: 25
Township 08N, Range 19W, Section: 19 & 30
Kateel River Meridian
USGS: KOTZEBUE (A-2) ALASKA
Deering Airport
Latitude: 66.0691 N

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

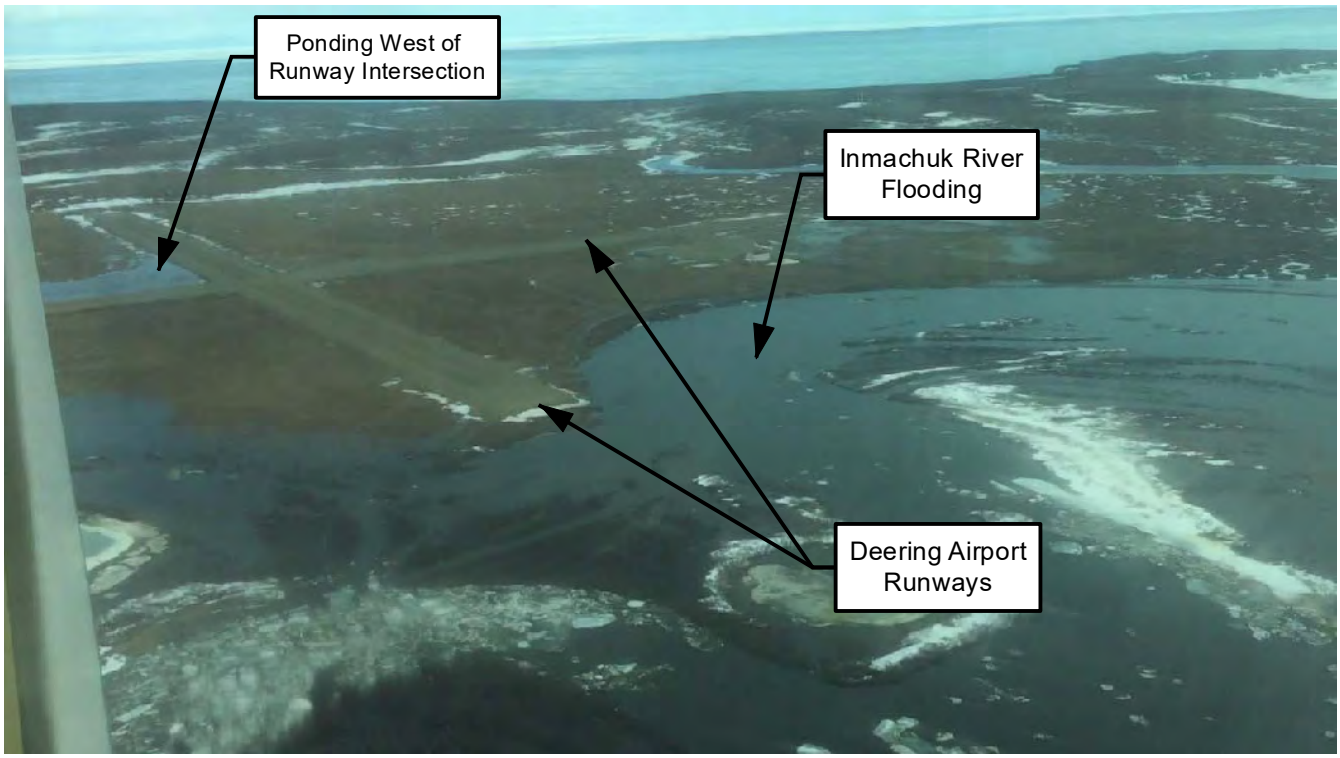
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Location & Vicinity Map

DATE: June, 2020

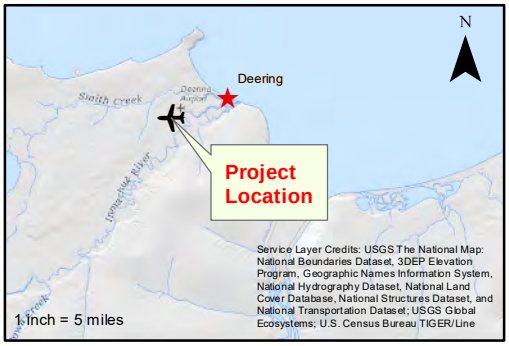
FIGURE **1**

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig01_Loc_Vic.mxd



Deering Airport, Spring 2016

Source: RFP 25-17-1-070 Attachment 1



STATE OF ALASKA
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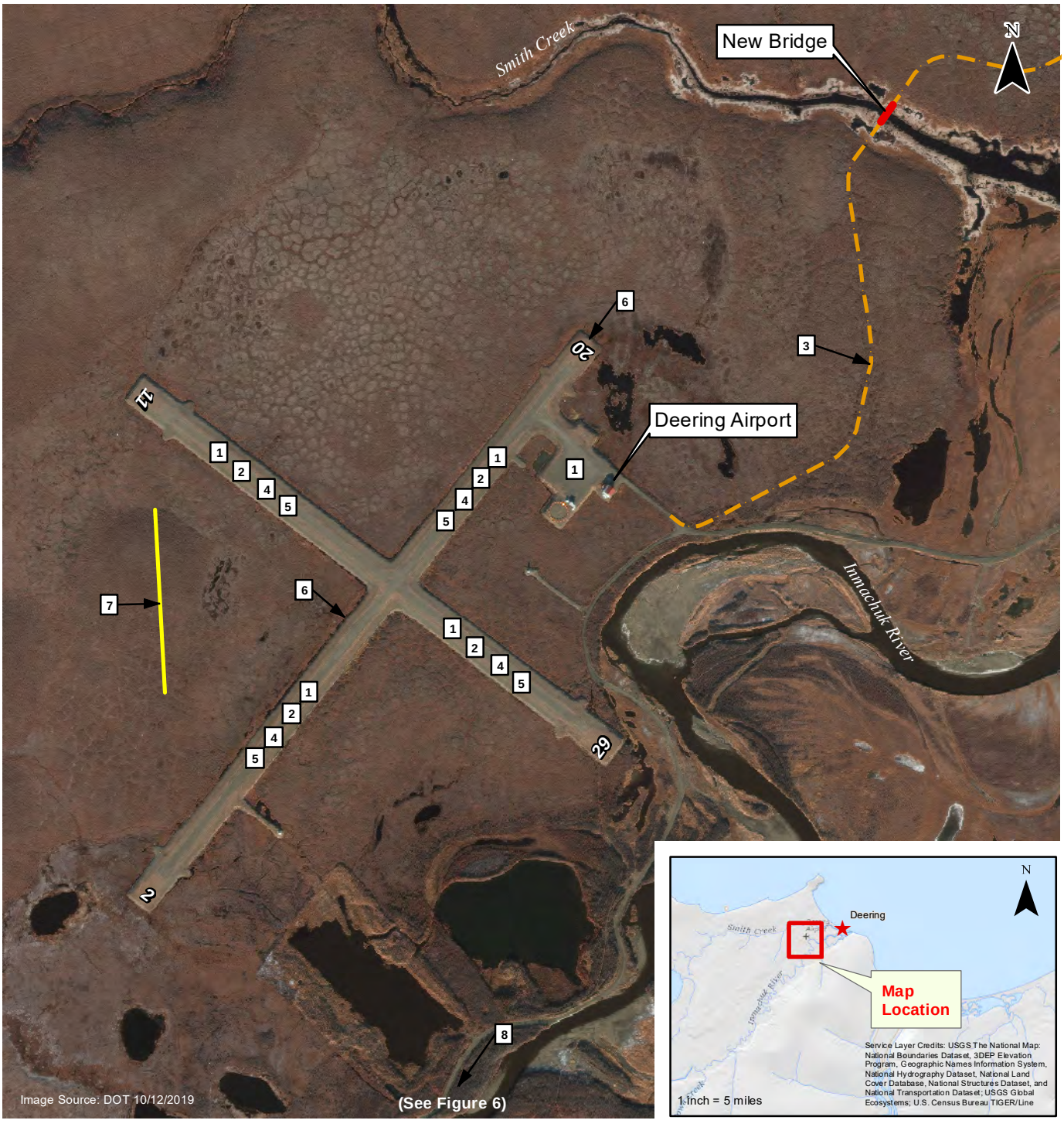
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Historic Flooding (Spring 2016)

DATE: June, 2020

FIGURE **2**

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig02_Flood.mxd



0 500 1,000 1,500 Feet

1 inch = 800 feet

Proposed Action Items:

1. Rehabilitate and Resurface Airport Surfaces
2. Repair Runway Embankments
3. Construct a New Airport Access Road and New Bridge (See Figure 4)
4. Apply Dust Palliative to Airport Ground Traffic Surfaces
5. Replace Airport Lighting System
6. Improve or Re-Establish Airport Drainage
7. Construct New Snow Fence (See Figure 5)
8. Utilize Existing Gravel Bar(s) for Material Source (See Figure 6). Haul Material to Airport using Existing Barge Landing and eveloped Roads.

STATE OF ALASKA
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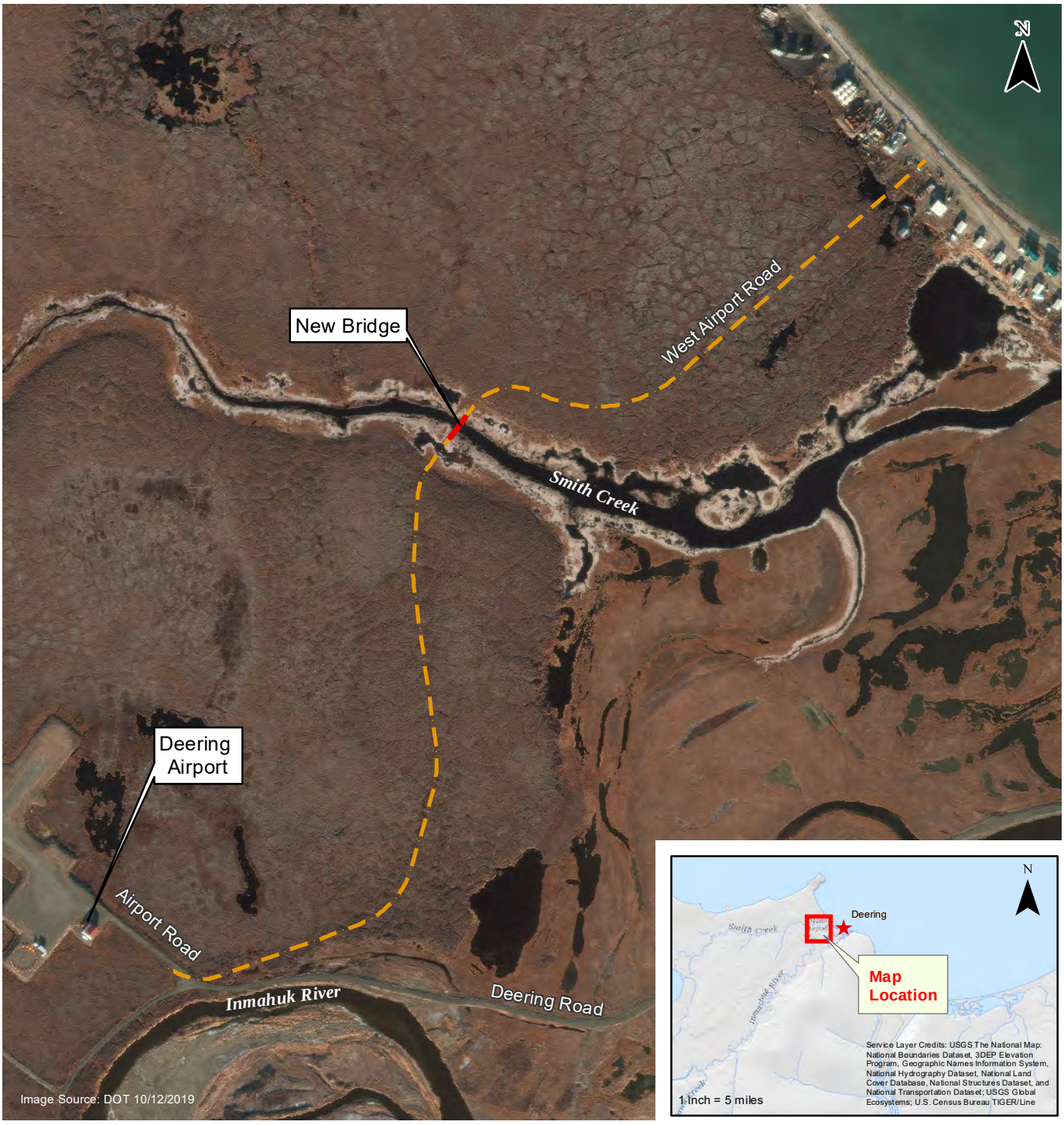
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Proposed Action Site Plan

DATE: June, 2020

FIGURE 3

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig03_Site_Plan.mxd



0 500 1,000 1,500 Feet

1 inch = 600 feet

New Airport Access Road (West Airport Road) and Bridge
Permitted under POA-2014-00121-M2 and evaluated under the 2017 Bureau of Indian Affairs approved "West Airport Road Project Environmental Assessment"

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DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

New Airport Access Road and Bridge

DATE: June, 2020

FIGURE 4

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig04_New_Airport_Access_Rd.mxd

0 500 1,000 1,500 Feet

1 inch = 833.33 feet

Proposed snow fence to protect the entire airport.

Snow Fence

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

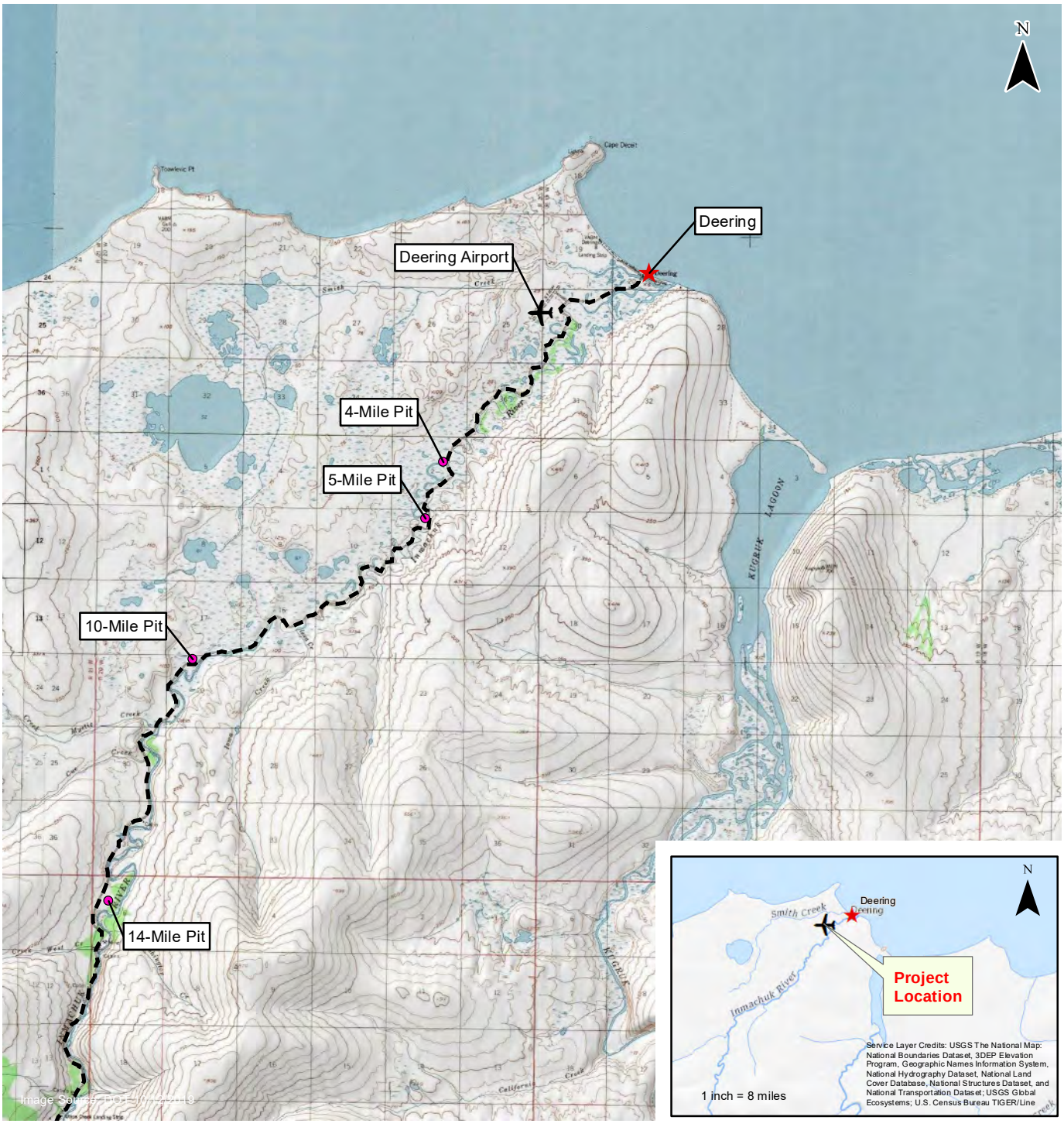
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Proposed Snow Fence

DATE: June, 2020

FIGURE **5**

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig05_Snow_Fence.mxd



0 1 2 3 4 Miles

1 inch = 2 miles

Potential Material Site Location

Deering Road (Existing)

Potential Material Sites:

1) 4 Mile Pit (Mile 4.4)
2) 5 Mile Pit (Mile 5.5)
3) 10 Mile Pit (Mile 10.X)
4) 14 Mile Pit (Mile 14.3)

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DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Potential Material Sites

DATE: June, 2020

FIGURE **6**

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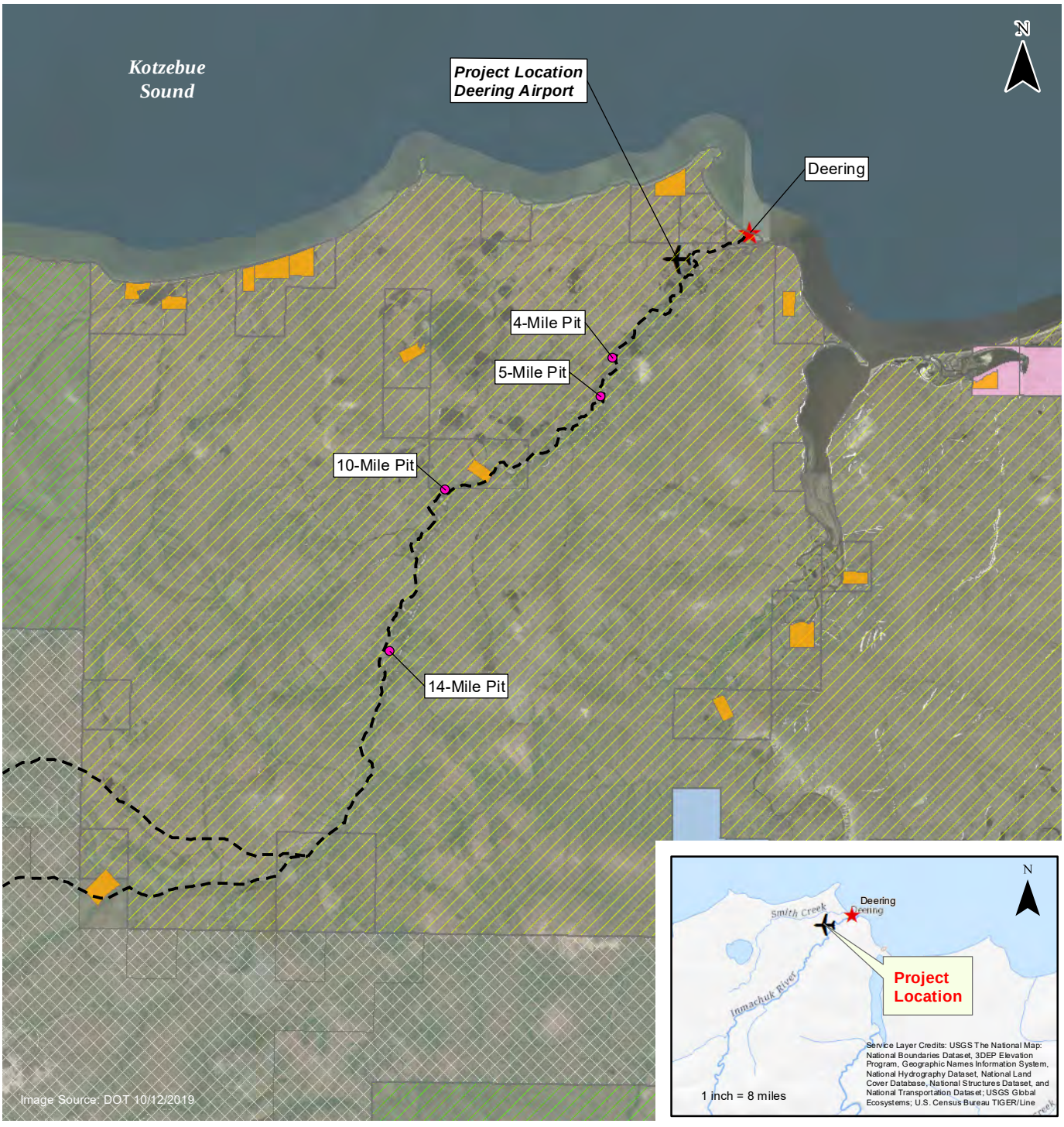

0 1 2 3 4 Miles

1 inch = 3 miles

- Potential Material Site Location
- Existing Roads
- Native Allotment

General Land Status

- BLM
- National Park Service
- Native
- State
- State and Native

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Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

General Land Status

DATE: June, 2020

FIGURE 7

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Public Meeting Notes

Deering Airport, Snow Fence & Access Road
IRIS No. NFAPT00249
(Stantec 2047062400)

Community Meeting
September 9, 2020

Participants:

Name	Office	Name	Office
Jonathan Hutchinson	NR- Aviation	Monique Garbowicz	Stantec
Paul Karczmarczyk	NR-Environmental	Sara Lindberg	Stantec
Bonita Barr	Deering	Michael Hansmeyer	Stantec
Calvin	Tribal Member		
Deborah	Tribal Member		
Delores	Tribal Member		

6:11 PM

- **Jonathan** introduction to project (re: brochure). Community has been trying to address access road issues for past decade; Issues currently present during site visit.
    - Schedule:
        - Environmental & Preliminary Design this Fall
        - Environmental Community Input this Winter
        - Finalize Environmental Documents this Spring
        - Final Design in 2021
        - Construction into 2023
- **Paul** introduction to Environmental process; emphasis on need for community input during process:
    - Best time to access river
    - Subsidence Activities
    - Barge Landing/Contractor Staging Areas
    - Dedicated Community Contacts going forward?
- **Paul** Community input for Environmental hoping to be received by late October for incorporation into documents.

6:27 PM

- **Delores** “When are we starting West Airport Road project? 2022?”
- **Jonathan** “Yes, current schedule, advertise Spring 2022, funding from FAA in the early spring, Contractor begins late fall/winter 2022.”
- **Delores** “Hiring local or bringing in people?”
- **Jonathan** “DOT not capable of dictating hiring practices however Contractors have a history of reaching out to community with training and experience i.e. trucking, laborers, camp staff.”
- **Delores** “Contractor or DOT requires CDL or license for trucking?”

- **Jonathan** “Contractor/DOT will come to community to talk training and collect resumes prior to construction. DOT will coordinate with community prior to meeting with resume requirements.”
- **Delores** “Project will be great economic opportunity for community.”
- **Sara** “Action Item with EA to incorporate qualifications for community members to become involved with project? Out to community will before construction.”
- **Jonathan** “Agreed, need to do homework on requirements for trucking in remote communities.”
- **Delores** “Local equipment or barging in?”
- **Jonathan** “Similar answer as before, Contractor will look for efficiency however DOT is not involved in equipment selection. DOT may be able to coordinate a list for potential Contractor to consider.”
- **Paul** “Gravel extraction and trucking in winter; Ground freezes and caribou move into area; Scope requires Local Subsistence Advisor for Contractor; 2 or 3 personnel. Good way for Contractor and Community to communicate. Try to name individual(s) as soon as possible to solidify contacts.”

6:38 PM

- **Jonathan** reviewing scope of project; pg. 6 of brochure. Questions?
- No questions.

6:48 PM

- **Jonathan** closing; thank you for all attendees

Draft EA Public Notice

Notice of Draft Environmental Assessment - Deering Airport Improvements

Notice of Draft Environmental Assessment Availability
Deering Airport Improvements
Project #: NFAPT00249

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), is seeking your review of, and comments on, the Draft Environmental Assessment (EA) for the Deering Airport Improvements Project NFAPT00429, in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). The Draft EA can be found on the project website at the following link: http://dot.alaska.gov/nreg/deering/

The project scope is to resurface the existing runway, taxiway, and apron; repair runway, taxiway and apron shoulders; upgrade lighting system and electrical building; construct a new airport access road; replace segmented circle; and apply dust palliative. The project would address existing airport deficiencies, bringing the Deering Airport into compliance with current Alaska Statewide Transportation Plan (ASTP), the Alaska Aviation System Plan (AASP), and FAA design standards

This proposed project will comply with:

- Section 106 of the National Historic Preservation Act
- Executive Order: 11990 (Wetlands Protection)
- Executive Order:11988 (Floodplain Protection)
- Executive Order:12898 (Environmental Justice)
- Clean Air Act
- Clean Water Act
- Fish and Wildlife Coordination Act
- U.S. DOT Act Section 4(f)

If you have any questions, require additional information, or would like to submit a comment, please contact: Jonathan Hutchinson, P.E., Engineering Manager, at (907) 451-5479, or TTY 771 or 1-800-770-8973 or send an e-mail to jonathan.hutchinson@alaska.gov, or by mail to:

Jonathan Hutchinson, P.E. Engineering Manger
Department of Transportation & Public Facilities
2301 Peger Road
Fairbanks, Alaska 99709-5316

Please submit comments no later than

February 28, 2022 to ensure consideration in the Final Environmental Document.

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

Attachments, History, Details

Attachments
None

Revision History
Created 1/26/2022 1:27:22 PM by emiller-chapman
Modified 1/26/2022 1:27:50 PM by emiller-chapman
Modified 1/26/2022 1:28:59 PM by emiller-chapman

Details

Department:	Transportation and Public Facilities
Category:	Public Notices
Sub-Category:	
Location(s):	Statewide
Project/Regulation #:	Deering Airport Improvements NFAPT00249
Publish Date:	1/26/2022
Archive Date:	3/1/2022
Events/Deadlines:	

Draft EA Website

Alaska Department of Transportation and Public Facilities
NORTHERN REGION

Deering Airport and Access Road Improvements

State/Federal Project Numbers: NFAPT00249/AIP TBA

The Deering Airport is owned by the Alaska Department of Transportation and Public Facilities (DOT&PF) and is located on the Seward Peninsula about 4,000 feet (ft.) inland from the south shore of Kotzebue Sound near the mouth of the Inmachuk River (Figure 1). It is approximately 55 miles south of Kotzebue, Alaska, 135 miles northeast of Nome, Alaska, and 35 miles south of the Arctic circle.

PROPOSED ACTION

The Proposed Action would address existing airport deficiencies, bring the Deering Airport into compliance with current Alaska Statewide Transportation Plan (ASTP), the Alaska Aviation System Plan (AASP), and Federal Aviation Administration (FAA) design standards, and include the following elements (Figure 2):

Airport

- Rehabilitate and resurface airport surfaces.
- Repair runway embankments.
- Apply dust palliative to airport ground traffic surfaces.
- Replace the airport lighting system.
- Improve or re-establish sufficient airport drainage.

Access Road

- Construct a new airport access road, including several cross-drainage culverts and a new bridge over Smith Creek. Overhead utilities will be adjusted for proper clearance, which may include installation of two new power poles adjacent to the new roadway corridor.

PURPOSE AND NEED

The Deering Airport and existing access road are subject to seasonal flooding and the airport does not meet current FAA design standards. Airport rehabilitation and new access road construction would ensure safe and reliable year-round air transportation for Deering. The purpose of the project is to provide the community of Deering with safe and efficient airport access and address Deering Airport deficiencies that would bring the airport to current standards and meet criteria identified in the ASTP, the AASP, and current FAA design standards.

Existing Airport Deficiencies - The current aircraft fleet mix serving Deering consists primarily of the Cessna 208B, PA31 Piper Navajo, and Casa C212; with larger deliveries made by DC-6, and medevac services by Beechcraft 200.

The Deering Airport has two gravel surface runways designated as Runway (RW) 3-21 and RW 12-30. Snow removal operations have graded off most of the runway surfacing, resulting in rutting and ponding. Drifting snow collects west of the runway intersection, requiring an extensive annual snow removal effort and creating meltwater ponding against runway embankments in the spring. These elements keep airport maintenance costs high. Additionally, the airfield’s surface course and lighting system have exceeded their useful lifespan and need rehabilitation or replacement.

Inmachuk River Flooding - The Deering Airport is subject to flooding due to spring ice jams and strong periodic storm surges from Kotzebue Sound. In 2015 and 2016, ice jams at the Inmachuk River mouth submerged portions of the airport access road (Deering-Inmachuk Road which lies mostly off airport property) between the community and the airport and extending to the runway embankment

(Figure 3). In 2016, these conditions caused the State of Alaska to declare a community disaster at Deering. Historical flood data does not indicate that floods have crested the airport surfaces.

Deering is off the road system, with the only year-round accessibility by air transportation, and barge service limited to summer months. While small boats, all-terrain vehicles, and snowmachines are used for personal inter-village and subsistence travel, Deering relies heavily on year-round air transportation for major commerce, supplies, fuel, access, and medical evacuation needs.

Notice of 2022 Public Meeting

NOTICE OF PUBLIC MEETING

Deering Airport and Access Road Improvements

Project Numbers (State/Federal): NFAPT00249 / AIP TBA

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), is seeking your review of, and comments on, the Draft Environmental Assessment (EA) for the Deering Airport Improvements Project NFAPT00429, in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). The Draft EA went out for Public Comment on January 26, 2022, and can be found on the project website at the following link: http://dot.alaska.gov/nreg/deering/

The project purpose is to remedy Deering Airport deficiencies, bring the airport to current FAA design standards, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP).

The project scope is to resurface the existing runway, taxiway, and apron; repair runway, taxiway and apron shoulders; upgrade lighting system and electrical building; construct a new airport access road; replace segmented circle; and apply dust palliative. The project would address existing airport deficiencies, bringing the Deering Airport into compliance with current Alaska Statewide Transportation Plan (ASTP), the Alaska Aviation System Plan (AASP), and FAA design standards

Please join us by phone to discuss the proposed project!

When: Thursday, March 10th, 2022 at 5:00 pm

Where: teleconference

call in Toll-Free: (800) 315-6338 & then use the Code: 60104#

To request further information about this project, you may contact:

Jonathan Hutchinson, P.E., DOT&PF Engineering Manager
2301 Peger Road, Fairbanks, AK, 99709
jonathan.hutchinson@alaska.gov

THANK YOU for your interest in the project and your participation in the Environmental process!

*The proposed project will comply with Section 106 of the National Historic Preservation Act; Executive Orders: 11990 (Wetlands Protection), 11988 (Floodplain Protection), 12898 (Environmental Justice), 11593 (Historic Preservation), 13084 (Consultation and Coordination with Indian Tribal Governments); the Clean Air Act, Clean Water Act, Fish and Wildlife Coordination Act, and U.S. DOT Act Section 4(f).

Handout

Alaska Department of
Transportation & Public Facilities

Deering Airport and Access Road Improvements

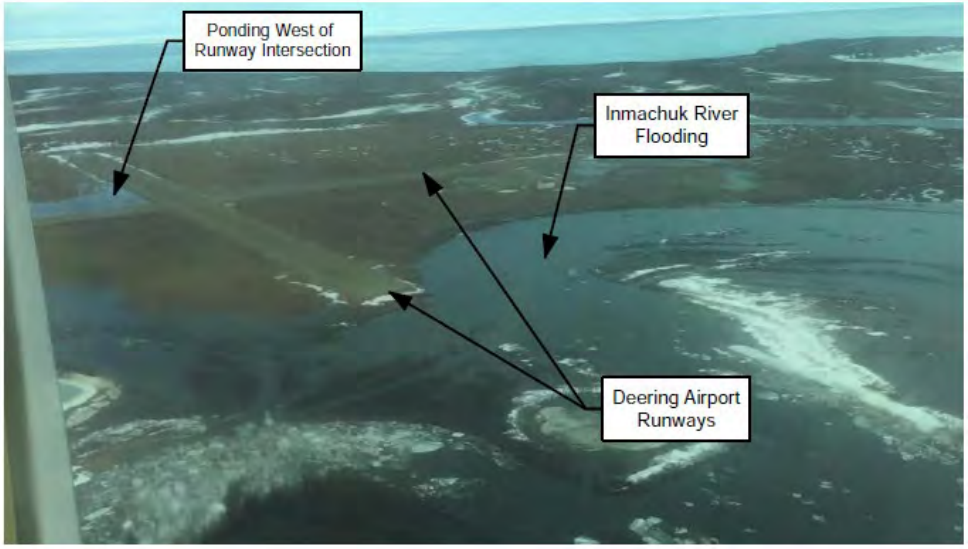
Draft Environmental Assessment and Project Permit Meeting

Purpose & Need, and Scope

The project purpose is to remedy Deering Airport deficiencies, bring the airport to current Federal Aviation Administration (FAA) design standards, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP).

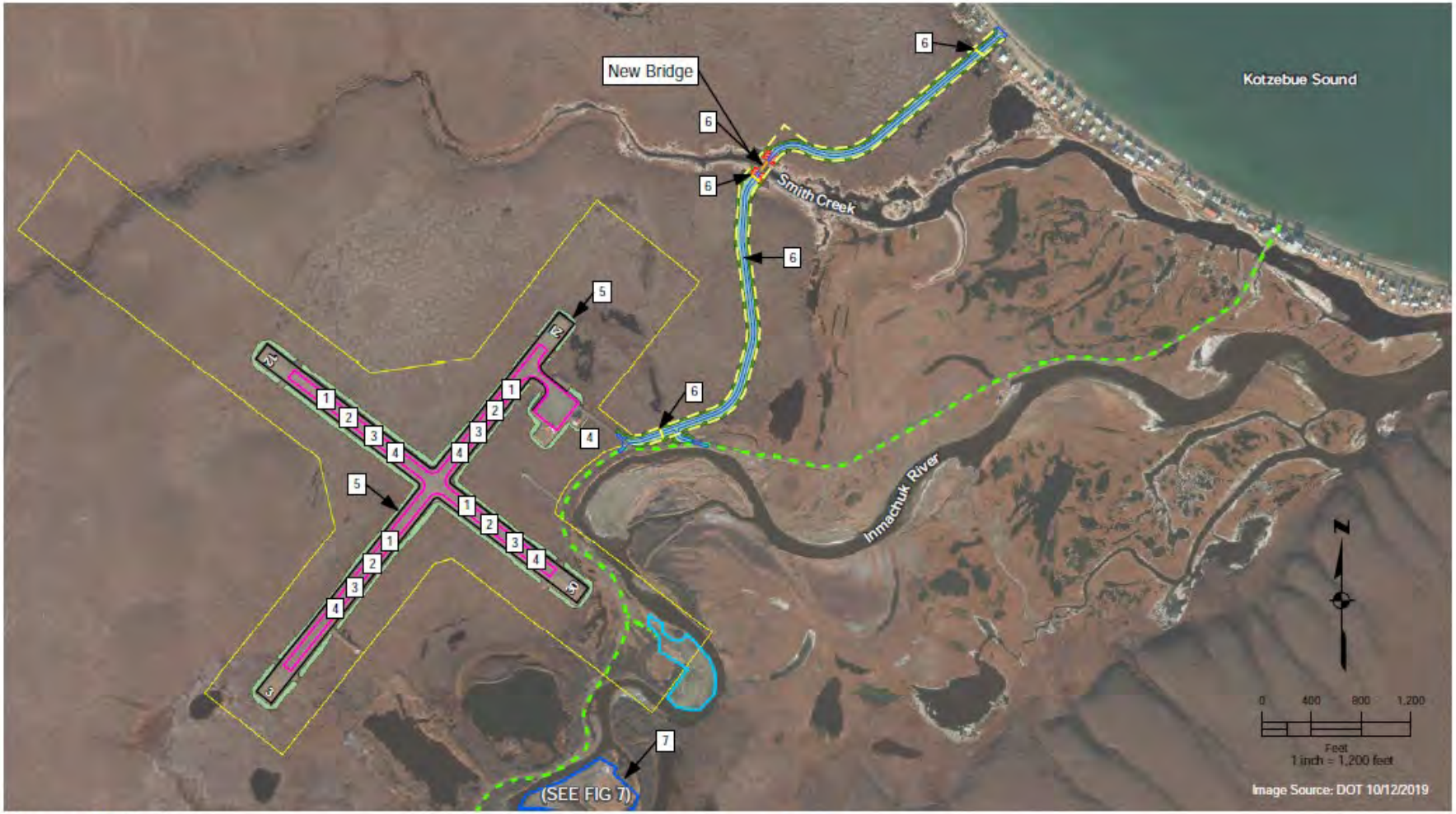
The project scope is to:

- Resurface the existing runway, taxiway, and apron;
- Repair runway, taxiway and apron shoulders;
- Upgrade lighting system and electrical building;
- Construct a new airport access road;
- Replace segmented circle; and
- Apply dust palliative.



Status and Schedule

- Scoping Meeting – July 2020 (complete)
- Field Visit and Studies – September 2020 (complete)
- Community Meeting – September 2020 (complete)
- USACE Permit – December 2021 (complete)
- Draft EA – January 2022 (complete)
- Final EA / FONSI – May 2022
- R/W Acquisition from NRC – Fall 2022
- Final Design – Winter 2022/23
- NWAB Permit – Winter 2022/23
- Construction – 2023-2025



Proposed Action Items:

1. Rehabilitate and Resurface Airport Surfaces
2. Repair Runway Embankments
3. Apply Dust Palliative to Airport Ground Traffic Surfaces
4. Replace Airport Lighting System
5. Improve or Re-Establish Airport Drainage
6. Construct a New Airport Access Road, Culverts, and New Bridge
7. Utilize Existing Gravel Bar(s) for Material Source (See Figure7). Haul Material to Airport using Existing Barge Landing and Developed Roads

- Deering Road/Existing Access Roads
- Edge of Runway/Apron Pavement Area
- Runway/Taxiway Safety Area
- New Airport Access Road
- New Culverts
- Proposed ROW Acquisition for Access Road
- Potential Material Sites
- Potential Staging Area
- New Bridge
- Temporary Work Pad
- Existing Airport Boundary
- Permanent Impacts
- Temporary Impacts

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Deering Airport and Access Road Improvements

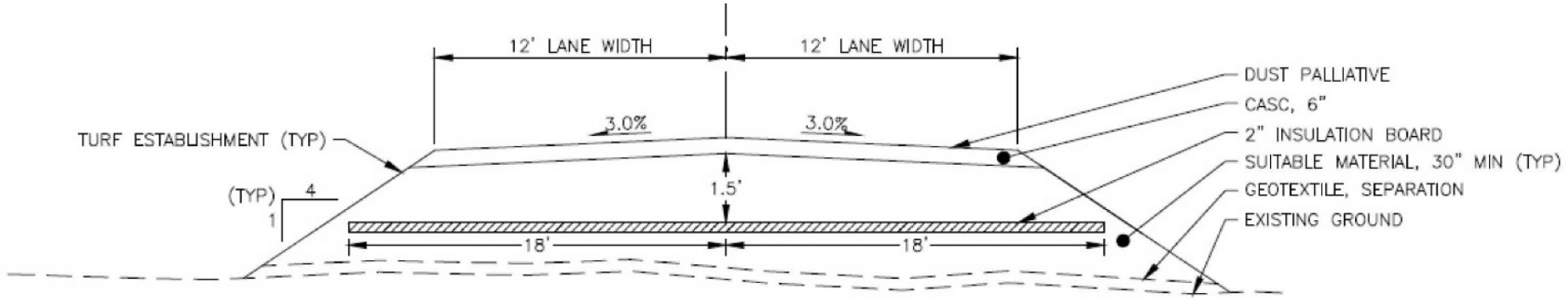
Proposed Action Site Plan

Environmental Assessment

DATE: March, 2021 | FIG. 2

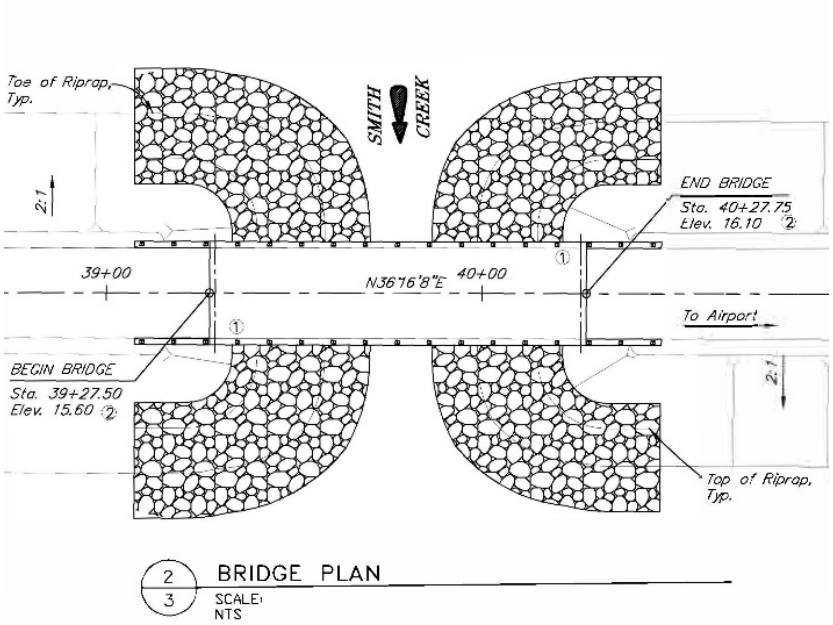
Road Design

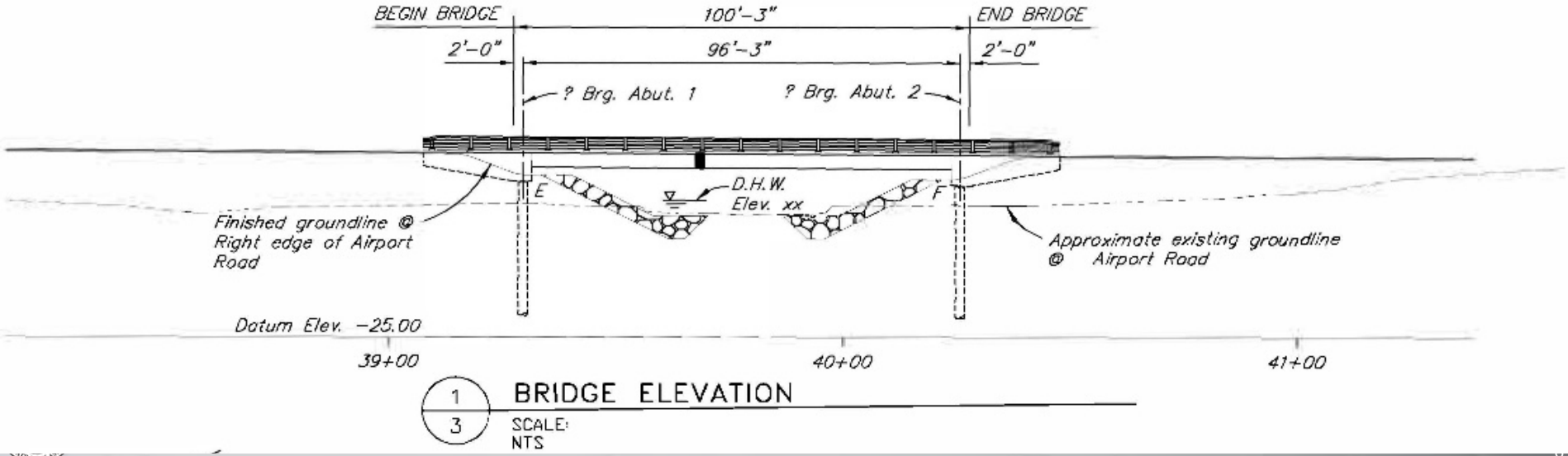
- Length: ~0.9 miles
- 24’ driving surface, 4:1 slopes
- 20’ temporary construction impacts outside the fill
- Construction sequencing:
  - 2 construction seasons: Both Winter and Summer
  - Summer mobilization
  - Winter material excavation
  - Summer airport and drainage structure construction



Smith Creek Bridge

- 100’ Long, 27’ Wide
- 2 Lane, steel girders. Concrete surface.
- Designed to accommodate high water, navigation, and winter snow machine traffic



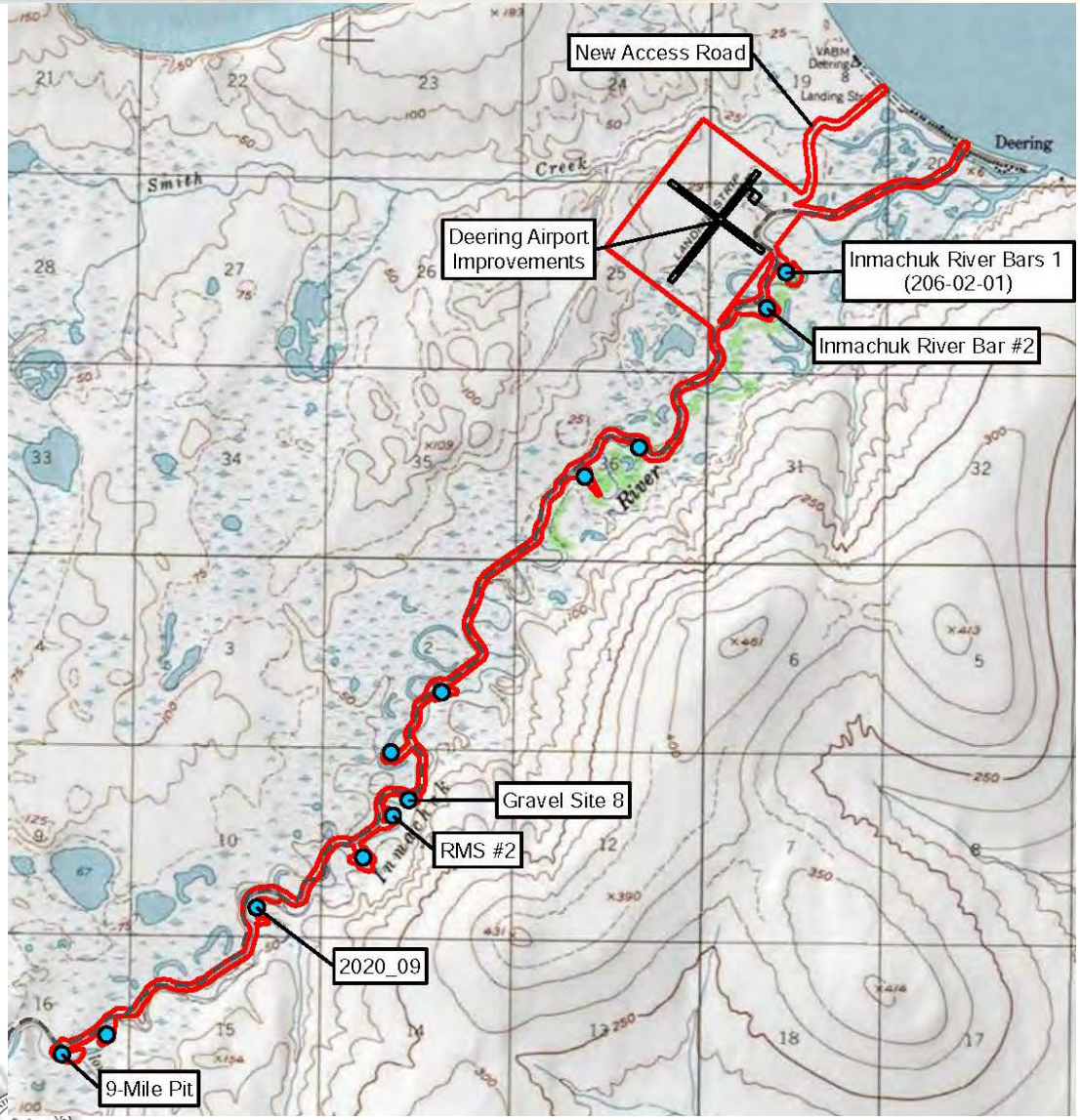


example

27’ wide x 100’ long

Steel girders, prefab concreate surface

Material Sources



Approximate volume required 150K-200K CY

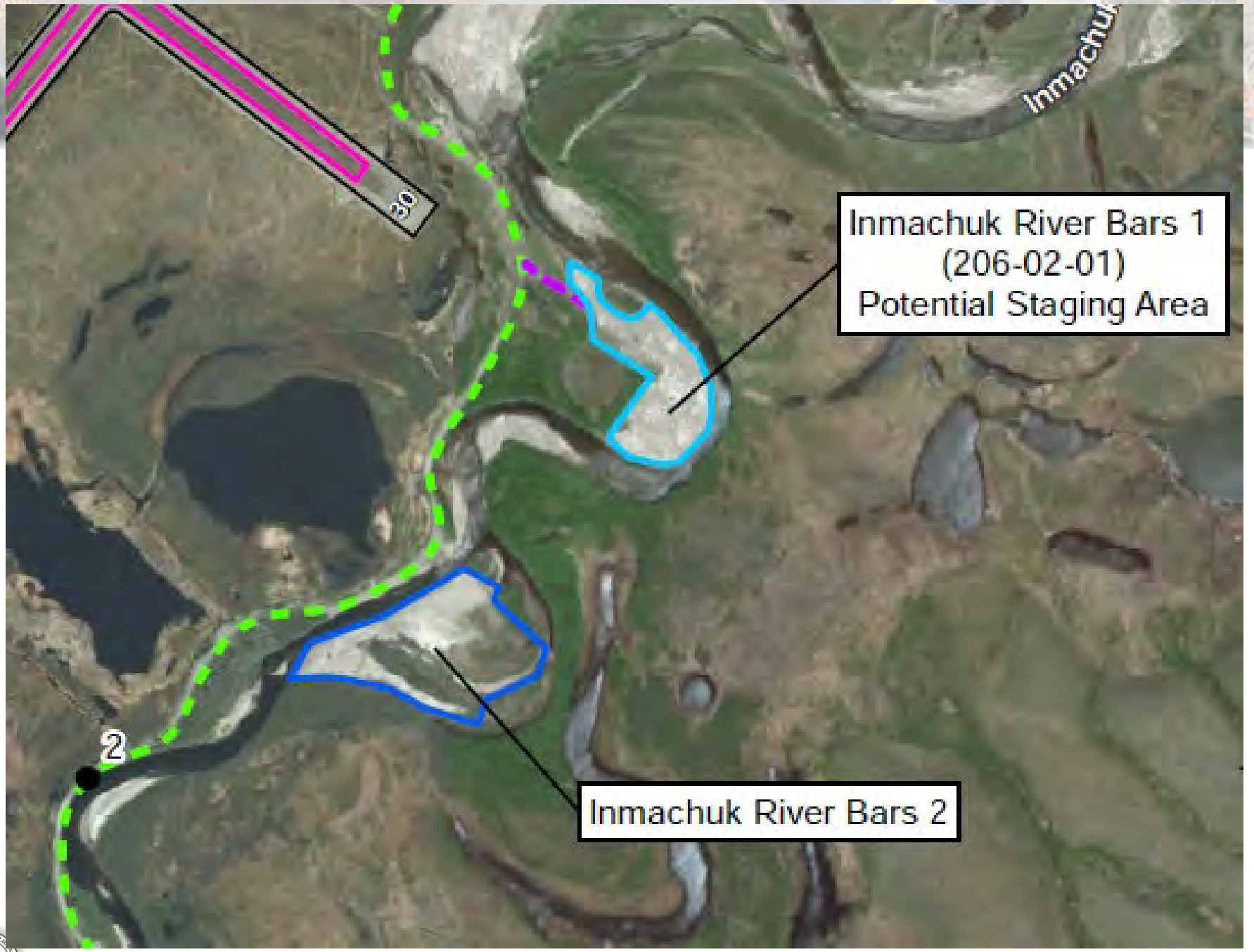
Six total material/staging sites:

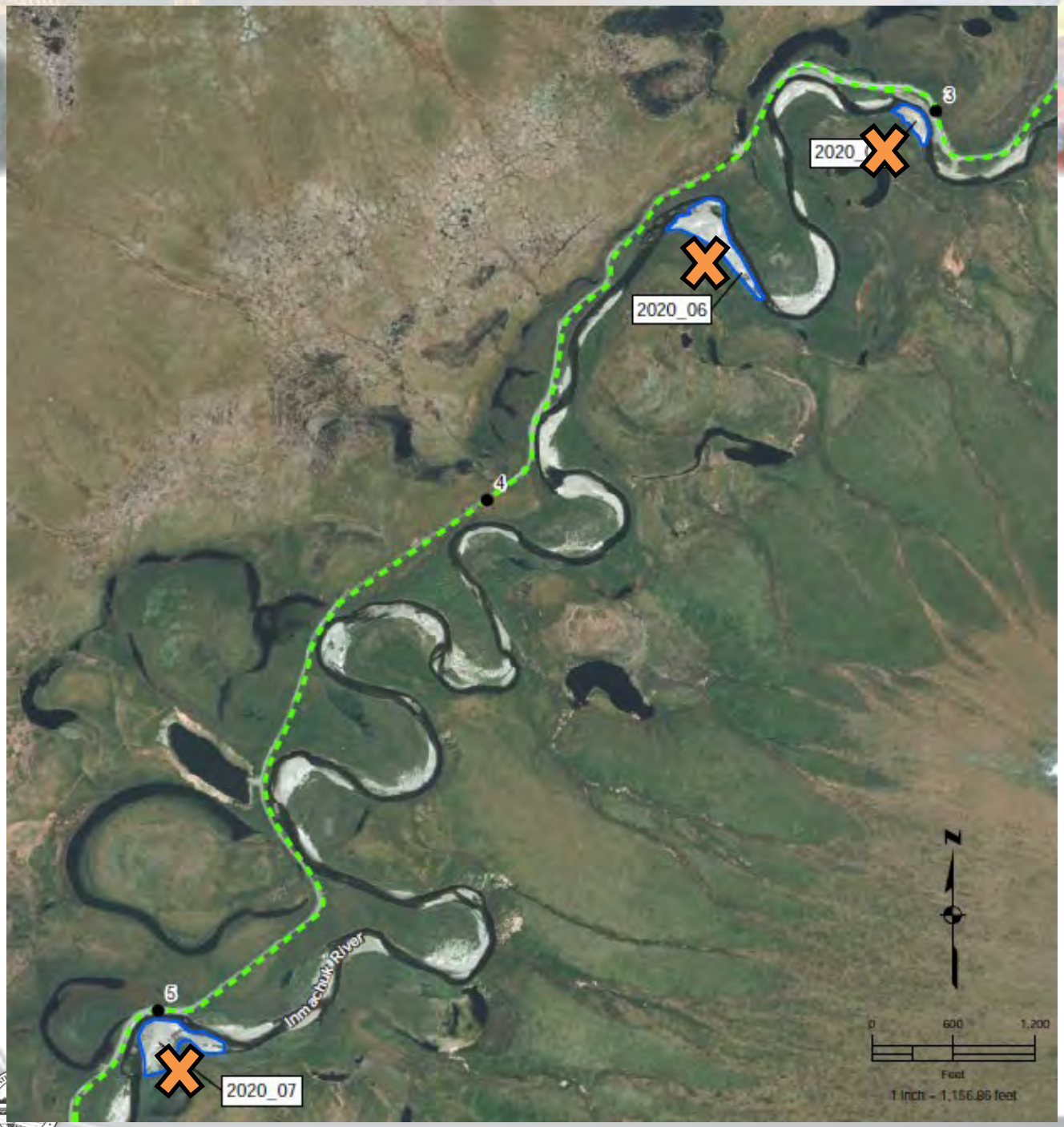
- Inmachuk River Bar #1 (stage)
- Inmachuk River Bar #2
- Gravel Site 8
- RMS #2
- 2020_09
- 9-Mile Pit

Rock to be imported.

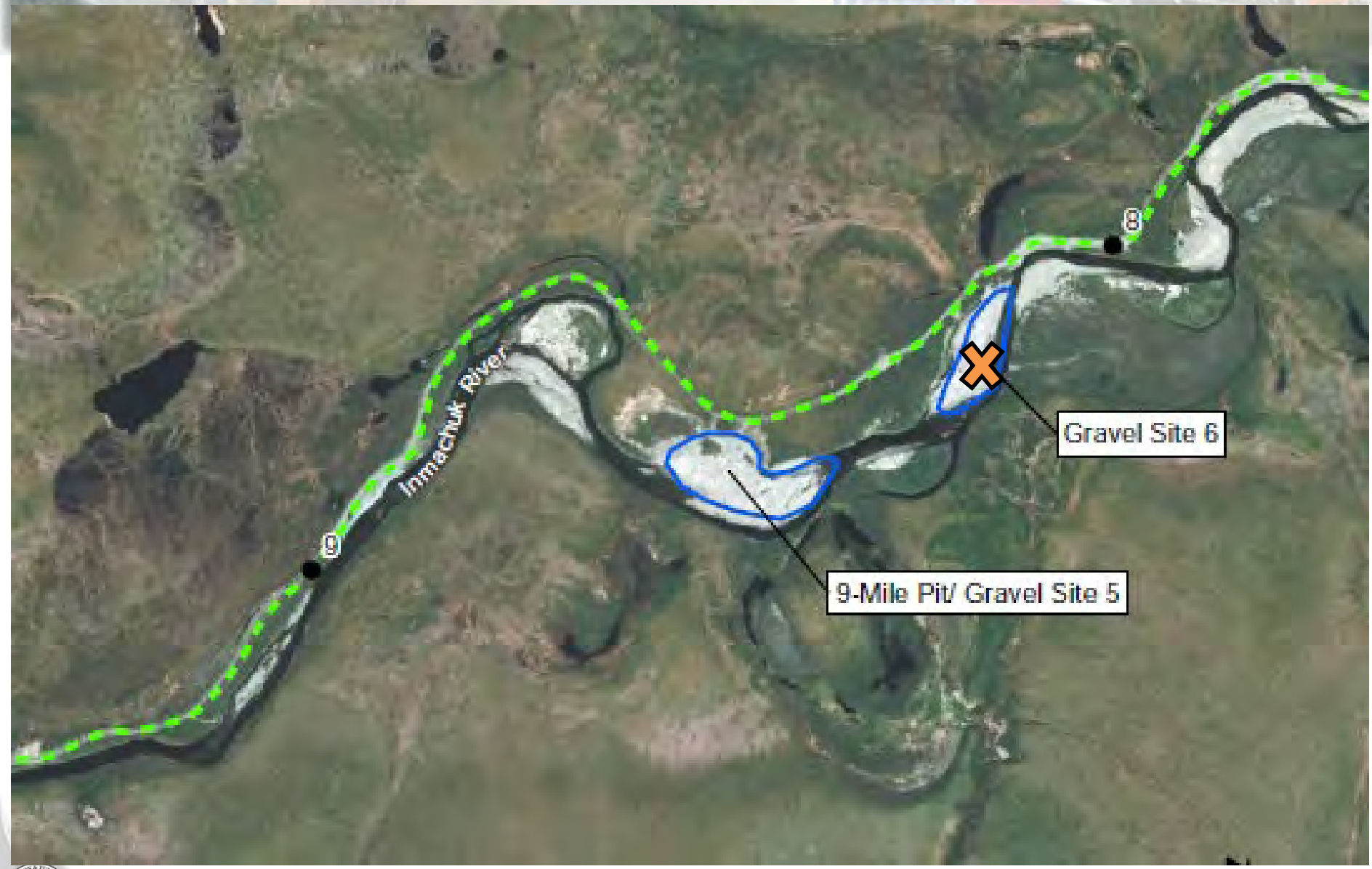
Some minor repairs may need to be made to the road for the haul.

Access to sites on east side of river must occur in winter.


Inmachuk River Bars 1
(206-02-01)
Potential Staging Area
Inmachuk River Bars 2
30
2


3
2020_
2020_06
4
5
Innoko River
2020_07
N
0
600
1,200
Feet
1 inch = 1,156.86 feet


5-Mile Pit (206-02-07)
Potential Staging Area
Gravel Site 8
6
RMS #2
RMS #3
Itmachuk River
7
2020_09
N


8
9
Inmachuk River
Gravel Site 6
9-Mile Pit/ Gravel Site 5

Environmental Commitments

Material Sources

- Contractor will develop Project Mining and Reclamation Plan. Contractor to acquire NRC permit.
- Setbacks from the active river channel will Avoid impacts to fish
- Crossings of river will be made during winter months
- Material stockpiles will be moved out of the active floodplain before river breakup in the spring.
- The in-river mining will create overwintering fish habitat, which can benefit fish (McLean 1993).

Other:

- Dust control will be used for haul routes.
- Vegetation clearing outside of bird window (May 1 – July 20)
- Archaeological Monitoring required for excavation areas. Local hire required to accompany the monitor.

Questions?

Jonathan Hutchinson, P.E.
Project Manager
Northern Region DOT&PF
jonathan.hutchinson@Alaska.gov
907-451-5479

The Draft EA went out for Public Comment on January 26, 2022, and can be found on the project website at the following link: http://dot.alaska.gov/nreg/deering/

Extended Comment period ends March 18.

Public Meeting Notes

Deering Airport, Snow Fence & Access Road
IRIS No. NFAPT00249
(Stantec 2047062400)

Community Meeting
March 10, 2022

Participants:

Name	Office	Name	Office
Bonita Barr	Native Village of Deering	Jonathan Hutchinson	DOT&PF NR-Aviation
		Andrew Niemiec	Stantec
		Ryan Cooper	Stantec

5:00PM

- Jonathan
  - Introduction to project
    - Resurface/repair airport
    - Construct new access road
    - Develop new material sites
  - New deadline for comments is March 18th
  - Status and Schedule
    - Scoping Meeting – July 2020 (complete)
    - Field Visit and Studies – September 2020 (complete)
    - Community Meeting – September 2020 (complete)
    - USACE Permit – December 2021 (complete)
    - Draft EA – January 2022 (complete)
    - Final EA / FONSI – May 2022
    - R/W Acquisition from NRC – Fall 2022
    - Final Design – Winter 2022/23
    - NWAB Permit – Winter 2022/23
    - Construction – 2023-2025
- Bonita
  - Wanted to know if DOT&PF was able to use Deering's completed design
- Jonathan
  - Yes, we used it as the basis. We did have a few small changes along the road. We can have a follow up meeting on the exact changes
  - We also incorporated reflective roadside markers, as requested by the community for night safety
- Bonita

    - Need a higher than tundra road. Right now is level, and with clearing & snow plowing, it makes it worse. It really needs to be a higher than a tundra road.
        - Jonathan: Yes, it will be higher. Average will be about 6.5 feet above the tundra. This helps for working on the permafrost. It will be elevated well above the surrounding tundra.
    - Road Alignment
        - New village road end will tie in with the old fuel tank farm. About 1 mile away from the current road
        - Will have a new bridge over Smith Creek. Will be a significantly improved bridge from the current one.
            - Current bridge has sandbags, new bridge will have rock protection
            - New bridge will be able to handle heavy trucks for the community
            - Slide 7 has photos of bridge that would be comparable
- Bonita does have video conference ability at the office. She isn't at the office now.
    - Jonathan offers video conference at a later date
    - Bonita says she wants Gloria to be involved. Gloria will be new contact, since Bonita is planning on taking the summer off.
- Jonathan offers to set up another conference at a later date, if it works better for the community. Emphasis that we want to collect comments from the community.
    - Bonita would prefer to have another follow up call. Gloria wasn't able to make this one.
    - Bonita says tribal president just took off on plane today. She wants to be part of the conversation also. Bonita will coordinate when a better time will be.
    - Bonita says setting a good time has been rough, lots of things going on in the village.
    - Bonita says Covid has been coming into the village now.
        - One person had to medivac out by airport due to Covid. Airport is important for medivac, as is the access road to the airport.
    - Bonita thinks maybe Tuesday would work better, so folks can gather on Monday.
    - Bonita will talk to people on Monday and will set a time. Might work better to do at 6pm even. If no one else wants to attend, then any time between 8am and 5pm would work for Bonita.
- Jonathan values the community's comments, especially on discussion on material sources and extracting gravel in the river.
- Bonita emphasizes that the community just wants the road to be built. The talk has happened for so long, the community doubts it will be built.
- Jonathan confident that if Right of Way is purchased, then contractor can be hired in Spring 2023. Construction might then start in 2024. There might be time to start material source extraction in Fall 2023.

- Bonita is monitoring gravel sources – last year there was so much rain, most gravel along the roadside just washed away. The gravel is now level with the river, and there is no material in them.
    - Jonathan comments there may need to be updated imagery to look at that problem.
    - Bonita comments that the site on slide 11 (Material Source 2020_09) is a new source of gravel, where the river made a new route. The river was high all summer. There might be lots of material in there.
        - Main channel is now right above the label that says 2020_09
            - Oxbow to the west is now not the main channel. That oxbow has a lot of material.
- Bonita says there are other projects going on in Summer 2022. There is a workforce being developed
    - Have 2 new loaders, older loader, new dozer
        - Trying to get new excavator, and new bigger dozer
    - DOT&PF: Hard to say what a contractor will need. State can't commit to anything. Contractors are often interested in knowing and potentially using the equipment and local hire
        - DOT&PF will be on site about 1 month prior to contractor starting, and contractor can collect local resumes. This is likely in Summer 2023.
- Bonita: Can DOT&PF use Right of Way from City and NANA?
        - Jonathan: No, the FAA requires a more rigid interest in the right of way. It needs to be an easement specific to DOT&PF. Can't use the City's easement.
- Bonita: Trying to get a new school built.
    - Questioning if it can be along new road, right next to the ocean.
        - Can they build school right next to new road? Next to the '6' close to the fuel tanks.
    - Jonathan doesn't see any problems with that development in that location.
        - If community wants to develop any of these types of plans, feel free to bounce comments off of Jonathan.
- Bonita noticed today while driving from the airport that the level of the ice is right now adjacent to the level of the road.
    - Worried about breakup and highway overflowing the current road to the airport.
    - Kids took a ride recently up the road, and water is already over the road at points.
    - Jonathan: Any information or photos on those areas would be really valuable to DOT&PF
- Bonita: Can airport contractor pile snow on east side of airport? During spring thaws, that whole section has trouble.
    - Jonathan: DOT&PF was looking at a snow fence at one point. Backed off because the snow fence would trap snow and flood the toe of the runway embankment. Bonita's comment is spot on. One thing DOT&PF is working

on is getting some equipment to allow maintenance to clear snow to the east.
    - Bonita: Yes, any snow on the west, the melt water will just sit there, because it is too flat. Snow on the east drains to the river.
- Jonathan will set up a meeting with Bonita for Tuesday the 15th.

5:50 PM Meeting Ends

Appendix C: Agency Coordination

Agency Scoping Package

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

June 5, 2020

Re: Deering Airport and Access Road Improvements
Project Numbers (State/Federal): NFAPT00249 / AIP TBA
Subject: Request for Scoping Comments

Dear Agency Contact,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes airport and access road improvements at Deering Airport, Deering, Alaska. The Deering Airport and Access Road Improvements Project is FAA funded through the Airport Improvement Program (AIP).

The Deering Airport is located on the Seward Peninsula about 4,000 feet inland from the south shore of Kotzebue Sound near the mouth of the Inmachuk River and approximately 55 miles south of Kotzebue, Alaska (Figure 1).

DOT&PF requests your review of the proposed project and scoping comments to support preparation of its environmental document in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Your responses will help provide the necessary input to develop and design a proposed final project that avoids or minimizes potentially adverse environmental and human impacts.

Purpose and Need

The purpose of the project is to remedy Deering Airport deficiencies, bring the airport to current FAA design standards, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP). Deering Airport has two gravel surface, perpendicular runways designated as Runway (RW) 3-21 and RW 12-30. Over time, winter snow removal operations have graded most surfacing off both runways' surfaces, resulting in persistent rutting and water ponding on the underlying runway embankment. Additionally, drifting snow collects west of the runways' intersection, requiring a substantial snow removal effort and creating springtime meltwater ponding adjacent the runway embankments. These

conditions keep airport maintenance costs high. Additionally, the airfield's surface course and lighting system are beyond their useful life and need rehabilitation or replacement.

The Deering Airport and access road are also subject to flooding due both to spring ice jams in the Inmachuk River and strong, periodic storm surges from Kotzebue Sound. For example, in 2015 and 2016, ice jams at the Inmachuk River mouth submerged portions of the airport access road (Deering-Inmachuk Road), which provides access between the Deering community and the airport (and lies mostly off airport property), and also extended to one runway threshold embankment (Figure 2). In 2016, these conditions caused the State of Alaska to declare a community disaster at Deering. There are no documented flood events overtopping the airport surfaces.

There are no roads connecting Deering to any other community or transportation system, and barge service is generally limited to ice-free months. While small boats, all-terrain vehicles, and snow machines are used for inter-village and subsistence travel, Deering otherwise relies solely on air transportation for major year-round commerce, supplies, access, and medical evacuation needs.

Proposed Action

While multiple alternatives have been examined to address existing deficiencies and bring Deering Airport to current ASTP, AASP, and FAA design standards, DOT&PF has determined the Proposed Action will fulfill the project purpose and need with the fewest environmental impacts of alternatives considered and dismissed. The Proposed Action would include the following elements (Figures 3-7):

1) Rehabilitate and resurface the airport surfaces.
2) Repair runway embankments.
3) Construct a new airport access road, including a new bridge over Smith Creek.
4) Apply dust palliative to airport ground traffic surfaces.
5) Replace the airport lighting system.
6) Improve or re-establish sufficient airport drainage.
7) Construct a snow fence.
8) Utilize existing gravel bar(s) within the Inmachuk River floodplain for a material source and mobilize these materials and other equipment to the airport construction area using the combined existing community barge landing and developed roads.

Independent, preliminary research and reviews of project area resources have been conducted and are summarized in the attached Appendix A.

We respectfully request your written comments no later than July 3, 2020. Please mail them to: DOT&PF Attn: Jonathan Hutchinson, P.E., 2301 Peger Road Fairbanks, AK, 99709; or you may e-mail comments to: jonathan.hutchinson@alaska.gov.

Thank you for your attention to this request, if you have any questions regarding the proposed project, you may contact me at (907) 451-5479.

Sincerely,

Jonathan Hutchinson, P.E.
Engineering Manager

Enclosures: Figure 1 – Location & Vicinity Map
Figure 2 – Historic Flooding (Spring 2016)
Figure 3 – Proposed Action Site Plan
Figure 4 – New Airport Access Road and Bridge
Figure 5 – Proposed Snow Fence
Figure 6 – Potential Material Sites
Figure 7 – General Land Status
Appendix A – Project Study Area Preliminary Environmental Resource Review
Mailing List

cc: see attached Mailing List

Project Origin: City of Deering
Cape Nome Recording District,
Township 08N, Range 20W, Section: 25
Township 08N, Range 19W, Section: 19 & 30
Kateel River Meridian
USGS: KOTZEBUE (A-2) ALASKA
Deering Airport
Latitude: 66.0691 N

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Location & Vicinity Map

DATE: June, 2020

FIGURE **1**

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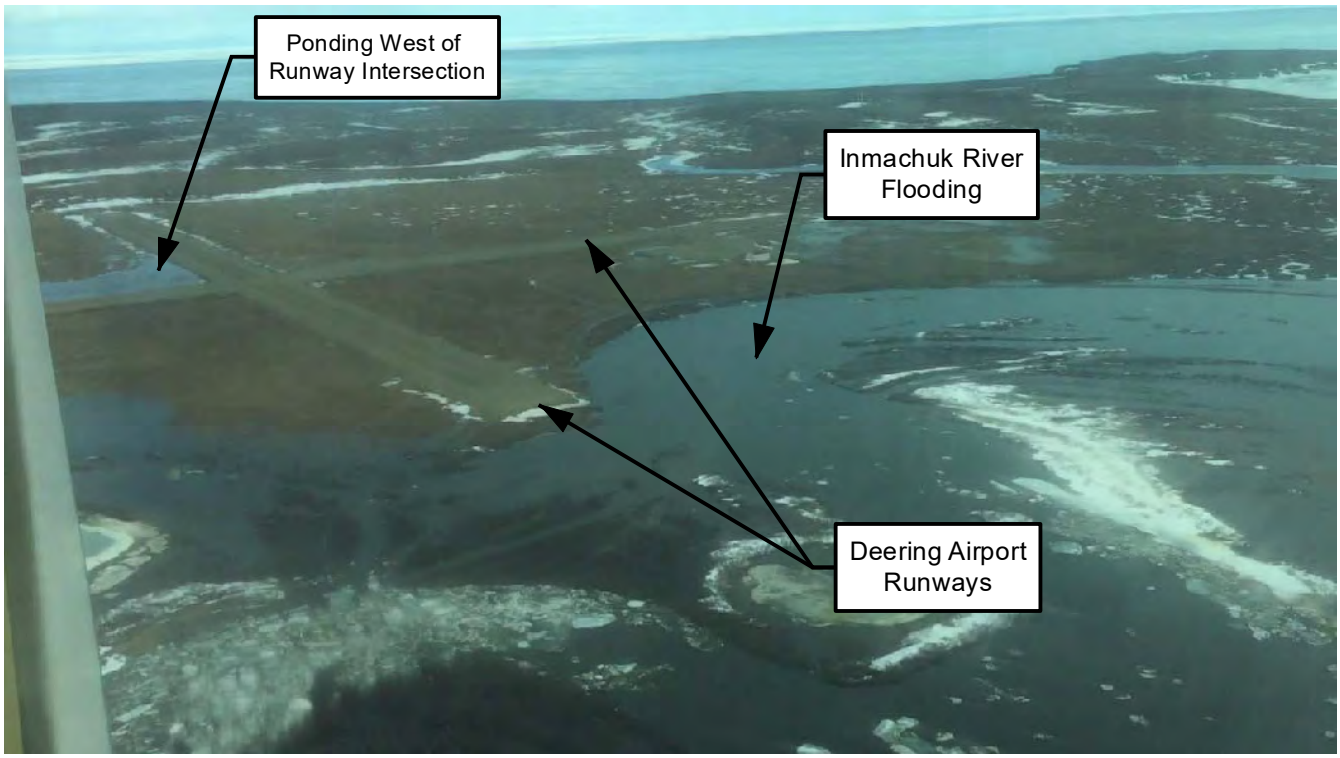
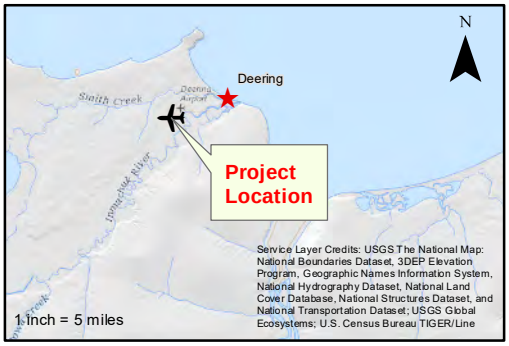


Deering Airport, Spring 2016

Source: RFP 25-17-1-070 Attachment 1



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Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

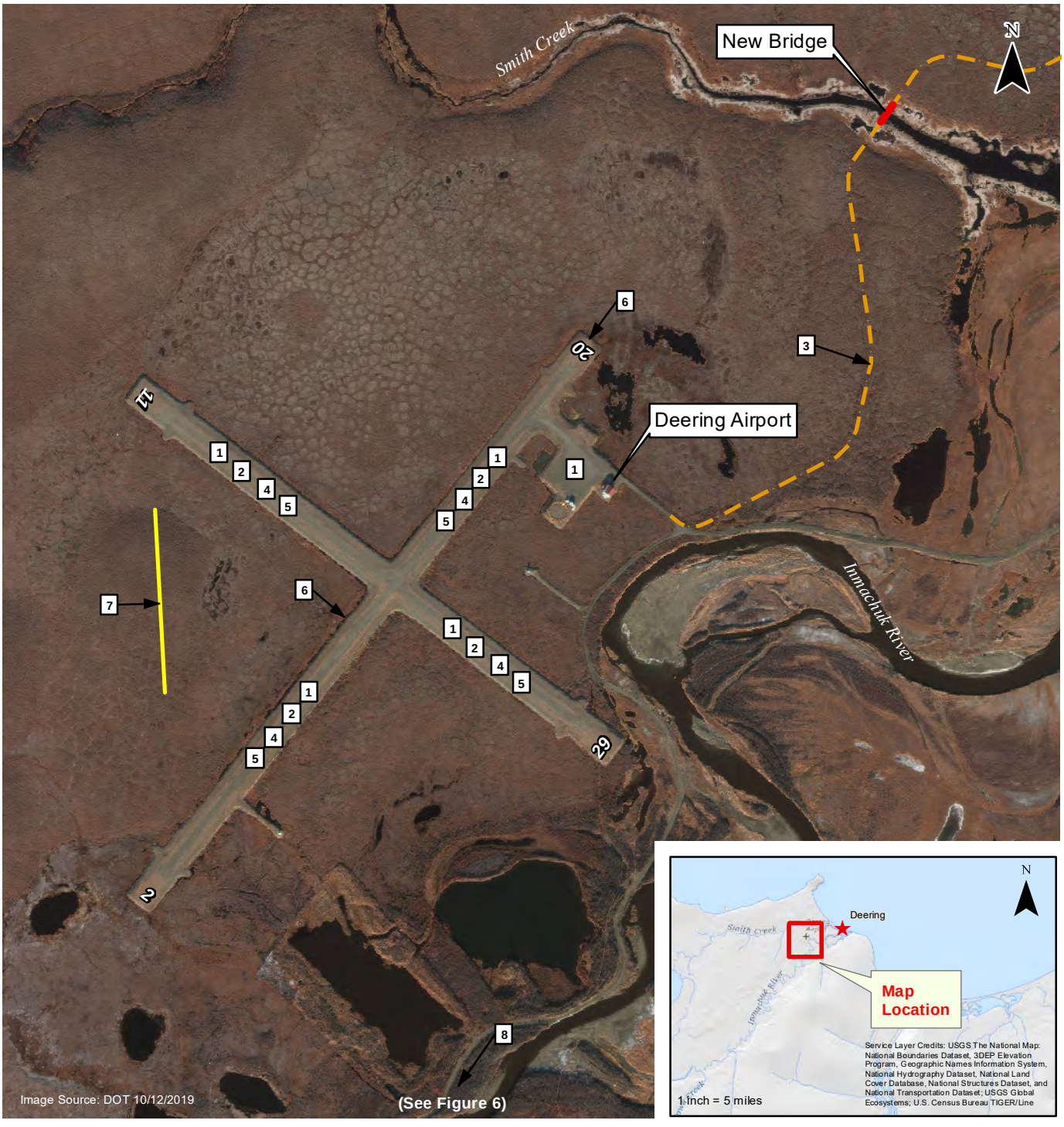
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Historic Flooding (Spring 2016)

DATE: June, 2020

FIGURE **2**

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig02_Flood.mxd



0 500 1,000 1,500 Feet

1 inch = 800 feet

Proposed Action Items:

1. Rehabilitate and Resurface Airport Surfaces
2. Repair Runway Embankments
3. Construct a New Airport Access Road and New Bridge (See Figure 4)
4. Apply Dust Palliative to Airport Ground Traffic Surfaces
5. Replace Airport Lighting System
6. Improve or Re-Establish Airport Drainage
7. Construct New Snow Fence (See Figure 5)
8. Utilize Existing Gravel Bar(s) for Material Source (See Figure 6). Haul Material to Airport using Existing Barge Landing and eveloped Roads.

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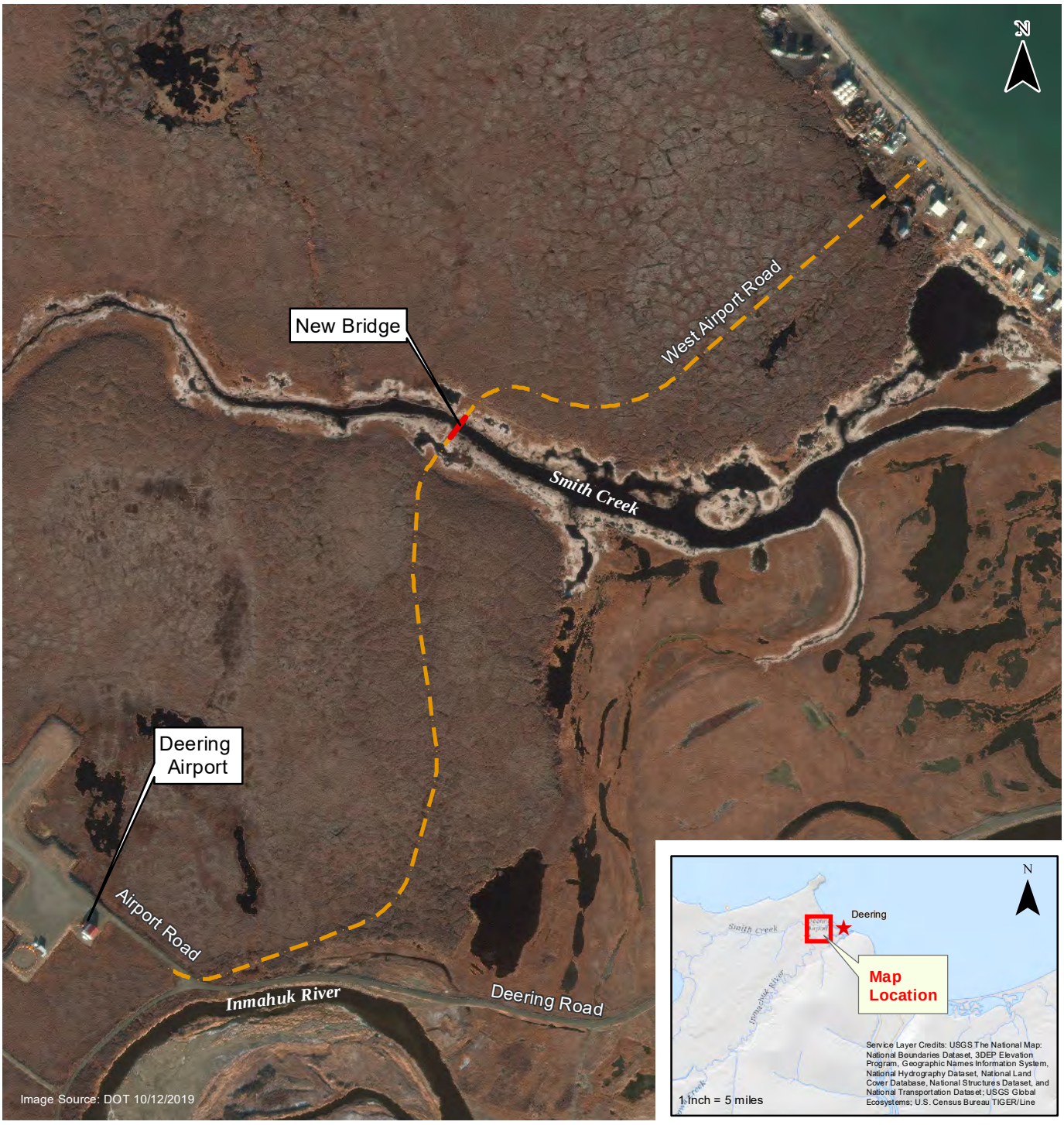
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Proposed Action Site Plan

DATE: June, 2020

FIGURE 3

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig03_Site_Plan.mxd



0 500 1,000 1,500 Feet

1 inch = 600 feet

New Airport Access Road (West Airport Road) and Bridge
Permitted under POA-2014-00121-M2 and evaluated under the 2017 Bureau of Indian Affairs approved "West Airport Road Project Environmental Assessment"

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Department of Transportation and Public Facilities
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DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

New Airport Access Road and Bridge

DATE: June, 2020

FIGURE 4

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0 500 1,000 1,500 Feet

1 inch = 833.33 feet

Proposed snow fence to protect the entire airport.

Snow Fence

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Department of Transportation and Public Facilities
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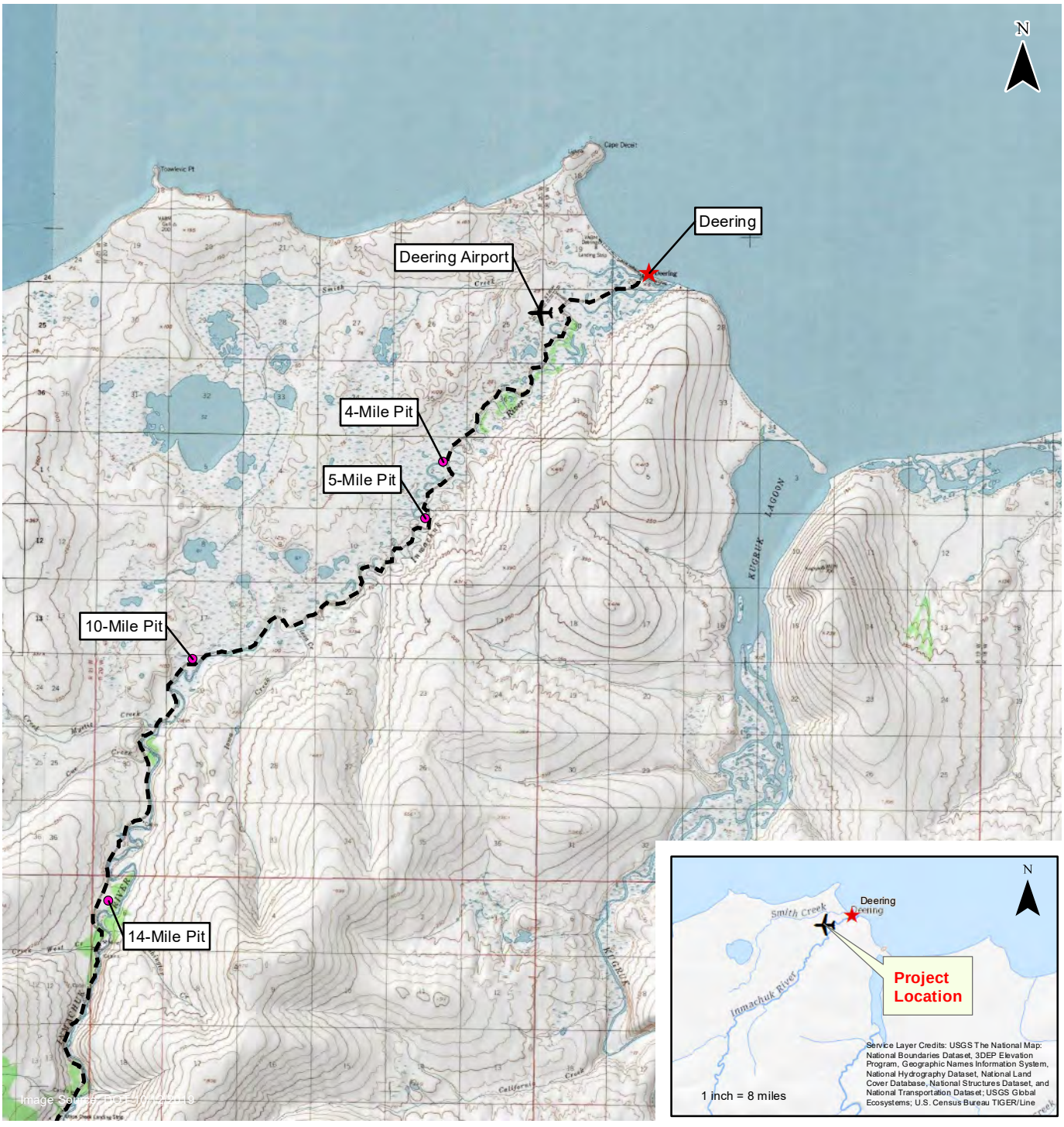
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Proposed Snow Fence

DATE: June, 2020

FIGURE **5**

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig05_Snow_Fence.mxd



0 1 2 3 4 Miles

1 inch = 2 miles

Potential Material Site Location

Deering Road (Existing)

Potential Material Sites:

1) 4 Mile Pit (Mile 4.4)
2) 5 Mile Pit (Mile 5.5)
3) 10 Mile Pit (Mile 10.X)
4) 14 Mile Pit (Mile 14.3)

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DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Potential Material Sites

DATE: June, 2020

FIGURE **6**

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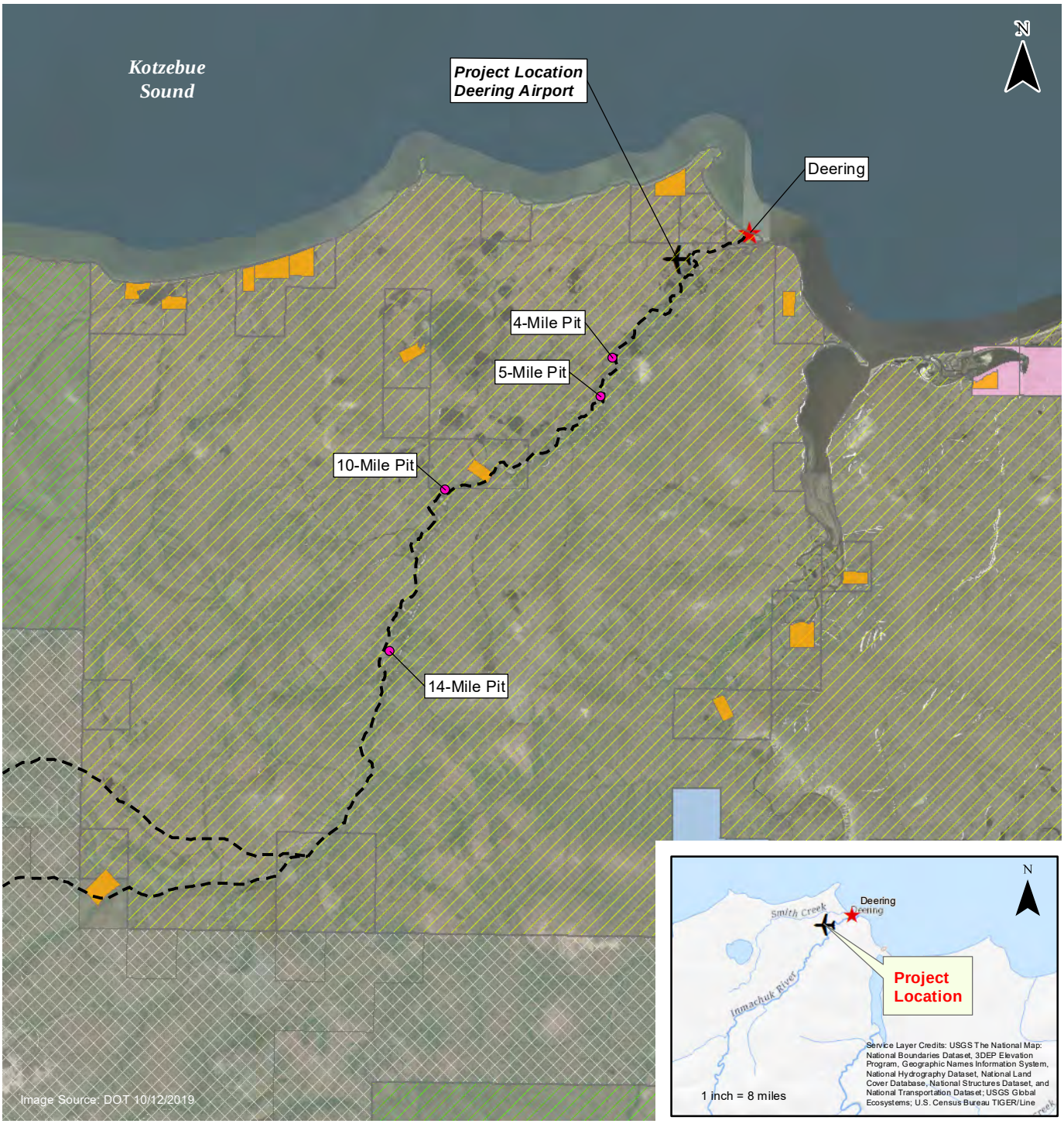

0 1 2 3 4 Miles

1 inch = 3 miles

- Potential Material Site Location
- Existing Roads
- Native Allotment

General Land Status

- BLM
- National Park Service
- Native
- State
- State and Native

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Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

General Land Status

DATE: June, 2020

FIGURE 7

Document Path: U:\2047062400\gis\mxd\agency_scoping_figures\2047062400_SC_Fig07_Land_Own.mxd

Appendix A
Project Study Area Preliminary Environmental Resource Review
Deering Airport and Access Road Improvements

Air Quality

A review of the Alaska Department of Environmental Conservation (ADEC), Division of Air Quality *Air Non-Point and Mobile Sources* website (ADEC, 2020a) indicated the proposed project is not in an air quality maintenance or non-attainment area for National Ambient Air Quality Standards. However, Deering is a community with reported dust problems according to a *2016 Rural Dust Survey* (ADEC, 2020b). To negate dust during construction and to comply with the Alaska Pollutant Discharge Elimination System Construction General Permit, Best Management Practices (BMPs) such as watering or application of a dust palliative would be used.

Biological Resources (Fish, Wildlife, & Plants)

Fish

A review of the Alaska Department of Fish and Game (ADF&G) *Alaska Fish Resource Monitor* (ADF&G, 2020) and the National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH) mapper (NOAA, 2020) found the following information. The Inmachuk River (Anadromous Waters Catalog Code: 331-00-10750), an anadromous fish stream, is located approximately 298 feet away from the nearest airport runway threshold. Chum and Pink Salmon are known to spawn and Dolly Varden are known to be present in the Inmachuk River. The Inmachuk River is considered EFH under the Magnuson-Stevens Fishery Conservation and Management Act. Smith Creek is located approximately 1,377 feet away from the nearest airport runway threshold. No known anadromous or resident fish are recorded in Smith Creek. No EFH, habitat areas of particular concern, or EFH areas protected from fishing are within the runway area.

Expansion of existing material sites south of the project area are being evaluated because existing material sites near the project area are exhausted or closed. Four potential existing material sites are under evaluation and include some gravel bars within the Inmachuk River floodplain, considered EFH habitat. Potential material sites include 4-mile pit (MS 206-02-07), 5-mile pit, 10-mile pit, and 14-mile pit (Gravel Site 2) (Figure 6; Shannon & Wilson, 2018). If an Inmachuk River bar is selected as the preferred material site an EFH assessment would be completed, National Marine Fisheries Service consulted, and an ADF&G Fish Habitat Permit application would be completed. The Inmachuk River may be also be used for water withdrawal needed for project construction. An ADF&G-approved fish screen fitted to the water withdrawal hose would be used to avoid fish entrapment.

Wildlife

The United States Fish and Wildlife Service (USFWS) *Information for Planning and Consultation* (IPaC; USFWS, 2020a) lists one threatened marine mammal (polar bear [*Ursus maritimus*]) and two threatened birds (Spectacled Eider [*Somateria fischeri*] and Steller's Eider [*Polysticta stelleri]*) within the project area. The polar bear may be present, although no critical habitats are listed within the proposed project area. The proposed project is within the migratory ranges for Spectacled Eider and Steller's Eider; however, it does not overlap with designated critical habitat for either eider species. Section 7 consultation with the USFWS would be completed during development of the environmental document. There are no migratory birds of conservation concern expected to occur within the project area. Migratory bird species may travel through the proposed project area and be disturbed by clearing operations. Vegetation clearing for the project would follow the USFWS recommended time-period to avoid vegetation clearing (May 1-July15) for the region (USFWS, 2020b). Favored eagle nesting habitat does not exist in the immediate project vicinity as no trees are present. No known eagle nests are located

within the project area. If Bald Eagle nests are sighted within the project area during or prior to construction, DOT&PF would seek guidance from the USFWS on how to proceed.

Plants

The Alaska Exotic Plants Information Clearinghouse (AKEPIC, 2020) was reviewed and the database mapper indicated that no data is available for the proposed project area. DOT&PF would comply with Executive Order 13112 (Invasive Species) for vegetation loss by; 1) ensuring that ground disturbing activities are minimized, and disturbed areas are re-vegetated with seed recommended for the region by Alaska Department of Natural Resources (ADNR)'s *A Revegetation Manual for Alaska*; 2) construction equipment would be inspected and cleaned prior to entering and exiting the construction site to minimize spread of vegetative materials; and 3) erosion and sediment control materials would be locally produced products to minimize potential importation of new propagules from outside Alaska.

Climate

FAA Order 1050.1F, Change 1, Guidance Memo #3, *Considering Greenhouse Gases (GHGs) and Climate under the NEPA: Interim Guidance*, includes guidance for evaluating greenhouse gas emissions with proposed projects under the National Environmental Policy Act (NEPA). The guidance states GHG emissions resulting from a proposed action should be evaluated qualitatively or quantitatively. There is no GHG emission data available for Deering. The proposed project would not permanently increase aviation traffic; therefore, no net change in GHGs are anticipated and according to the guidance no further consideration of GHGs would be necessary.

Coastal Resources

The Alaska Coastal Management Program expired on June 11, 2011 and is no longer in effect. Although a state coastal consistency determination is no longer required, the *Northwest Arctic Borough (NAB) Comprehensive Plan* (NAB, 1993) and the *Northwest Area Plan for State Lands* (DNR, 2008) were evaluated to avoid adverse coastal impacts occur within the study area and to ensure the project is consistent with coastal resource management referenced in these plans.

Department of Transportation Act, Section 4(f)

The National Parks Service (2020a) and U.S. Forest Service (2020) websites were reviewed for publicly owned lands including public parks, recreation area, wildlife or waterfowl refuges of national, state, or local significance, or land from a historic site of national, state, or local significance within the project area. The project area is located approximately 42 miles east of the Bering Land Bridge National Preserve. No Section 4(f) resources are known within the project area or potential material site locations.

Farmlands

According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (USDA, 2020), there are no designated soils of local importance, nor prime or unique farmland within the project area.

Hazardous Materials, Solid Waste, and Pollution Prevention

A search of ADEC's Contaminated Sites Program database did not identify any contaminated sites within the project area. One cleanup complete site (Hazard ID 1141-Deering Old Bulk Fuel Tank Farm) is located approximately one mile east of the project area near the community of Deering, and one active site (Hazard ID 4141-Former Utica Mine) is located approximately 13 miles south of the project area

(ADEC, 2020c). The active site (Former Utica Mine) is an abandoned gold mine contaminated with DRO, RRO benzene, arsenic, cadmium, barium, total chromium, mercury, silver, selenium, and lead (ADEC, 2020c). The former mine is located adjacent to the Inmachuk River, used for subsistence fishing by Deering residents. The ADEC contaminated site report for the former Utica Mine (Hazard ID 4141) states that high levels of heavy metals could potentially be migrating towards the Inmachuk River. Coordination with the ADEC would be completed to determine if contamination was identified migrating to the Inmachuk River since the Inmachuk River is close to the project area and could be used as a material site and water withdrawal.

Historical, Architectural, Archaeological and Cultural Resources

The present location of the Deering Airport was surveyed for archaeological resources by Wayne Wiersum (Wiersum, 1986). While Wiersum's 1986 field investigation report is not available at the Alaska Office of History and Archaeology (OHA) it is assumed the investigation was negative because there are no Alaska Heritage Resources Survey resources illustrated at the runway location. There are no reports of any cultural resource investigations at the Deering Airport following the 1986 investigation.

At least three cultural resource investigations have been conducted along access roads near the Deering Airport. 1) In 2001, Bureau of Indian Affairs (BIA) completed an archaeological survey for road improvements between Deering and Utica (Allison 2001). While no cultural resources were identified, the report does not illustrate the location of the survey corridor in relation to the existing road. 2) In 2007, NLUR conducted an archaeological survey of proposed road construction alignments and material sources to support road improvements in the vicinity of Deering (Bowers 2007). This report is not available at the OHA and was not reviewed as part of this data gap analysis. 3) In 2013, True North Sustainable Development Solutions (TNSDS) conducted a cultural resource investigation for recently constructed West Airport Road (TNSDS, 2013). Although the West Airport Road reportedly crosses the historic Inmachuk-Deering Trail (KTZ-0034), no artifacts or features were identified in association with the trail (TNSDS, 2013).

Material Sources

In 2018, Shannon & Wilson Geotechnical and Environmental Consultants (Shannon & Wilson) reviewed all reported geotechnical data from active material sources in the Deering area and determined that the characteristics of sediments at existing alluvial gravel sources along the Inmachuk River and bedrock sources could produce material of suitable quality to support the proposed project. However, quantity estimates of remaining material at specific material sources and material laboratory testing results are not available from all the existing material sources; therefore, potential material sites are currently under evaluation (Shannon and Wilson, 2018).

Potential new, or expansion of existing, material sites are being evaluated because existing material sites near the project area are exhausted or closed. When the material site(s) and haul route(s) are determined these locations would be evaluated for historical, architectural, archaeological and cultural resources. Field notes, maps, and trip reports may be located in BIA records from the 2001 field survey. Coordination with BIA would be completed to obtain copies of these records. Additionally, permission from the Traditional Village of Deering would be requested for NLUR to release the 2007 report for use on this project.

Land Use
The *Deering Community Comprehensive Development Plan 2006-2016* (NAB, 2006) and the *Long-Range Transportation Plan, Deering, Alaska.* (Deering IRA Council, 2011) were evaluated to avoid conflict with community land use or transportation plans. The *NAB Comprehensive Plan* (NAB, 1993), the *Northwest Alaska Transportation Plan* (DOT&PF, 2004), and the *Northwest Area Plan for State Lands* (DNR, 2008) were also evaluated to avoid conflict with area-wide land use and transportation plans. Dust control for local roads, airport apron, and runway was identified as the sixth (and final) item on the tribal priority list for transportation improvements (Deering IRA Council, 2011). The *Long-Range Transportation Plan* (Deering IRA Council, 2011) identified an ever-increasing need for local transportation improvements including accessing quality borrow material for improvements, such as resurfacing the airport runway. Coordination with local village officials would be completed to avoid conflict with local community land use plans.

The *NAB Zoning Districts* map shows the project area within a village district and the Inmachuk River subsistence subdistrict (NAB, 2020). Additionally, late summer subsistence blueberry picking was identified in the areas south of Deering along the hillside and around the airport runway (Deering IRA Council, 2011). Coordination with local village officials and community members to discuss subsistence blueberry picking areas surrounding the airport would be completed to avoid conflict with subsistence use. Additionally, potential material sites would be evaluated to avoid conflict with subsistence use.

There are a few 17(b) easements near Deering and south of the airport; however, there are no 17(b) easements which are near the airport (BLM, 2020). Coordination with landowners and the Bureau of Land Management along potential haul routes and/or material site(s) (once determined) would be completed to avoid conflict with land use plans and avoid no adverse impacts to the 17(b) easements, respectively.

Natural Resources and Energy Supply
A former gold mine (Utica Mine) is located 13 miles south of the project area, which is an active contaminated site (discussed previously under the *Hazardous Materials, Solid Waste, and Pollution Prevention* section). Potential new, or expansion of existing, material sites are being evaluated because existing material sites near the project area are exhausted or closed. Fuel consumption, above Deering's average fuel use, would increase during construction. When the material site(s) and haul route(s) are determined these locations would be evaluated for fuel demands to access the site(s) to determine if additional fuel should be barged in and stockpiled.

Noise and Noise-Compatible Land Use
Per the *1050.1F Desk Reference* (FAA, 2020), a noise analysis is required if annual operations exceed 90,000 propeller operations or 700 jet operations. The proposed project would not increase operations to exceed those figures; therefore, a noise analysis would not be required.

Visual Effects
Light Emissions
If the runway is raised it would need to be relighted, but it would include similar, and possibly more efficient, lighting as what is currently installed at the airport.

Water Resources

Wetlands

Deering is located within the Kotzebue Sound Subregion, which is classified by moist tundra (a mixture of grasses, sedges, forbs, and lichens) (Bristol, 2017) and the undeveloped project area is likely to contain some wetlands. A Wetland Delineation Report was completed for the West Airport Road Project in July 2014 which covers the area of the road between Deering and the airport. However, there is no recent wetland mapping completed for the project area and the material site(s) and haul route(s) are currently unknown. Wetland mapping would be completed for the project area, including proposed material site(s) and haul route(s) when determined. If wetland impacts are anticipated a USACE Individual Permit or Nationwide Permit application would be submitted and approved by the USACE prior to construction.

Floodplains

The Federal Emergency Management Agency has not published flood maps for the Deering area, and Deering does not participate in the National Flood Insurance Program. The *Erosion Information Paper – Deering, Alaska* (USACE, 2007) states that one erosion area occurs along the road that passes by the airport, and another is located along the road beyond the airport but does not specify the exact locations. The erosion information paper also reports winter flooding behind the city. Upon selection of the proposed material site(s) and haul route(s) floodplain location(s) would need to be evaluated to determine the appropriate course of action, if necessary. If a proposed Inmachuk River bar material site is located near the road erosion area, a field evaluation of existing erosion and how to avoid unnecessary further road erosion would need to be completed.

Surface Waters

The Inmachuk River is located approximately 298 feet away from the nearest airport runway threshold. Smith Creek is located approximately 1,377 feet away from the nearest airport runway threshold. Neither the Inmachuk River nor Smith Creek is listed as an impaired waterbody on the ADEC 303(d) List of Impaired Waterbodies (ADEC, 2020d). Additionally, there are no known water quality impairments to the surface waters surrounding the Deering Airport. If the airport runway is raised as part of the proposed project, culvert(s) may be installed under the runway or ditching surrounding the runway to maintain cross drainage and hydrologic function. The Inmachuk River may be used for water withdrawal needed for project construction. An ADNR Temporary Use of Water permit would be required for water withdrawal.

Wild and Scenic Rivers

There are no designated wild or scenic rivers in the vicinity of the proposed project (National Park Service, 2020b).

References

Alaska Exotic Plant Information Clearinghouse. 2020. University of Alaska, Anchorage. Alaska Center for Conservation Science. *Alaska Exotic Plant Information Clearinghouse Data Portal*. Accessed May 2020 at http://aknhp.uaa.alaska.edu/apps/akepic/.

Alaska Department of Environmental Conservation. 2020a. Division of Air Quality. Air Non-Point and Mobile Sources. *Air Pollution in Alaskan Communities*. Accessed May 2020 at http://dec.alaska.gov/air/anpms/communities.

Alaska Department of Environmental Conservation. 2020b. Division of Air Quality. Air Non-Point and Mobile Sources. *Dust - Rural Communities*. Accessed May 2020 at http://dec.alaska.gov/air/anpms/communities/pm10-rural.

Alaska Department of Environmental Conservation. 2020c. Division of Spill Prevention and Response, Contaminated Sites Program. Map of Contaminated Sites. Accessed May 2020 at http://dec.alaska.gov/spar/csp/index.htm.

Alaska Department of Environmental Conservation. 2020d. Division of Water. *Alaska's Impaired Waters and Total Maximum Daily Load*. Accessed May 2020 at https://dec.alaska.gov/water/water-quality/impaired-waters/ .

Alaska Department of Fish and Game. 2020. Division of Habitat. Anadromous Waters Catalog. *Alaska Fish Resource Monitor*. Accessed May 2020 at https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=maps.interactive.

Allison, J. 2001. *Draft Report of Cultural Resource Investigations. The Deering Road Project No. 466, Deering, Alaska*.

Bureau of Land Management, U.S. Department of the Interior. 2020. *Spatial Data Management System*. Sec. 17(b) Easements Online. Accessed May 2020 at https://sdms.ak.blm.gov/perl-bin/scanned_images/easement/get_esmt.pl.

Bowers, P. M. 2007. *Cultural Resource Survey of Proposed Material Source and Monitoring of Road Improvements in the Vicinity of Deering, Alaska*.

Bristol Engineering Services Corporation. 2017. *Environmental Assessment. West Airport Road Project. Deering, Alaska.* Prepared for: Bureau of Indian Affairs, Alaska Region Office.

Deering IRA Council. 2011. *Long Range Transportation Plan. Deering, Alaska.* Submitted to BIA, Branch of Transportation.

Department of Natural Resources. 2008. *Northwest Area Plan for State Lands*. Adopted October 2008, Alaska Department of Natural Resources, Division of Mining, Land and Water, Resource Assessment, and Development Section. Accessed May 2020 at http://dnr.alaska.gov/mlw/planning/areaplans/northwest/.

Department of Transportation and Public Facilities. 2004. *Northwest Alaska Transportation Plan. Community Transportation Analysis. An Element of the Alaska Statewide Transportation Plan*. State of Alaska, Department of Transportation and Public Facilities. February 11, 2004.

Federal Aviation Administration. 2020. *1050.1F Desk Reference*. Office of Environment and Energy. Version 2. February 2020. 294 pgs.

National Oceanic and Atmospheric Administration. 2020. National Marine Fisheries Service. Habitat Conservation, Habitat Protection. *Essential Fish Habitat Mapper v3.0*. Accessed May 2020 at http://www.habitat.noaa.gov/protection/efh/habitatmapper.html.

National Park Service. 2020a. *Find a Park*. Alaska. Accessed May 2020 at https://www.nps.gov/state/ak/index.htm.

National Park Service. 2020b. National Wild and Scenic Rivers System. Accessed May 2020 at https://www.rivers.gov.

Northwest Arctic Borough. 2020. Planning Department. *Northwest Arctic Borough Zoning Districts*. Accessed May 2020 at https://www.nwabor.org/wp-content/uploads/NWAB_0001_20180627_no_sections.pdf.

Northwest Arctic Borough. 2006. Planning Department. *Deering Community Comprehensive Development Plan 2006-2016.* Prepared for: Deering Residents, Organizations and Community, Native Village of Deering, and the City of Deering.

Northwest Arctic Borough. 1993. *Northwest Arctic Borough. Comprehensive Plan*. Prepared by Jon Isaacs and Associates. March 1993. Accessed May 2020 at https://www.nwabor.org/wp-content/uploads/NWABCompPlan1993.pdf.

True North Sustainable Development Solutions. 2013. *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska.*

United States Army Corps of Engineers, Alaska District. 2007. *Alaska Baseline Erosion Assessment. Erosion Information Paper – Deering, Alaska.* Current as of November 15, 2007. Accessed May 2020 at http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Deering_Final%20Report.pdf.

United States Department of Agriculture. 2020. Natural Resources Conservation Service. *Prime Farmland*. Accessed May 2020 at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/nri/results/?cid=nrcs143_014052.

United States Fish and Wildlife Service. 2020a. *Information for Planning and Consultation*. Accessed May 2020 at https://ecos.fws.gov/ipac.

United States Fish and Wildlife Service. 2020b. *Timing Recommendations for Land Disturbance & Vegetation Clearing*. Accessed May 2020 at https://www.fws.gov/alaska/sites/default/files/2019-05/Timing_Recommendations_Land_Disturbance_Vegetation_Clearing.pdf.

United States Forest Service. 2020. Alaska Region. *Land and Resource Management*. Accessed May 2020 at https://www.fs.usda.gov/main/r10/landmanagement.

Shannon & Wilson, Inc. 2018. *Deering Airport Proposed Improvements, Data-Gap Analysis*. June 20, 2018 to Stantec Consulting Services, Inc.

Wiersum, W. 1986. *An Archaeological Appraisal of the Proposed Airport Projects at Selawick [sic], Ambler, Deering, and Noatak, Alaska*.

Deering Airport and Access Road Improvements
Project Numbers (State/Federal): NFAPT00249 / AIP TBA
Agency Scoping Mailing List

Name	Title	Agency	Department	Email	Phone
State of Alaska					
Cindy Heil	Program Manager	ADEC	Division of Air Quality, Air Non-Point & Mobile Sources Program	cindy.heil@alaska.gov	907-269-7508
Jim Rypkema	Program Manager	ADEC	Division of Water, Wastewater Discharge Authorization Program	Jim.Rypkema@alaska.gov	907-334-2288
Chelsy Passmore	Program Specalist	ADEC	Division of Spill Prevention and Response, Contaminated Sites Program	chelsy.passmore@alaska.gov	907-269-7522
Maria Wessel	Habitat Biologist	ADF&G	Habitat Section	maria.wessel@alaska.gov	907-459-7281
Tom Barrett	Chief of the Water Resources Section	ADNR	Division of Mining, Land & Water	tom.barrett@alaska.gov	907-269-8645
Judy Bittner	State Historic Preservation Officer	ADNR	Office of History & Archaeology	judy.bittner@alaska.gov	907-269-8715
Federal					
Keith Kahklen	Natural Resources Manager	BIA	Natural Resources	keith.kahklen@bia.gov	907-586-7618
Colleen LaBelle	Deputy Regional Director of Trust Services	BIA	Environmental	colleen.labelle@bia.gov	907-271-1734
Harrilene Yazzie	Supervisor Environmental Protection Specialist	BIA	Environmental	Harrilene.Yazzie@bia.gov	505-863-8287
Sean Mack	Regional Archeologist	BIA	Archeology	Sean.Mack@bia.gov	907-271-4085
Kathy Van Massenhove	Realty Specialist	BLM	ANCSA 17(b) Easements	kvanmassenhove@blm.gov	907-271-4216
Rebecca Chu	NEPA Program Acting Manager	EPA	Region 10	chu.rebecca@epa.gov	206-553-1774
Gretchen Harrington	Assistant Regional Administrator	NOAA	National Marine Fisheries Service, Habitat Conservation Division	gretchen.harrington@noaa.gov	907-586-7824
Matt Eagleton	Deputy Director & Regional Essential Fish Habitat Coordinator	NOAA	National Marine Fisheries Service, Habitat Conservation Division	matthew.eagleton@noaa.gov	907-271-6354
Jon Kurland	Assistant Regional Administrator	NOAA	National Marine Fisheries Service, Protected Resources Division	jon.kurland@noaa.gov	907-586-7638
Greg Balough	Anchorage Office Supervisory Biologist	NOAA	National Marine Fisheries Service, Protected Resources Division	greg.balogh@noaa.gov	907-271-3023
Ryan Winn	North Section Chief	USACE	Alaska District, Regulatory	ryan.h.winn@usace.army.mil	907-753-2777
----------	Alaska District Office	USACE	Alaska District, Regulatory	regpagemaster@usace.army.mil	907-753-2712
Clinton Scott	Commander	USCG	Seventeenth Coast Guard District	Clinton.L.Scott@uscg.mil	907-463-2276
Patrick Lemons	Marine Mammals Management Chief	USFWS	Marine Mammal Management	patrick_lemons@fws.gov	907-786-3668
Bob Henszey	Branch Chief	USFWS	Planning and Consultation	bob_henszey@fws.gov	907-456-0323
Ted Swem	Branch Chief	USFWS	Section 7	ted_swem@fws.gov	907-456-0441
Eric Taylor	Division Chief	USFWS	Migratory Birds	Eric_Taylor@fws.gov	907-786-3446
Sue Detwiler	Assistant Regional Director	USFWS	Office of Subsistence Management	sue_detwiler@fws.gov	907-786-3888
Zach Stevenson	Council Coordinator	USFWS	Northwest Arctic Subsistence Regional Advisory Council	zachary_stevenson@fws.gov	907-786-3674
Local/Native					
Ronald Moto Sr.	Mayor	City of Deering	City Council	cityofdeering@yahoo.com	907-363-2136
Kevin Moto	President	Native Village of Deering	Tribe	tribeadmin@ipnatchiaq.org	907-363-2138
Liz Qaulluq Cravalho	Vice President of Lands	NANA	Lands	lands@nana.com	907-265-4100
Siikauraq Martha Whiting	Planning Director	NAB	Planning	mwhiting@nwabor.org	907-442-8209
Lucy Nelson	Mayor	NAB	Mayor's Office	lnelson@nwabor.org	907-442-8201
Kelli Shroyer	Public Communications Manager	Maniilaq Association	Pauline Allitchaq Barr Health Clinic	kelli.shroyer@maniilaq.org	907-442-7602

ADEC Air Quality Comments

Hillman, Kacy

From: Alimi, Adeyemi S (DEC) <adeyemi.alimi@alaska.gov>
Sent: Wednesday, June 3, 2020 4:20 PM
To: Hillman, Kacy
Cc: Heil, Cynthia L (DEC)
Subject: RE: Deering Airport & Access Road Improvements | Scoping

Dear Kacy Hillman,

The Alaska Department of Transportation and Public Facilities (DOT&PF) has requested Alaska Department of Environmental Conservation (ADEC) to comment on the proposed Deering Airport and Access Road Improvements project on the Seward Peninsula, Alaska.

Thank you for the opportunity to comment on the proposed project. 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, particular attention should be given during any construction activities to take reasonable precaution per 18 AAC 50.045(d) to prevent fugitive dust. Since Deering is a community with reported dust problems, ADEC supports the use of Best Management Practices by DOT&PF to mitigate dust issues during construction.

Also, If the preferred method for disposal of debris in the development of any raw land is by open burning, 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 general requirement of the Air Quality Control Regulations is that wastes should be burned in a manner that does not cause a public health, safety or welfare threat, an environmental problem or a nuisance. A complete description of the open burn information including policies can be found at: http://dec.alaska.gov/air/air-permit/open-burn-info/

Thank you for the opportunity to comment on the proposed projects.

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: Hillman, Kacy [mailto:kacy.hillman@stantec.com]
Sent: Wednesday, June 3, 2020 10:58 AM
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>; Garbowicz, Monique <Monique.Garbowicz@stantec.com>; Lindberg, Sara <sara.lindberg@stantec.com>; Kraemer, Russell P (DOT sponsored) <russell.kraemer@stantec.com>; Shanklin, Zane

<zane.shanklin@stantec.com>
Subject: Deering Airport & Access Road Improvements | Scoping

Hello,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes airport and access road improvements at Deering Airport, Deering, Alaska. The Deering Airport and Access Road Improvements Project is FAA funded through the Airport Improvement Program (AIP).

DOT&PF requests your review of the proposed project and scoping comments to support preparation of its environmental document in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Your responses will help provide the necessary input to develop and design a proposed final project that avoids or minimizes potentially adverse environmental and human impacts.

Please see the attached information for your review:

- Request for Scoping Comments Letter
- Figures 1-6
- Appendix A - Project Study Area Preliminary Environmental Resource Review
- Mailing List

Best,

Kacy Hillman, PWS
Environmental Scientist

Mobile: 907 306-7976
kacy.hillman@stantec.com

ADEC Contaminated Sites Comments

Hillman, Kacy

From: Passmore, Chelsy M (DEC) <chelsy.passmore@alaska.gov>
Sent: Friday, June 5, 2020 9:55 AM
To: Hillman, Kacy
Cc: Wiegers, Janice K (DEC); Hillman, Kacy
Subject: RE: Deering Airport & Access Road Improvements | Scoping

Hi Kacy,

After a brief review the ADEC has determined that the "Hazardous Materials, Solid Waste, and Pollution Prevention" section of the document is accurate with regards to the Contaminated Sites Program. It does not appear that contaminated sites in this area will impact this project. As always, there is a chance with any digging or excavating project that unknown contamination will be encountered. If contaminated media is encountered during the course of this project please contact the ADEC immediately.

Thanks,

Chelsy Passmore
Environmental Program Specialist
ADEC Contaminated Sites Program
Chelsy.Passmore@alaska.gov
(907) 269-7522

I am currently working from home. The best way to reach me is via e-mail.

From: O'Connell, Bill A (DEC)
Sent: Wednesday, June 3, 2020 11:36 AM
To: Passmore, Chelsy M (DEC) <chelsy.passmore@alaska.gov>
Cc: Wiegers, Janice K (DEC) <janice.wiegers@alaska.gov>; kacy.hillman@stantec.com
Subject: FW: Deering Airport & Access Road Improvements | Scoping

Hi Chelsy, would you mind reviewing this scoping notice and getting back to Kacy, with any concerns?

Thanks, Bill

Bill O'Connell
Environmental Program Manager
ADEC Contaminated Sites Program
(907) 269-3057

From: Hillman, Kacy [mailto:kacy.hillman@stantec.com]
Sent: Wednesday, June 3, 2020 11:23 AM
To: O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>
Subject: FW: Deering Airport & Access Road Improvements | Scoping

Hello Bill,

I sent the following email to John Halverson, but received an undeliverable reply and I see his position is now vacant. Would you please review the email below and attached and let me know who the appropriate person in your department is to distribute this to?

Best,
Kacy Hillman
Mobile: 907 306-7976

From: Hillman, Kacy <kacy.hillman@stantec.com>
Sent: Wednesday, June 3, 2020 11:58 AM
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; 'paul.karczmarczyk@alaska.gov' <paul.karczmarczyk@alaska.gov>; Garbowicz, Monique <Monique.Garbowicz@stantec.com>; Lindberg, Sara <sara.lindberg@stantec.com>; Kraemer, Russell <russell.kraemer@stantec.com>; Shanklin, Zane <zane.shanklin@stantec.com>
Subject: Deering Airport & Access Road Improvements | Scoping

Hello,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes airport and access road improvements at Deering Airport, Deering, Alaska. The Deering Airport and Access Road Improvements Project is FAA funded through the Airport Improvement Program (AIP).

DOT&PF requests your review of the proposed project and scoping comments to support preparation of its environmental document in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Your responses will help provide the necessary input to develop and design a proposed final project that avoids or minimizes potentially adverse environmental and human impacts.

Please see the attached information for your review:

- Request for Scoping Comments Letter
- Figures 1-6
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- Mailing List

Best,
Kacy Hillman, PWS
Environmental Scientist

Mobile: 907 306-7976
kacy.hillman@stantec.com

ADFG Habitat Comments

From: Wessel, Maria L (DFG)
To: Hillman, Kacy
Subject: RE: Deering Airport & Access Road Improvements | Scoping
Date: Thursday, July 2, 2020 3:17:37 PM

Hi Kacy,

Thanks for the opportunity to comment on this project. ADF&G Habitat Section has reviewed the project documents and has no objections to the work. Construction of the new bridge over Smith Creek and removal of gravel from within the Inmachuk River will both require fish habitat permits.

Feel free to contact me with any questions,
Maria

Maria Wessel

Habitat Biologist
ADF&G Habitat Section
Region 3 – Fairbanks
(907) 459-7281

From: Hillman, Kacy <kacy.hillman@stantec.com>
Sent: Friday, June 5, 2020 11:00 AM
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>; Garbowicz, Monique <Monique.Garbowicz@stantec.com>; Lindberg, Sara <sara.lindberg@stantec.com>; Kraemer, Russell P (DOT sponsored) <russell.kraemer@stantec.com>; Shanklin, Zane <zane.shanklin@stantec.com>
Subject: RE: Deering Airport & Access Road Improvements | Scoping

Hello,

Please see the updated attached Deering Airport and Access Road Improvements scoping information including a proposed snow fence to protect the Deering Airport runways from drifting snow for your review. Snow fence information is provided on **PDF pages 2, 6, and 8**.

The rest of the information provided on June 3, 2020 remains the same. Thank you for those of you who already provided comments, and if you don't have additional comments regarding the snow fence there is no need to re-send comments.

The date for comments has been extended to **July 3, 2020**. If you have any comments please provide them by that date. Thank you and I hope you have a wonderful weekend.

Best,
Kacy Hillman, PWS
Environmental Scientist

Mobile: 907 306-7976
kacy.hillman@stantec.com

From: Hillman, Kacy
Sent: Wednesday, June 3, 2020 11:58 AM
Cc: 'Hutchinson, Jonathan J (DOT)' <jonathan.hutchinson@alaska.gov>; 'paul.karczmarczyk@alaska.gov' <paul.karczmarczyk@alaska.gov>; Garbowicz, Monique <Monique.Garbowicz@stantec.com>; Lindberg, Sara <sara.lindberg@stantec.com>; Kraemer, Russell <russell.kraemer@stantec.com>; Shanklin, Zane <zane.shanklin@stantec.com>
Subject: Deering Airport & Access Road Improvements | Scoping

Hello,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes airport and access road improvements at Deering Airport, Deering, Alaska. The Deering Airport and Access Road Improvements Project is FAA funded through the Airport Improvement Program (AIP).

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Please see the attached information for your review:

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- Figures 1-6
- Appendix A - Project Study Area Preliminary Environmental Resource Review
- Mailing List

Best,

Kacy Hillman, PWS
Environmental Scientist

Mobile: 907 306-7976
kacy.hillman@stantec.com

BLM Lands Comments

Hillman, Kacy

From: Van Massenhove, Katherine B <kvanmassenhove@blm.gov>
Sent: Thursday, June 4, 2020 11:22 AM
To: Hillman, Kacy
Subject: Re: [EXTERNAL] Deering Airport & Access Road Improvements | Scoping

Hi Kacy,

I reviewed the scoping package, and have a couple comments/questions. Is the legal land description provided for Figure 1 accurate? Currently, it does not describe the lands for the airstrip. Range can be W or E, never N. Additionally, section 25 and 30 within the same township would not be adjacent sections. Our review of the project area was done with the assumption that the correct legal land description is as follows:

Kateel River Meridian
T. 8 N., R. 19 W., Sec. 30.
T. 8 N., R. 20 W., Sec. 25.

If that is not correct, please advise.

Additionally, while this project is not expected to overlap with the 17(b) easements in the area, should that change the BLM would expect the project have no adverse impacts on the easement. Currently how the sentence is written it indicates no adverse impacts will be avoided. This can be corrected by deleting the word no before adverse.

> There are a few 17(b) easements near Deering and south of the airport; however, there are no 17(b) easements which are near the airport (BLM, 2020). Coordination with landowners and the Bureau of Land Management along potential haul routes and/or material site(s) (once determined) would be completed to avoid conflict with land use plans and **avoid ~~no~~ adverse impacts** to the 17(b) easements, respectively.

The BLM has limited our review of the project to the impacts on 17(b) easements.

Kathy Van Massenhove
Lands and Realty Section Chief | Branch of Lands & Realty
Alaska State Office | Bureau of Land Management
Phone: (907) 271-4216 | kvanmassenhove@blm.gov

From: Hillman, Kacy <kacy.hillman@stantec.com>
Sent: Wednesday, June 3, 2020 10:58 AM
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; 'paul.karczmarczyk@alaska.gov' <paul.karczmarczyk@alaska.gov>; Garbowicz, Monique <Monique.Garbowicz@stantec.com>; Lindberg, Sara <sara.lindberg@stantec.com>; Kraemer, Russell <russell.kraemer@stantec.com>; Shanklin, Zane <zane.shanklin@stantec.com>
Subject: [EXTERNAL] Deering Airport & Access Road Improvements | Scoping

Hello,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes airport and access road improvements at Deering Airport, Deering, Alaska. The Deering Airport and Access Road Improvements Project is FAA funded through the Airport Improvement Program (AIP).

DOT&PF requests your review of the proposed project and scoping comments to support preparation of its environmental document in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Your responses will

help provide the necessary input to develop and design a proposed final project that avoids or minimizes potentially adverse environmental and human impacts.

Please see the attached information for your review:

- Request for Scoping Comments Letter
- Figures 1-6
- Appendix A - Project Study Area Preliminary Environmental Resource Review
- Mailing List

Best,

Kacy Hillman, PWS
Environmental Scientist

Mobile: 907 306-7976
kacy.hillman@stantec.com

Deering IRA Comments

Deering IRA Council
P.O. Box 36089
Deering, AK 99736
Phone (907) 363-2138 or 363-2214
Fax: (907) 363-2195
Serving the Native Village of Deering
transportation@ipnatchiaq.org

June 25, 2020

Johnathan Hutchinson, P.E.
2301 Peger Road
Fairbanks, Alaska 99709

RE: Deering Airport and Access Road Improvements
PROJECT Numbers (State/Federal): NFAPT00249 / AIP TBA

Dear Mr. Hutchinson,

My name is Bonita Barr and I work for the Native Village of Deering as the Transportation Coordinator.

I am writing to comment on the upcoming Project Numbers (State/Federal): NFAPT00249

Comments:

1. Rehabilitate and resurface the airport surfaces

Question: Will the airport be extended to accommodate larger airplanes?

2. Construct a new airport access road including bridge

Question: Will the new access road have the dust palliative added also?
Question: Can you provide an illustration of the bridge?
Question: Will the bridge have outlets to provide access to the tundra? (for subsistence activities as there is a tundra trail on Smith Creek)

3. Replace the airport lighting system

Question: Will the replacement of the lights include some form of protection from damages caused by muskoxen rubbing on them?

4. Improve or re-establish sufficient airport drainage?

Question: What are the proposed improvements and re-establishments?

Question: Will the operators be required to have Driver's Licenses?
Question: What are the permitting requirements and who is responsible for ensuring they are met?
Question: Are you aware that NANA has a Material Sales Agreement with the Native Village of Deering for gravel? And that only NANA Shareholders or their descendants or a spouse of a NANA Shareholder are allowed in the pits?
Question: Are you bringing equipment up to Deering for the project? If so what equipment is it?
Question: Will the Native Village of Deering have to opportunity to purchase equipment once the project is completed? (We are looking for a crusher if you're bringing 1 up)

5. Snow Fence

Question: What material will be used for the snow fence? And can more fencing be installed. Are there examples of where it has been installed and how efficient the fencing is? Has the changing weather been taken into consideration with the snow fence? Historically Deering has been known for prevailing west winds the past few years we have been more easterly and south winds.

6. Gravel Bars

   Question: Will you be identifying and including more gravel bars? The Native Village of Deering has been extracting gravel from your identified gravel bars for road maintenance and repairs, will the identified gravel bars be sufficient for the projects?

I appreciate the opportunity to comment on the upcoming projects and am excited that these projects will be constructed.

Please feel free to call or email should you have any comments, questions, or concerns.

I look forward to assisting you with your projects in any way that I can as the new access route to the airport is needed for the safety of our community.

Regards,

Bonita Barr – Transportation Coordinator

cc: file

Northwest Arctic Borough Comments

Northwest Arctic Borough

163 Lagoon Street
P.O. Box 1110
(907) 442-2500 Fax (907) 442-2930
www.nwabor.org

June 17, 2020

Jonathan Hutchinson, P.E.
Department of Transportation and Public Facilities
Northern Region
Design and Engineering Services
2301 Peger Road
Fairbanks, AK. 99709-5316

RE: Deering Airport and Access Road Improvements
Project Numbers (State/Federal): NFAPT00249 / AIP TBA
Subject: Request for Scoping Comments

Dear Mr. Hutchinson:

Thank you for this opportunity to address the Deering Airport and Access Road improvements. The Northwest Arctic Borough (NAB) fully supports this project. As you know, the only transportation in and out of Deering is by year-round air carrier service and in the wintertime by snow machine and in the summer by boat. Deering's airport is antiquated and ensuring access to a safe and functioning airport is critical for the health and well-being of Deering.

Deering has a history of erosion and flooding issues at times making it impossible to get to and from the airport. The Village Improvement Committee for Deering has listed Erosion Control as one of their priorities to keep their community safe and accessible. This project will alleviate those issues especially for residents requiring medical travel.

Your work does not go unnoticed in our region. Thank you DOT&PF, FAA and the Airport Improvement Program for working with the community of Deering to make airport and access road improvements a reality.

If you need more details, please contact my office.

Sincerely,

Lucy S. Nelson, Mayor

USFWS Comments

From:	Hutchinson, Jonathan J (DOT)
To:	Hillman, Kacy
Cc:	Garbowicz, Monique; Karczmarczyk, Paul F (DOT)
Subject:	FW: USFWS scoping comments re Deering Airport upgrades
Date:	Wednesday, July 1, 2020 5:29:45 PM
Attachments:	USFWS scoping comments 7-1-2020 Deering Airport_Signed.pdf

Good afternoon,

See attached comments from USWFS.
Louise used to work for DNR, as I recall, and back then she dialed in on reclamation of river material sources to support EFH.
Looks like that hasn't changed.

From: Smith, Louise <louise_smith@fws.gov>
Sent: Wednesday, July 1, 2020 4:19 PM
To: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Subject: FW: USFWS scoping comments re Deering Airport upgrades

Jonathan - I misspelled your name on the email to you (my apologies). Thanks for speaking with me earlier this week. Do not hesitate to contact me should you have questions regarding our scoping comments for the proposed upgrades to the Deering Airport.

Sincerely,

Louise

From: Smith, Louise
Sent: Wednesday, July 1, 2020 4:11 PM
To: Jonathan.Hutchison@alaska.gov; Kacy.Hillman@stantech.com
Cc: Henszey, Bob <Bob_Henszey@fws.gov>; Buncic, Charleen M <charleen_buncic@fws.gov>
Subject: USFWS scoping comments re Deering Airport upgrades

Jonathan –

Attached please find U. S. Fish and Wildlife Service scoping comments re the proposed Deering Airport upgrades. Please contact us should you have questions pertaining to our remarks.

Thank you for the opportunity to comment.

- Louise

Louise Smith
Fish and Wildlife Biologist
Conservation Planning Assistance Branch

Fairbanks Fish and Wildlife Field Office
U. S. Fish and Wildlife Service
101 12th Ave., Rm 110
Fairbanks, AK 99708

Louise_Smith@fws.gov
907-456-0306

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Conservation Office
101 12th Avenue, Room 110
Fairbanks, Alaska 99701
July 1, 2020

ADOT&PF
Attn: Jonathan Hutchinson, P.E.
2301 Peger Road
Fairbanks, AK 99709

RE: Deering Airport and Access Road Improvements
Project Numbers (State/Federal): NFAPT00249/AIP TBA

Dear Mr. Hutchinson,

The U.S. Fish and Wildlife Service (Service) provides the following scoping comments regarding the above referenced project for improvements to the Deering Airport and construction of a new access road in Deering, Alaska. The purpose of the project is to update the Deering Airport to current Federal Aviation Administration (FAA) design standards that meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP).

The proposed project plans include airport runway upgrades and resurfacing, repair of runway embankments, construction of a new airport access road and new bridge over Smith Creek, replacement of the airport lighting system, improvements to/reestablishment of airport drainage, and installation of a snow fence. Gravel material for the proposed construction may be sourced from the Inmachuk River floodplain. The existing community barge landing and access roads will be used to mobilize materials and equipment to the airport construction area. A dust palliative will be applied to airstrips and ground traffic surfaces post construction.

Recommendations: The Service previously provided a comment letter dated June 9, 2016, regarding a U. S. Army Corps of Engineers (USACE) Public Notice (PN) POA-2014-121 Smith Creek, for the proposed construction of an emergency access road, including a single-span 65 ft. (19.8 m) bridge across Smith Creek, between the village of Deering and the Deering Airport. The road route and bridge location in the 2014 PN are the same as proposed in the current Alaska Department of Transportation and Public Facilities (ADOT&PF) Deering Airport and Access Road Improvements project. The Service appreciates the opportunity to review and comment on the updated project. We offer the following recommendations to minimize the proposed project impacts on fish and wildlife and their habitats.

Threatened and Endangered Species: The purpose of the Endangered Species Act (ESA) is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend are conserved. ESA-listed species and/or designated critical habitat occur within the

project area, and the Service previously consulted on this project in letters dated April 15, 2014, and June 9, 2016. The current proposed project has expanded to include upgrades to the airstrips and runway embankments, potential use of existing gravel bar(s) within the Inmachuk River floodplain for a material source, a full replacement of the airport lighting system, and construction of the previously proposed access road. A list of potentially affected species can be found at: https://ecos.fws.gov/ipac/. We also recommend contacting the Fairbanks Fish and Wildlife Conservation Office, Consultation Branch at 907-456-0441, when the project plans are finalized to inquire if an update to the previous consultations is necessary.

Essential Fish Habitat: Potential material sources for the proposed project include gravel bars within the Inmachuk River floodplain. The Inmachuk River, located south of the NW/SE runway is an anadromous fish stream (Anadromous Waters Catalog Code: 331-00-10750). Chum and pink salmon spawn, and Dolly Varden are present, in the Inmachuk River. The Service recommends working with ADF&G to develop appropriate instream mining and timing to minimize impacts to these anadromous species.

Floodplain Connectivity: The Service appreciates designing bridges to pass the 100-year flood event and to account for fish passage using natural channel design practices. In addition to considering hydraulics and fish passage, we also recommend the Project include provisions for maintaining the floodplain integrity both up and downstream at all floodplain crossings, including culverts (USFWS 2020). Floodplains are an important component of the aquatic ecosystem with many benefits beyond enhancing fish habitat. When considering floodplain connectivity (USFS 2008, Figures 2.5 and 6.30), options for water crossings range from no connectivity (simple high discharge passage) to preserving full functioning of all floodplain processes (full-span crossing). Thus, we recommend constructing stream crossings that preserve floodplain connectivity to the greatest extent possible. We also recommend setting the invert for overflow culverts at the same grade level as the floodplain. These culverts would be in addition to the elevated culverts intended to account for aufeis overflow, which would not support floodplain connectivity because they are elevated.

Eagles and Their Nests: The Bald and Golden Eagle Protection Act protects eagles from take, including disturbance to their nests, roosts, and foraging sites. Eagles are uncommon/rare within the vicinity of Deering. In the unlikely event of eagles nesting within the project area, we recommend contacting our office for appropriate measures to avoid and minimize impacting eagles and their nests.

Migratory Birds: The Service appreciates employing voluntary measures to avoid disturbance to migratory-bird nesting habitat during the nesting season, when nests and nestlings are most vulnerable. The most effective best management practice to minimize impacts to nesting birds is to conduct land disturbing activities (e.g., clearing, excavation, gravel fill, brush hogging, etc.) before or after the breeding season, which is generally May 10 through July 20 in the proposed project area.[1] Additionally, we appreciate and support employing other conservation measures to minimize impacts to migratory birds. For some example conservation measures to avoid and

[1] https://www.fws.gov/alaska/pages/nesting-birds-timing-recommendations-avoid-land-disturbance-vegetation-clearing

minimize impacts to birds, please refer to our Migratory Bird Program website: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php.

Airport Lighting: The proposed project includes construction of new/updated airport lighting. The Service recommends reviewing and implementing, where applicable, the Federal Aviation Administration's Advisory Circular AC 70/7460-1L regarding new lighting standards to further reduce impacts on migratory birds. The document is available at: http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_.pdf.

Invasive species: The Service appreciates the proposed best management practices to minimize the introduction and spread of invasive species within and surrounding the project area. In particular, we commend: the purchase of erosion and sediment control materials from local sources; the use of seeds recommended for the region by the Alaska Department of Natural Resources (ADNR); and the inspection and cleaning of construction equipment prior to entering and exiting the construction site to minimize the spread of invasive vegetative materials. The Service also suggests implementing a long-term monitoring and response program to enable early detection and rapid response to accidental invasive introductions during construction.

Mine Site Reclamation: We recommend developing a reclamation plan for new mine site construction or for expanding existing mine sites. The Service would welcome the opportunity to review a draft of a mine site plan for habitat considerations.

Conclusion: The Service appreciates the early opportunity to provide comments regarding the expansion/upgrades to the Deering Airport. We are available to discuss our comments at your convenience should you have questions or need additional information. Our comments are based on the information provided in the scoping request. We would appreciate an opportunity to review any changes regarding the project plan. Charleen Buncic (907-456-0276; charleen_buncic@fws.gov) and Louise Smith (907-456-0306; louise_smith@fws.gov) are point of contacts for this project.

Sincerely,

Robert J. Henszey
Branch Chief, Planning and Consultation

Literature Cited

U.S. Fish and Wildlife Service (USFWS). 2020. Fish passage design guidelines. U.S. Fish and Wildlife Service, Alaska Fish Passage Program, Revision 5, February 5, 2020. https://www.akfishhabitat.org/.

U.S. Forest Service (USFS), Stream-Simulation Working Group. 2008. Stream simulation: an ecological approach to providing passage for aquatic organisms at road-stream crossings. 0877 1801P. San Dimas Technology and Development Center, CA. https://www.fs.fed.us/eng/pubs/pdf/StreamSimulation/hi_res/%20FullDoc.pdf.

EA Comments

EA Comments: US Army Corps

From: Post, Janet L CIV USARMY CEPOA (USA)
To: Sexton, William J (DOT)
Subject: FW: Deering Airport Improvements Comment Request
Date: Friday, January 28, 2022 2:06:32 PM
Attachments: image002.png

Hi William,

I believe I issued the Corp's permit for the Deering Airport on approximately December 8, 2021.

Thanks!

Janet Post
Regulatory Project Manager
Corps of Engineers JBER
907-753-2831

From: Winn, Ryan H CIV USARMY CEPOA (USA) <Ryan.H.Winn@usace.army.mil>
Sent: Friday, January 28, 2022 11:15 AM
To: Post, Janet L CIV USARMY CEPOA (USA) <Janet.L.Post@usace.army.mil>
Subject: FW: Deering Airport Improvements Comment Request

Janet,
For your action.

v/r,

Ryan

From: Pagemaster, Reg POA <regpagemaster@usace.army.mil>
Sent: Friday, January 28, 2022 11:06 AM
To: Winn, Ryan H CIV USARMY CEPOA (USA) <Ryan.H.Winn@usace.army.mil>
Subject: FW: Deering Airport Improvements Comment Request

Please read and respond if necessary. Thank you!

Amie Schoelen
U.S. Army Corps of Engineers, Alaska District
Lead Administrative Assistant, Regulatory Division
(907)753-2607

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Thursday, January 27, 2022 1:54 PM
To: Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; chelsy.passmore@alaska.gov; Wessel, Maria L (DFG) <maria.wessel@alaska.gov>; Barrett, Tom R (DNR) <tom.barrett@alaska.gov>; Bittner, Judith E (DNR) <judy.bittner@alaska.gov>; keith.kahklen@bia.gov; colleen.labelle@bia.gov; Harrilene.Yazzie@bia.gov; Sean.Mack@bia.gov; kvanmassenhove@blm.gov; chu.rebecca@epa.gov; gretchen.harrington@noaa.gov; matthew.eagleton@noaa.gov; jon.kurland@noaa.gov; greg.balogh@noaa.gov; Winn, Ryan H CIV USARMY CEPOA (USA) <Ryan.H.Winn@usace.army.mil>; Pagemaster, Reg POA <regpagemaster@usace.army.mil>; Clinton.L.Scott@uscg.mil; patrick_lemons@fws.gov; bob_henszey@fws.gov; kaithryn_ott@fws.gov; Eric_Taylor@fws.gov; sue_detwiler@fws.gov; zachary_stevenson@fws.gov; cityofdeering@yahoo.com; lands@nana.com; mwhiting@nwabor.org; lnelson@nwabor.org; kelli.shroyer@maniilaq.org; transportation@ipnatchiaq.org; tribeadmin@ipnatchiaq.org; Wiegers, Janice K (DEC) <janice.wiegers@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>
Subject: [Non-DoD Source] Deering Airport Improvements Comment Request

Dear Agency or Public Stakeholder,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), is seeking your review of, and comments on, the Draft Environmental Assessment (EA) for the Deering Airport Improvements Project NFAPT00429, in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). The Draft EA can be found on the Project website at the following link: http://dot.alaska.gov/nreg/deering/

The project scope is to resurface the existing runway, taxiway, and apron; repair runway, taxiway and apron shoulders; upgrade lighting system and electrical building; construct a new airport access road; replace segmented circle; and apply dust palliative. The project would address existing airport deficiencies, bringing the Deering Airport into compliance with current Alaska Statewide Transportation Plan (ASTP), the Alaska Aviation System Plan (AASP), and FAA design standards.

We respectfully request your written comments no later than February 28th. Please mail comments to: DOT&PF Attn: William Sexton, 2301 Peger Road Fairbanks, AK, 99709; or you may e-mail comments to: william.sexton@alaska.gov.

Sincerely,

Bill Sexton
Environmental Impact Analyst II
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

EA Comments: DEC Air Quality

From: Alimi, Adeyemi S (DEC)
To: Sexton, William J (DOT)
Cc: Heil, Cynthia L (DEC)
Subject: RE: Deering Airport Improvements Comment Request
Date: Tuesday, February 8, 2022 3:30:22 PM
Attachments: image001.png

Dear Bill Sexton,

The Alaska Department of Transportation and Public Facilities (DOT&PF) has requested Alaska Department of Environmental Conservation (ADEC) to comment on the proposed Deering Airport Improvements Project (NFAPT00429).

Thank you for the opportunity to comment on the proposed project. The following comments are limited to the Air Quality Division. 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, it does not require an applicability analysis under the 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 with 18 AAC 50.045(d) to prevent particulate matter from being emitted into the ambient air. Also, since the 2016 Rural Dust Survey (ADEC 2020b) identified Deering as one of the communities with dust issues, Best Management Practices (BMPs) (e.g., application of dust palliative) should be put in place to mitigate any dust issues during the project.

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: Sexton, William J (DOT)
Sent: Thursday, January 27, 2022 1:54 PM

To: Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; chelsy.passmore@alaska.gov; Wessel, Maria L (DFG) <maria.wessel@alaska.gov>; Barrett, Tom R (DNR) <tom.barrett@alaska.gov>; Bittner, Judith E (DNR) <judy.bittner@alaska.gov>; keith.kahklen@bia.gov; colleen.labelle@bia.gov; Harrilene.Yazzie@bia.gov; Sean.Mack@bia.gov; kvanmassenhove@blm.gov; chu.rebecca@epa.gov; gretchen.harrington@noaa.gov; matthew.eagleton@noaa.gov; jon.kurland@noaa.gov; greg.balogh@noaa.gov; ryan.h.winn@usace.army.mil; regpagemaster@usace.army.mil; Clinton.L.Scott@uscg.mil; patrick_lemons@fws.gov; bob_henszey@fws.gov; kaithryn_ott@fws.gov; Eric_Taylor@fws.gov; sue_detwiler@fws.gov; zachary_stevenson@fws.gov; cityofdeering@yahoo.com; lands@nana.com; mwhiting@nwabor.org; lnelson@nwabor.org; kelli.shroyer@maniilaq.org; transportation@ipnatchiaq.org; tribeadmin@ipnatchiaq.org; Wiegers, Janice K (DEC) <janice.wiegers@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>
Subject: Deering Airport Improvements Comment Request

Dear Agency or Public Stakeholder,

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We respectfully request your written comments no later than February 28th. Please mail comments to: DOT&PF Attn: William Sexton, 2301 Peger Road Fairbanks, AK, 99709; or you may e-mail comments to: william.sexton@alaska.gov.

Sincerely,

Bill Sexton
Environmental Impact Analyst II
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

EA Comments: DEC Contaminated Sites

From: CS.Scoping (DEC sponsored)
To: Sexton, William J (DOT)
Subject: RE: Deering Airport Improvements Comment Request
Date: Monday, February 28, 2022 5:54:42 PM
Attachments: image001.png
image002.png

Good afternoon,
After a quick review of the proposed project and the CSP Database and it appears there are no identified contaminated sites in the vicinity. However, some airports may have used aqueous firefighting foams (AFFF) in the past which could result in PFAS contamination that can be found in asphalt, soil, surface water, and groundwater. If historical use of AFFF is a concern at this airport, the work should also be coordinated with Sammy Cummings, PFAS Program Manager with ADOT&PF Statewide Aviation (907) 888-5671. Otherwise, if during the project a previously unknown area of contamination is discovered or a spill occurs, please be aware that **Alaska state law requires all oil and hazardous substance releases to be reported to the Department of Environmental Conservation**. For reporting information, please visit: https://dec.alaska.gov/spar/ppr/spill-information/reporting/.

Best Regards,
Jamie

JAMIE GRANT
Project Manager | State Sites Coordinator
ADEC Contaminated Sites Program
555 Cordova Street Anchorage, AK 99501
Office: 907.334.5939
Email: Jamie.Grant@alaska.gov

From: Wiegers, Janice K (DEC) <janice.wiegers@alaska.gov>
Sent: Wednesday, February 2, 2022 12:20 PM
To: Grant, Jamie D (DEC) <jamie.grant@alaska.gov>
Subject: FW: Deering Airport Improvements Comment Request

Here's another DOT notice.

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Thursday, January 27, 2022 1:54 PM
To: Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; chelsy.passmore@alaska.gov; Wessel, Maria L (DFG) <maria.wessel@alaska.gov>; Barrett, Tom R (DNR) <tom.barrett@alaska.gov>; Bittner, Judith E (DNR) <judy.bittner@alaska.gov>; keith.kahklen@bia.gov; colleen.labelle@bia.gov; Harrilene.Yazzie@bia.gov; Sean.Mack@bia.gov; kvanmassenhove@blm.gov; chu.rebecca@epa.gov; gretchen.harrington@noaa.gov; matthew.eagleton@noaa.gov; jon.kurland@noaa.gov; greg.balogh@noaa.gov; ryan.h.winn@usace.army.mil; regpagemaster@usace.army.mil;

Clinton.L.Scott@uscg.mil; patrick_lemons@fws.gov; bob_henszey@fws.gov; kaithryn_ott@fws.gov; Eric_Taylor@fws.gov; sue_detwiler@fws.gov; zachary_stevenson@fws.gov; cityofdeering@yahoo.com; lands@nana.com; mwhiting@nwabor.org; lnelson@nwabor.org; kelli.shroyer@maniilaq.org; transportation@ipnatchiaq.org; tribeadmin@ipnatchiaq.org; Wiegers, Janice K (DEC) <janice.wiegers@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>
Subject: Deering Airport Improvements Comment Request

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We respectfully request your written comments no later than February 28th. Please mail comments to: DOT&PF Attn: William Sexton, 2301 Peger Road Fairbanks, AK, 99709; or you may e-mail comments to: william.sexton@alaska.gov.

Sincerely,
Bill Sexton
Environmental Impact Analyst II
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

EA Comments: DEC PFAS Contaminated Sites

From: Gordon, Keith (FAA)
To: Sexton, William J (DOT)
Cc: Gilbertsen, Jack (FAA)
Subject: RE: Deering Airport Improvements - Inmachuk River Material
Date: Friday, May 6, 2022 8:17:40 AM
Attachments: image001.png

Bill,

FAA concurs with the use of the proposed materials site.

The EA conclusion will include a statement to DOT that FAA does not provide funding for reclamation therefore if the materials at some time in the future are considered contaminated then DOT will have to fund the reclamation.

Thanks

Keith Gordon
Environmental Protection Specialist
Federal Aviation Administration
Alaska Region
222 West 7th Avenue, #14
Anchorage, AK 99513-7587
Desk – 907-271-5030
Fax – 907-271-2851

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Friday, April 29, 2022 11:41 AM
To: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Subject: Deering Airport Improvements - Inmachuk River Material

Hey Keith,

I have been reviewing a draft EA that is being put together by Stantec Consulting for the upcoming Deering Airport Improvement project. While doing so I noticed that Deering is one of the communities that had their water supply sampled for PFAS contamination by Maniilaq back in 2019, showing PFNA and PFBS contamination in samples collected via the raw-water sample tap located at the local water treatment plant. The water supply for Deering is the Inmachuk River and our proposed project plan includes material extraction from gravel bars along said river.

Subsequent discussion with DEC lead to the guidance that PFAS chemicals tend to prefer to be in the aqueous phase, making it unlikely that PFNA and PFBS would be deposited in the river gravel if the river is indeed contaminated. This combined with the fact that there have been no reported releases

of AFFF or other PFAS-containing materials on airport property or in the surrounding area leads me to conclude that encountering PFAS during material extraction or any other phase of the project is unlikely.

I would like to propose that we note these findings in the EA and attach the supporting consultation documents. That being said, due to the uncertainty surrounding how we deal with potential PFAS contamination I would like to know if you think this would be ample documentation of the situation and if it would be beneficial to provide any other supporting documentation from sources not already referenced.

I have attached the Maniilaq sampling report, correspondence with the POC for the sampling, and correspondence with DEC. Please let me know if there is anything else you would like to see to assist in making a decision on this.

Thanks,

Bill Sexton
Environmental Impact Analyst II
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

From: O"Connell, Bill A (DEC)
To: Sexton, William J (DOT)
Subject: RE: Deering Potential PFAS Contamination
Date: Thursday, April 28, 2022 3:41:29 PM
Attachments: image001.png

Thanks Bill,

I do not think you need to take any special precautions for PFAS regarding the use of gravel from the Inmachuk River in support of the Deering Airport project for the following reasons:

1. There have been no reported releases of AFFF or other PFAS-containing materials in the area of the proposed gravel extraction
2. PFAS generally prefer to be in the aqueous phase, so if PFNA and PFBS are present in Inmachuk River water, it is unlikely that they would be deposited on river gravel. There have been a handful of gravelly samples collected from ponds in other parts of the state where PFAS were present in the water, but not in the gravel within the ponds.
3. There is a possibility that the source of the PFNA and PFBS in the 2019 sample came from cross contamination from water treatment plant infrastructure or other a sources and are not present in Inmachuk River water.
4. While PFAS are considered hazardous substances under statute, we do not currently have numerical cleanup levels for PFNA and PFBS, so I don't have a standard to compare the data to. I would agree that the levels detected in the 2019 sample were low, less than 1 ppt.

Please let me knows if you have any other questions or concerns.

Bill

Bill O'Connell
Environmental Program Manager
ADEC Contaminated Sites Program
(907) 269-3057

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Thursday, April 28, 2022 2:13 PM
To: O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>
Subject: Deering Potential PFAS Contamination

Hey Bill,

I am working on a project to improve the Deering Airport which is expected to include material extraction from the Inmachuk River (see attached). This project is proposed to address airport deficiencies by rehabilitating and resurfacing the runway, repairing runway embankments, and constructing a new airport access road to replace the current one that experiences severe seasonal flooding.

It has come to my attention that sampling was performed on the Inmachuk via the raw-water sample tap located at the local water treatment facility. The sampling found low levels of PFNA and PFBS contamination, two PFAS chemicals without ADEC action levels. I'm reaching out to you for guidance and input should we continue as planned to extract gravel from bars along the Inmachuk River. Let me know if I can get you any more information on the project.

Thanks,

Bill Sexton
Environmental Impact Analyst II
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

From: Sean Peterson
To: Sexton, William J (DOT)
Subject: RE: Deering PFAS Sampling
Date: Thursday, April 28, 2022 12:29:57 PM
Attachments: image001.png
image002.png

Good Afternoon Bill,

The sampling that was done as part of the Maniilaq study was conducted on the raw-water sampling points within their water plants, so in this case, the QAPP stated:
Deering – the Inmachuk River supplies water to the Village of Deering. One sample will be collected from the raw-water sample tap located at the community's water treatment plant.

The photo below, I believe, captures their drinking water intake point:

The local water operator was trained on the collection of PFAS Samples and the sample was collected with oversight from Maniilaq personnel. As far as where the PFAS identified might be originating, I don't know for sure. We have theories concerning the unlined landfills in the rural communities impacting the local water systems but it is difficult to ascertain where the detectable concentrations originated from without additional sampling. We are planning some pilot projects concerning PFAS and unlined landfills so hopefully those will shed some light on the situation. There were a few other communities that were part of the study that also had low detectable concentrations of PFAS as well. Let me know if you need anything else.

Sean Peterson
Senior Environmental Scientist
Zender Environmental Health and Research Group
400 D St. Suite 200, Anchorage, AK 99501

Tel: 1 907 277-2111
Cell: 1 907 854-0505
Fax (efax): (877) 335-6780
Email: speterson@zendergroup.org

Yugtun Qantuukut, ikaayuryukuuvet qayaagauqina.
The mission of Zender Environmental Health and Research Group, a non-profit 501(c)3 organization, is to assist underserved communities in developing programmatic capacity and community resiliency in environmental health issues. Visit us on the web at www.zendergroup.org . Need help in Yugtun or other language?
Email LEP@zendergroup.org

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Thursday, April 28, 2022 10:22 AM
To: Sean Peterson <speterson@zendergroup.org>
Subject: Deering PFAS Sampling

Good Morning Sean,

I'm working on a proposed project at the Deering Airport and have been going through a record of PFAS sampling that took place in the Inmachuk River back in 2019. Unfortunately I only have the lab report that doesn't include where the sample was taken, just that it was a water sample. Can you recall where you had taken the sample? Also I don't know how familiar you are with the area, but do you have an idea of where the contamination could be coming from?

Thanks,
Bill Sexton
Environmental Impact Analyst II
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

COMPLETE PFAS SAMPLING RESULTS

Contaminant of Concern (ng/L)	ADEC Action Levels	Public Water System Source by Community														
		Ambler		Buckland	Deering	Kiana		Kivalina	Kobuk	Kotzebue		Noatak		Noorvik	Selawik	Shungnak
		2002 Well	1982 Well	Buckland River	Inmachuk River	Upper Well	Lower Well	Wulik River	Main Well	Devils Lake	Vortac Lake	Well # 5	Well # 6	Kobuk River	Selawik River	Kobuk River
PFOA	Combination of the analytes should not exceed 70 ng/L	0.31	0.36	ND	ND	ND	ND	ND	0.32	ND	ND	ND	ND	0.23	0.41	ND
PFOS		ND	ND	ND	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND	0.43	ND
PFHpA	No Action Levels	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PFNA		ND	ND	ND	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PFHxS		0.34	0.39	ND	ND	ND	ND	ND	ND	5.43	ND	ND	ND	ND	ND	ND
PFBS		0.27	0.28	ND	0.38	ND	ND	ND	ND	ND	3.82	ND	ND	ND	ND	ND

Detectable Concentration

ND = Not Detected
Results are "Not Detected" when the concentration is lower than the Detection Limit.

Meansurement Equivalents

1 ng/L = 1 ppt

One nanogram per liter equals one part per trillion

Contaminants Name and Acronym

Perfluorooctanoic Acid (PFOA)

Perfluorooctane Sulfonate (PFOS)

Perfluoroheptanoic Acid (PFHpA)

Perfluorononanoic Acid (PFNA)

Perfluorohexane Sulfonate (PFHxS)

Perfluorobutane Sulfonate (PFBS)

Presented are the complete PFAS sampling results from each public water system source in the Northwest Arctic Borough (2019). The Department of Environmental Conservation (ADEC) recommends drinking water samples check for 6 different PFAS contaminants. On the left are all six of the PFAS contaminant acronyms that were analyzed. The second table column shows the ADEC Action Levels which mirror the EPA Health Advisory Limit of 70 ng/L for the sum of PFOA and PFOS concentrations (PFOA and PFOS results are outlined red in the table). 11 communities were investigated and 15 different water sources were sampled.

According to ADEC's current health guidelines, all public water system sources in the Northwest Arctic Borough have safe PFAS levels.

If you have any questions regarding the PFAS Project, please contact Charlotte Sheridan, Staff Environmental Health Specialist at (907)-442-7783

Laboratory Analysis Report

Generic
Maniilaq Association

Work Order:	1195574
	Deering
Client:	Maniilaq Association
Report Date:	October 14, 2019

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification, and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.
All DRO/RRO analyses are integrated per SOP.

1195574

; North America Inc.
OF CUSTODY RECORD

Profile: 2 364493 NSW 9/20/19

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Page ____ of ____

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 1

CLIENT: Zender Environmental

CONTACT: Sean Peterson

PHONE #: 907 854 0505

PROJECT NAME: PFAS Sampling

PROJECT/ PWSID/ PERMIT#:

REPORTS TO: Manilaq Health Association

E-MAIL: speterson@zendergroup.org

Profile #:

INVOICE TO: Manilaq Health Association

QUOTE #:

P.O. #:

Section 3 — Preservative

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis* Trizma: EPA 537 - PFAS*	Analysis*	Analysis*	Analysis*	Analysis*	Analysis*	Analysis*	Analysis*	Analysis*	Analysis*	REMARKS/LOC ID
(1) AB	Source Water	09/18/19	3:54 pm	Water	2	Grab	X										

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Section 5

	Date	Time	Received By:
Relinquished By: (1)	9/18/19	6:00PM	Charlotte Sheridan
Relinquished By: (2) Charlotte Sheridan	9/19/19	3:30pm	
Relinquished By: (3)			
Relinquished By: (4)	9/20/19	0822	Received For Laboratory By: NSW

Section 4

DOD Project? Yes No

Cooler ID: _____

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:

Please report PFOS, PFOA, PFNA, PFHxS, PFHpA, and PFBS.

Temp Blank °C: 0.8 D30

or Ambient [ ]

Chain of Custody Seal: (Circle) 1-F

INTACT BROKEN ABSENT

Delivery Method: Hand Delivery[ ] Commerical Delivery [ ]

1195574

SGS North America Inc.
200 W. Potter Dr., Anchorage, AK 99518 (pn) 907-562-2343, (fax) 907-561-5301
3180 Peger Rd. Ste. 190, Fairbanks, AK 99709 (ph) 907-474-8656

Sample Kit Request

☐ **Client pickup Date:** _____ **Time:** _____

Be sure to ask if client will ship by ground (DOT) or air carrier (IATA)

Does a Profile exist in LIMS? **If not, please send a request for new profile build.**

Client Name: Zender Environmental
Ordered By: Sean Peterson **Phone #:**
Email: speterson@zendergroup.org
Project Name: Deering **Project/Permit#:**
Quote #: **Profile #:**
Delivery Address: Kotzebue, Alaska (OTZ) / c/o Zender Environmental / attn: Sean Peterson (907) 854-0505

☐ **Deliver to client:**
☑ **Ship by/Air Carrier:** AK Air Cargo
Airbill Number:
Date to ship by: 8/22/2019
Notes:
Kit request taken by: JAN **Date:** August 19, 2019
Kit prepared by: LF **Date:** 8/22/19
Kit *(including lid tightness for pres'd bottles)* checked by: AL **Date:**
Kit packed & shipped by: LF **Date:** 1

Filename: SKIT_Zender Environmental_Deering_2019-08-19 ***Required Items**

No. Samples	Matrix	Analysis	Container Size & Type		Pres.	Bottle Lot #	Preservative Lot #	Hold Time	# QC Bottles	Total Bottles
1	DW	EPA 537 - PFAS	2 x 250 mL	Teflon Free HDPE	Trizma			14 d	0	2

☐ Pack for Shipping via ***ground*** (DOT)
☑ Pack for Shipping via ***air carrier*** (IATA)
☑ Temperature Blank (***circle one:*** 120-ml OR 500-ml)
☐ Soil VOA Trip Blank - Lot#:
☐ Water VOA Trip Blank - Lot#:
☐ 524 VOA Trip Blank - Lot#:
☐ Low Level Mercury Trip Blank- Lot#:
☑ Coolers
☑ Gel Ice
☑ Bubble Wrap
☑ Labels
☑ Custody Seals
☑ SGS COCs - ***Circle req'd forma*** ☐ Blank COC ☐ DW COC ☑ COC initiated by PM (attached)
☐ Send additional instructions/documents *(**Note to PM:** Be sure to attach copy of requested form.)*

☐ Total # includes bottles for % Solids
☐ Track all Lot#? (Required for DOD)
☐ Foreign Soil

Other Notes/Reminders for Kit Prep:

Attention Client/Sampler:

1. Do not rinse container; be aware of any acid preservative in container.
2. Fill container, but do not overfill (except volatile waters).
3. Label the container with your sample ID as well as the date/time of collection.
4. Fill out the Chain of Custody.
5. Add frozen gel packs or ice to your cooler & pack to prevent breakage.

Charges may be invoiced for bottles which are unused or improperly used.
If you have any questions concerning this sample kit, please contact your Project Manager for assistance. *Thank you.*

***This will email a copy of this form for confirmation to the client email and save the form to the network. This should not be used outside of SGS.**

e-Sample Receipt Form

SGS Workorder #: **1195574**

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		N/A Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1 front
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: Box @ 0.8 °C Therm. ID: D30
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
		N/A ***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	N/A	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1195574001-A	Trizma	OK			
1195574001-B	Trizma	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.

FINAL LAB REPORT

1195574

31901653

11-Oct-2019

Prepared by

SGS NORTH AMERICA

Prepared for

SGS North America Inc.

Julie Shumway

200 W. Potter Dr.
Anchorage, AK 99518
Phone: 907-562-2343
Email: julie.shumway@sgs.com

This report is approved by

Tamara Burkamper

tamara.morgan@sgs.com

Senior Project Manager

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
J	Estimated Concentration.
E	Amount detected is greater than the Upper Calibration Limit
TIC	Tentatively Identified Compound
ND	Not Detected
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
Source Water	31901653001	09/18/2019 15:54	09/24/2019 10:26	Drinking Water

Case Narrative

The LCS associated with this project has marginally high recovery for PFBS at 132%. Any hits in the samples may have a slight high bias. Samples were not re-extracted due to expired hold times.

Source Water

Surrogate recovery for d5-NEtFOSAA is marginally low; there is no effect on the data as this surrogate is not used to quantitate any of the compounds reported.

Results of **Source Water**

Client Sample ID: **Source Water**
Client Project ID: **1195574**
Lab Sample ID: 31901653001-A
Lab Project ID: 31901653

Collection Date: 09/18/2019 15:54
Received Date: 09/24/2019 10:26
Matrix: Drinking Water
Solids (%):

Results by **EPA 537 v1.1**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
PFHpA	**0.212**	J	0.204	2.04	ng/L	1	10/8/2019 18:48
PFOA	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
PFNA	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
PFBS	**0.376**	J	0.204	2.04	ng/L	1	10/8/2019 18:48
PFHxS	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
PFOS	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
Surrogates							
13C2-PFHxA	81.5			70.0-130	%	1	10/8/2019 18:48
13C2-PFDA	70.7			70.0-130	%	1	10/8/2019 18:48
d5-NEtFOSAA	56.7*			70.0-130	%	1	10/8/2019 18:48

Batch Information

Analytical Batch: **XLC1401**
Analytical Method: **EPA 537 v1.1**
Instrument: **TQS2**
Analyst: **FNS**

Prep Batch: **HXX2421**
Prep Method: **EPA 537 v1.1 Prep**
Prep Date/Time: **09/25/2019 17:23**
Prep Initial Wt./Vol.: **245 mL**
Prep Extract Vol: **1 mL**

SGS North America Inc.
CHAIN OF CUSTODY RECORD

1195574

Locations Nationwide

Alaska	Florida
New Jersey	Colorado
Texas	North Carolina
Virginia	Louisiana

www.us.sgs.com

CLIENT:	SGS North America Inc. - Alaska Division	SGS Reference: 31901653 SGS NC	Page 1 of 1
CONTACT:	Julie Shumway PHONE NO: (907) 562-2343	Additional Comments: All soils report out in dry weight unless	
PROJECT NAME:	1195574 PWSID#: NPDL#:		
REPORTS TO: Julie Shumway	E-MAIL: Julie.Shumway@sgs.com Env.Alaska.RefLabTeam@sgs.com		
INVOICE TO:	SGS - Alaska QUOTE #: P.O. #: 1195574		

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	# CONTAINERS	Preserv-ative Used:	Trizma				MS	MSD	SGS lab #	Location ID
						TYPE C = COMP G = GRAB MI = Multi Incre-mental Soils	EPA 537 PFAS*							
	Source Water	9/18/2019	15:54:00	DW	2	GRA	X						1195574001	

Relinquished By: (1)	Date	Time	Received By:	DOD Project?	No
				Report to DL (J Flags)? If J- Report as DL/LOD/LOQ.	No
Relinquished By: (2)	Date	Time	Received By:	Data Deliverable Requirements:	Level I
				Cooler ID:	
Relinquished By: (3)	Date	Time	Received By:	Requested Turnaround Time and-or Special Instructions:	
				*Report PFOS, PFOA, PFNA, PFHxS, PFHpA, and PFBS.	
Relinquished By: (4)	Date	Time	Received For Laboratory By:	Temp Blank °C: 0.4° or Ambient [ ]	Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
J Shumway	9/23/19	0847	ashley owens 9/24/19 10:26		

[X] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **SGS-NA-AK** Work Order No.: **31901653**

1. _x_ Shipped
   ___ Hand Delivered

   Notes: **UPS Next Day Air:**
   1z A86 19W 01 6634 8204

2. _x_ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms

3. _x_ Custody Tape on Container
   ___ No Custody Tape

4. _x_ Samples Intact
   ___ Samples Broken / Leaking

5. _x_ Chilled on Receipt Actual Temp.(s) in °C: 0.4 Thermometer ID#: IR4-Probe
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   _x_ Temperature Blank Present
   ___ WV samples-proxy not allowed

6. _x_ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted

7. ___ Chlorine absent
   ___ HNO3 < 2
   ___ HCL < 2
   _x_ Additional Preservatives verified (see notes) Trizma

8. _x_ Received Within Holding Time
   ___ Not Received Within Holding Time

9. _x_ No Discrepancies Noted
   ___ Discrepancies Noted
   ___ NCDENR notified of Discrepancies*

10. ___ No Headspace present in VOC vials N/A
    ___ Headspace present in VOC vials >6mm

Comments:

Inspected and Logged in by: AMO
Date: 9/24/2019

*NCDENR must be notified when collection, holding time or preservation requirements are not met.

EA Comments: NMFS EFH

From:	Stefanie Coxe - NOAA Federal
To:	Sexton, William J (DOT)
Cc:	Gretchen Harrington - NOAA Federal; Sean McDermott - NOAA Federal
Subject:	Deering Airport Improvements NFAPT00249/AIP TBA
Date:	Tuesday, February 1, 2022 9:57:27 AM

Good morning William Sexton,

Thank you for notifying us about the proposed project from Alaska Department of Transportation and Public Facilities (ADOT&PF) to address existing airport deficiencies at the Deering Airport, near the mouth of the Inmachuk River on the Seward Peninsula.

In support of the Magnuson-Stevens Fishery Conservation and Management Act consultation process, you provided a draft EA (January 2022) for the proposed action and an EFH Assessment (January 2021). Your agency has concluded that the proposed project is anticipated to have temporary, short duration, and/or minimal effects to EFH in the project area. While the project may have negative effects on EFH, we agree with your determination that these potential adverse effects to EFH would be minimal and temporary in nature if permit requirements are complied with and your identified conservation recommendations and BMPs are followed.

As a reminder, we provided three conservation recommendations via email January 29, 2021 to include:

- Road construction should take place when salmon populations are not present (fall, winter or spring).

- Design bridge abutments to minimize disturbances to stream banks, and place abutments outside of the floodplain whenever possible.You have indicated the bridge will be free standing with supports on the abutment. NMFS supports this decision. If possible, avoid culverts. If not possible, "they should be sized, constructed, and maintained to match the gradient and width of the stream to accommodate design flood flows, and they should be large enough to provide for migratory passage of adult and juvenile fishes".

- Conservation recommendations include conducting this activity outside of

spawning seasons (winter).

We appreciate the opportunity to comment on this action and we do not have additional conservation recommendations at this time. If the project plans become more than minimal and no longer temporary in nature, we may require reinitiating a consultation. You may reach out to me directly (stefanie.coxe@noaa.gov) with any questions.

Very Respectfully,
Stefanie

--
LTJG Stefanie Coxe
Resource Specialist, Alaska Region Habitat Conservation Division
National Marine Fisheries Service | U.S. Department of Commerce

Appendix D: Section 106 Consultation

SHPO Initiation

Confidential, Available on Request

APE Determination

McKinney, Holly Jean (DOT)

From: Ortiz, Liz M (DNR)
Sent: Monday, January 25, 2021 12:02 PM
To: Meitl, Sarah J (DNR); McKinney, Holly Jean (DOT)
Cc: Ortiz, Liz M (DNR)
Subject: RE: NAFPT00249 Deering Airport and Access Road Improvements Consultation Initiation

3130-1R FAA / 2020-00203

Good afternoon Holly,

The Alaska State Historic Preservation Office received your correspondence (dated January 4, 2021) on January 4, 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 looks forward to working with you through continued consultation on this project as it moves 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.

Stay warm,
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: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Sent: Monday, January 4, 2021 3:26 PM

Findings Letter

Confidential, Available on Request

ATTACHMENT 2

ARCHAEOLOGICAL MONITORING PROCEDURES AND INADVERTENT DISCOVERY PLAN FOR DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS PROJECT PROJECT NUMBER: NFAPT00249

Appendix 1

Confidential, Available on Request

SHPO Concurrence

McKinney, Holly Jean (DOT)

From: Ortiz, Liz M (DNR)
Sent: Friday, April 2, 2021 2:59 PM
To: McKinney, Holly Jean (DOT)
Cc: Ortiz, Liz M (DNR)
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

3130-1R FAA / 2020-0203

Good afternoon Holly,
The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated March 15, 2021) concerning the subject project on March 15, 2021. Following our review of the documentation provided, we concur with the finding of No Historic Properties Adversely Affected under the condition of archaeological monitoring as outlined in your documentation. Please note that our office may need to re-evaluate our concurrence if changes are made to the project's scope or design.

Thank you for taking our comments made in prior consultation on similar projects into consideration, and for including the Inadvertent Discovery Plan (IDP) in this documentation. We appreciate the level of effort and have no new comments for the IDP or Guideline appendices included in your documentation package.

As stipulated in 36 CFR 800.3, other consulting parties such as the local government and Tribes are required to be notified of the undertaking. Additional information provided by the local government, Tribes, or other consulting parties may cause our office to re-evaluate our comments and recommendations. Please note that our response does not end the 30-day review period provided to other consulting parties.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4), in consultation with our office. Please note that some sites can be deeply buried and that fossils are considered cultural resources subject to the Alaska Historic Preservation Act.

This email serves as our office's official correspondence for the purposes of Section 106. Thank you for the opportunity to review and comment. Please contact Liz Ortiz at 269-8722 or liz.ortiz@alaska.gov if you have any questions or we can be of further assistance.

Have a great weekend!
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: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Monday, March 15, 2021 8:28 AM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Good Morning Holly,

The Office of History and Archaeology/Alaska State Historic Preservation Office received your documentation, and its review has been assigned to me under 2020-00203. Our office is still tolling in response to complications from COVID-19, but we will get back to you as soon as we can. Please contact me by email if you have any questions or concerns.

Best,
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: Monday, March 15, 2021 8:23 AM
To: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>

Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Hi Liz,

Yes, sorry about the confusion. I somehow deleted my list of appendices during my last round of edits, it is in the corrected draft.

Best,
Holly

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Monday, March 15, 2021 8:13 AM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Good morning Holly,

Just to confirm, the 2nd ZendTo package (with "corrected_03122021" at the end of the doc title) is the most recent and the one we should be working with?

Thanks, and Happy Monday!
-Liz

Review and Compliance – AK SHPO
Office of History and Archaeology
liz.ortiz@alaska.gov
We are currently teleworking; email communication is best. Be well!

From: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Friday, March 12, 2021 3:58 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>
Subject: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Hi Liz,

The copy of the findings letter I sent via ZendTo didn't have the attachments listed in the document. Please see updated letter attached here.

Best,
Holly

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

To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Subject: FW: NAFPT00249 Deering Airport and Access Road Improvements Consultation Initiation

Hi Holly,

Initiation letter received. The project is logged in with Liz Ortiz under 2019-00203 and she'll provide a response as soon as she can.

Happy New Year,
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: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Monday, January 4, 2021 2:58 PM
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Gamza, Thomas A (DOT) <thomas.gamza@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>; Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Subject: NAFPT00249 Deering Airport and Access Road Improvements Consultation Initiation

Hi Sarah,

Please see attached consultation initiation letter for the NAFPT00249 Deering Airport and Access Road Improvements.

Best,
Holly

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

Appendix E: Section 7 Consultation

USFWS Initiation Letter

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

NORTHERN REGION
Design & Engineering Services

2301 Peger Road
Fairbanks, AK 99709-5316
Main: 907-451-2273
TDD: 907-451-2363
dot.alaska.gov

December 10, 2020

Kaithryn Ott
U.S. Fish & Wildlife Service-Alaska Region
1011 East Tudor Road
Anchorage, AK 99503

Re: Deering Airport and Access Road Improvements
NFATP00249/AIP: TBA
Section 7 Consultation-Endangered Species Act (ESA)

Dear Ms. Ott:

The Alaska Department of Transportation and Public Facilities (DOT&PF) proposes airport and access road improvements at Deering Airport, Deering, Alaska. The Deering Airport and Access Road Improvements Project is Federal Aviation Administration (FAA) funded through the Airport Improvement Program (AIP).

The Deering Airport is located on the Seward Peninsula about 55 miles south of Kotzebue on Kotzebue Sound near the mouth of the Inmachuk River at USGS quadrangle Kotzebue A-2, Section 25, Township 08N, Range 20W and Sections 19 and 30, Township 08N Range 19W, Kateel River Meridian (Figure 1).

The project purpose is to remedy Deering Airport deficiencies (Figures 2-4), bring the airport to current Federal Aviation Administration (FAA) design standards, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP). We expect work to commence in the winter of 2022/2023 and continue over a 1.5-2-year period.

Deering Airport has two gravel surfaced, perpendicular runways designated as Runway (RW) 3-21 and RW 12-30. Over time, winter snow removal operations have graded most surfacing off both runways' surfaces, resulting in persistent rutting and water ponding on the underlying runway embankment. Additionally, drifting snow collects west of the runways' intersection, requiring a substantial snow removal effort and creating springtime meltwater ponding adjacent the runway embankments. These conditions keep airport maintenance costs high. Additionally, the airfield's surface course and lighting system are beyond their useful life and need rehabilitation or replacement.

The Deering Airport and its access road are also subject to flooding due both to spring ice jams in the Inmachuk River and strong, periodic storm surges from Kotzebue Sound. For example, in 2015 and 2016, ice jams at the Inmachuk River mouth submerged portions of the airport access road (Deering-Inmachuk Road), which provides access between the Deering community and the airport (and also lies mostly off airport property). The ice jam also extended to one runway threshold embankment. In 2016, these conditions caused the State of Alaska to declare a community disaster at Deering. There are no documented flood events overtopping the airport surfaces.

The Proposed Action would include the following elements:

- Rehabilitate and resurface the airport.
- Repair the runway embankments.
- Construct a new airport access road and new bridge over Smith Creek.
- Apply dust palliative to airport traffic surfaces.
- Replace the airport lighting system.
- Improve or re-establish sufficient airport drainage.
- Construct a snow fence.
- Use existing gravel bars of the Inmachuk River floodplain as material sources, and mobilize these materials and construction equipment to the airport construction area using the combined existing community barge landing and developed roads.

An overview of the proposed project components and overlapping critical habitat is provided in Figures 5 and 5a. To identify any potential residual project effects and not jeopardize the continued existence of a federally listed species or destruction or adverse modification of designated critical habitat, we are consulting with the U.S. Fish and Wildlife Service (USFWS) to comply with requirements mandated in Section 7 of the *Endangered Species Act*. Given the location of the project, project activities, and review of the species information available, it is anticipated that no adverse effects on any ESA-listed species or designated critical habitat would occur.

The proposed study area overlaps with critical habitat for polar bear (*Ursus maritimus*; 75 FR 76086 76137) (Figure 5, 5a) and with migratory ranges for Spectacled Eider (*Somateria fischeri*) and Steller's Eider (*Polysticta stelleri*); however, it does not overlap with designated critical habitat for either eider species (USFWS 2002, 2010). A description of occurrence and potential project effects to polar bear, Spectacled Eider, and Steller's Eider is provided below.

Polar Bear

Occurrence of Polar Bear and its Critical Habitat

Polar bear distribution is circumpolar, varying with sea-ice extents and prey availability (Schliebe et al. 2006). Two polar bear populations occur in Alaska: the Beaufort Sea population and the Chukchi Sea population (Schliebe et al. 2006). The Chukchi Sea population typically moves into the southern Chukchi Sea with the pack ice in fall and winter and migrates north with the pack ice in spring and summer (Garner et al. 1990). Traditional knowledge indicates that polar bear tracks are found along the coast and on barrier islands in late fall and winter in the south-eastern Chukchi Sea, when bears first arrive in the region (Voorhees et al. 2014). Although polar bears in the Chukchi Sea are typically closely associated with sea ice, recent increases in terrestrial land use (primarily on Wrangle Island rather than the Alaskan mainland coast) have been detected (Rode et al. 2015). Habitat selection modeling predicts a lower probability for habitat selection by polar bears along the coast, compared to offshore regions in the Chukchi Sea in winter and spring (Wilson et al. 2016).

Polar bear feeding critical habitat overlaps with the Study Area, with no barrier island critical habitat identified for Deering (Figure 5; 75 FR 76086 76137).

Project Effects on Polar Bear and its Critical Habitat

Project effects are not anticipated to negatively impact polar bears or their barrier island or feeding critical habitats. There is no barrier island habitat at Deering. Current disturbance in the region include community

presence and associated traffic, hunting activities, and presence of low flying aircraft. Construction and/or activity at the community barge landing would create noise that may disturb polar bears if present, although existing noise disturbances are currently present within the Study Area. A polar bear interaction plan would be developed to avoid, minimize, or mitigate disturbance to polar bear and their critical habitat (see Actions to Reduce or Remove Project Effects, below).

Spectacled Eider

Occurrence of Spectacled Eider and its Critical Habitat

Spectacled Eider occur throughout marine habitats in Alaska, and are typically found within coastal waters 1 to 28 miles from shore. Molting eiders are found in eastern Norton Sound and Ledyard Bay mid-July through December and wintering birds congregate in small groups near St. Lawrence Island. In western Alaska, core breeding habitat extends from Nelson Island to the Askinuk Mountains (Petersen et al. 2000).

The Spectacled Eider is listed under the ESA as Threatened. Population declines are primarily attributed to alteration or destruction of habitat, contaminant exposure, and predation (USFWS 2010). Critical habitat for Spectacled Eider has been designated for molting sites in Norton Sound and Ledyard Bay, for breeding on the Yukon-Kuskokwim Delta, and for wintering south of St. Lawrence Island (USFWS 2010). The study area does not overlap with any designated critical habitat for this species.

Project Effects on Spectacled Eider and its Critical Habitat

Spectacled Eider breed along peninsulas, pond shorelines, or wet meadows dominated by sedges (Petersen et al. 2000). Construction of the Proposed Action may result in some loss or alteration of shoreline or wetland habitats potentially suitable for Spectacled Eider breeding. However, material site extraction, by utilizing solely vegetation-free exposed gravel areas, would by default then position additional vegetated shoreline nesting habitat nearer to open water channels. This would allow eiders to more safely access these habitats from open water without crossing open gravel bar areas where they would be more exposed to avian and terrestrial predators.

The noise associated with construction would cause an increase in disturbance for only a relatively short period of time, resulting in only temporary, localized displacement of aquatic birds. The project would implement several avoidance, minimization, or mitigation measures to limit potential residual adverse effects of the project (see Actions to Reduce or Remove Project Effects, below).

Steller's Eider

Occurrence of Steller's Eider and its Critical Habitat

The Steller's Eider is listed under the ESA as Threatened. Reasons for population declines are poorly understood but potential threats include oil or contaminant exposure, predation, and hunting pressures (USFWS 2002). Critical habitat for Steller's Eider has been designated for breeding habitat on the Yukon-Kuskokwim Delta, and molting sites in Kuskokwim Bay, Izembek Lagoon, Nelson Lagoon, and Seal Islands (USFWS 2002).

Steller's Eider breed primarily along the Arctic Coastal Plain, but also have a small population that nests on the Yukon-Kuskokwim Delta. Eiders molt throughout southwest Alaska mid-July through December, primarily along the north side of the Alaska Peninsula, Izembek Lagoon, Nelson Lagoon, Port Heiden, and Seal Islands (Frederickson, L.H 2001; USFWS 2002). Wintering birds congregate in shallow, sheltered waters along the south side of the Alaska Peninsula.

There are no known records of Steller's Eider occurring within the study area. The study area does not overlap with any designated critical habitat for this species.

Project Effects on Steller's Eider and its Critical Habitat

Steller's Eider breed in open tundra or within shrubby willow or birch stands in close proximity to coastal areas (Frederickson, L.H. 2001; USFWS 2002). Construction of the project would result in some loss or alteration of tundra or shrub habitats or wetlands, as described above for Spectacled Eider. However, material site extraction would create additional shoreline habitat by creating open water adjacent to the existing vegetated perimeter. By limiting removal to exposed gravel areas only, adjacent channel habitat would be created, allowing eiders to access nearby waters without crossing open gravel bars. Noise impacts, as also described above for Spectacled Eider, could also potentially impact Steller's Eider. The project would implement several avoidance, minimization, or mitigation measures to limit residual adverse effects of the project (see Actions to Reduce or Remove Project Effects, below).

Actions to Reduce or Remove Project Effects

Proposed mitigation measures to avoid, minimize, or mitigate potential residual adverse effects of the project on polar bear, Spectacled Eider and Steller's Eider are recommended based on state or federal regulations and policies, management practices and guidelines, and relevant peer-reviewed literature. Measures include:

- A polar bear interaction plan would be developed as required by USFWS.
- Where possible, vegetation clearing, site preparation, and construction activities will adhere to the recommended periods to avoid vegetation clearing (USFWS 2020):
    - Forest/Woodland: 1 May – 15 July
    - Shrub/Open: 10 May – 20 July
    - Raptors may nest 2+ months earlier than other birds.
    - Black scoter are known to nest through August 10.
    - Seabird Colonies: 20 May – 15 September
    - Eagles: 1 March – 31 August
- If vegetation clearing, site preparation, and construction occurs within these periods, pre-construction nest surveys would be conducted by qualified personnel and appropriate mitigation developed in consultation with the USFWS.
- High-disturbance project activities (e.g. pile driving for bridge construction) would be avoided where practicable during the nesting and peak migration window.

We request your review of the project and concurrence that the proposed project is not likely to adversely affect any federally listed species, proposed species, candidate species, nor their critical habitat.

Thank you for your attention to this request, if you have any questions regarding the proposed project, you may contact Paul Karczmarczyk at (907) 451-2288 or paul.karczmarczyk@alaska.gov.

Sincerely,

Brett D Nelson

Brett Nelson
Regional Environmental Manager; DOT&PF NR

Enclosures: Figure 1 - Location & Vicinity Map
Figure 2 – Proposed Action Site Plan

Figure 3 – Flooding at Deering Airport
Figure 4 – Potential Material Sites
Figures 5 & 5a - USFWS Critical Habitats

lmc
Copy to: Preconstructon\Project File
cc: Jonathan Hutchinson, P.E. Project Manager

Project Origin: City of Deering
Cape Nome Recording District,
Township 08N, Range 20W, Section: 25
Township 08N, Range 19W, Section: 19 & 30
Kateel River Meridian
USGS: KOTZEBUE (A-2) ALASKA
Deering Airport
Latitude: 66.0691 N
Longitude: -162.7670 W

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

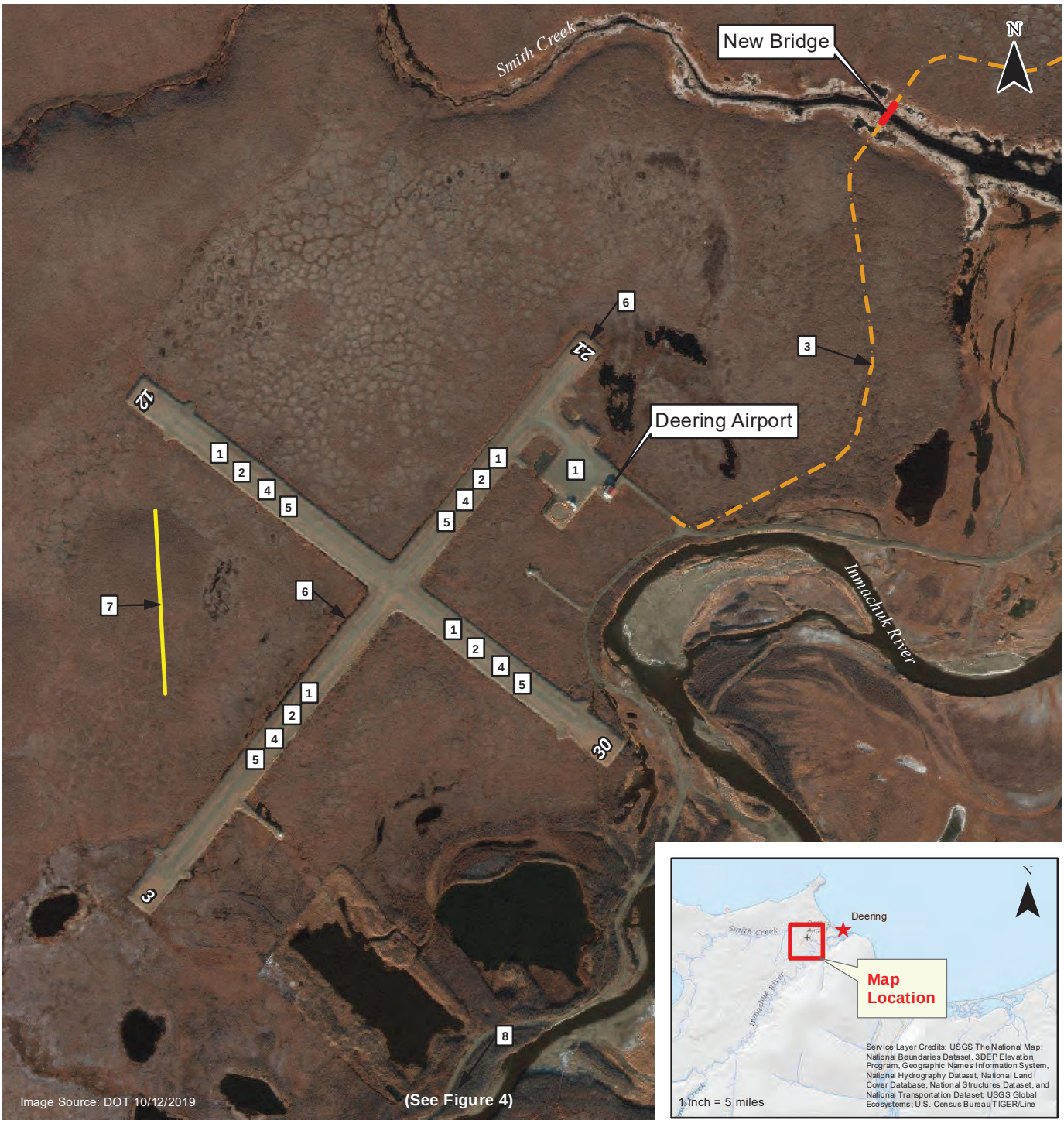
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Location & Vicinity Map

DATE: October, 2020

FIGURE **1**

Document Path: U:\2047062400\gis\mxd_USFWS_section7_figures\2047062400_USFWS_Sec7_Fig01_Loc_Vic.mxd



0 500 1,000 1,500 Feet

1 inch = 800 feet

Proposed Action Items:

1. Rehabilitate and Resurface Airport Surfaces
2. Repair Runway Embankments
3. Construct a New Airport Access Road and New Bridge
4. Apply Dust Palliative to Airport Ground Traffic Surfaces
5. Replace Airport Lighting System
6. Improve or Re-Establish Airport Drainage
7. Construct New Snow Fence
8. Utilize Existing Gravel Bar(s) for Material Source Haul Material to Airport using Existing Barge Landing and Developed Roads.

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

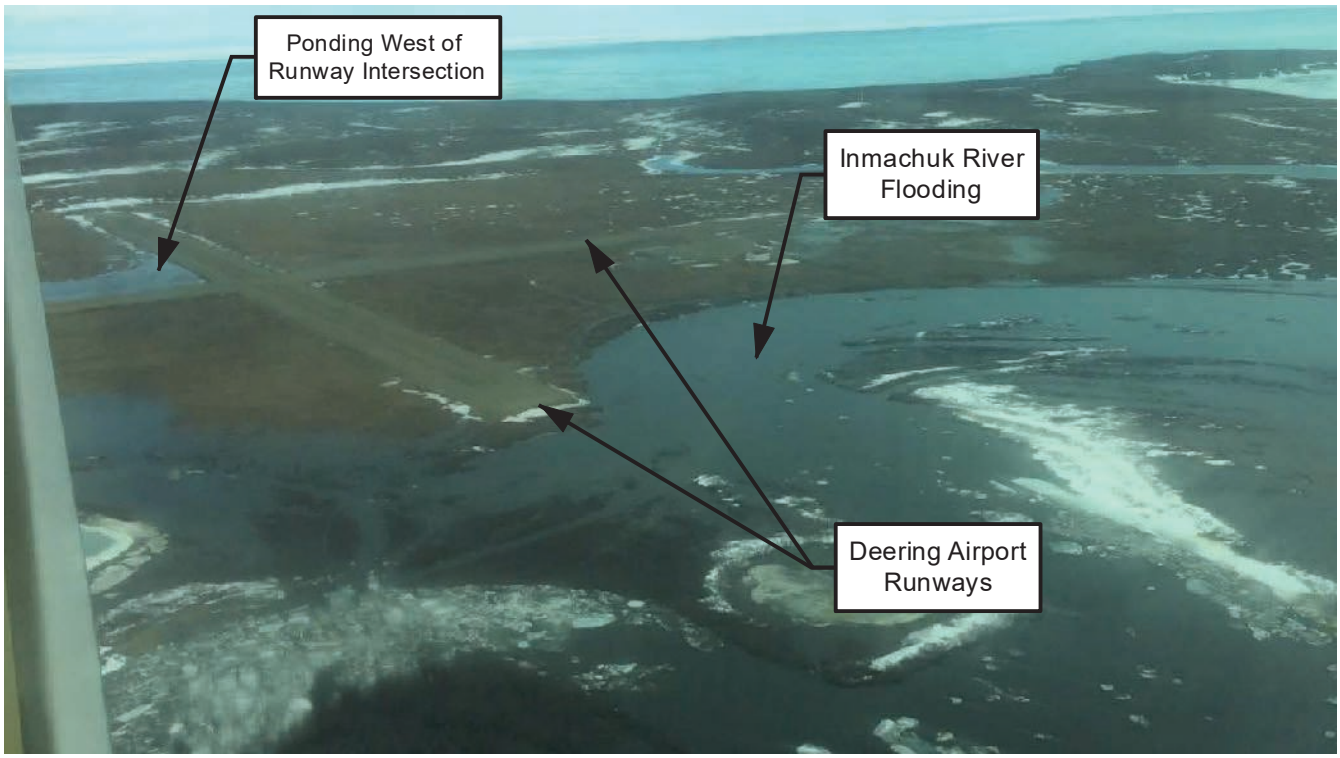
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Proposed Action Site Plan

DATE: October, 2020

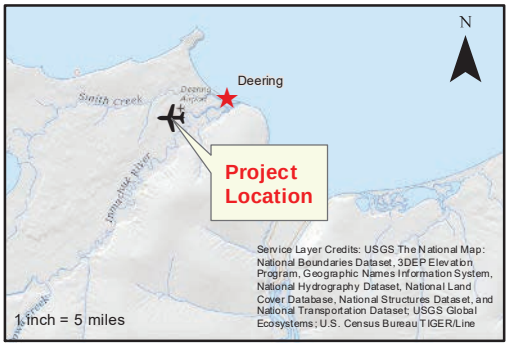
FIGURE **2**

Document Path: U:\2047062400\gis\mxd_USFWS_section7_figures\2047062400_USFWS_Sec7_Fig02_Site-Plan.mxd



Deering Airport, Spring 2016

Source: RFP 25-17-1-070 Attachment 1



STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

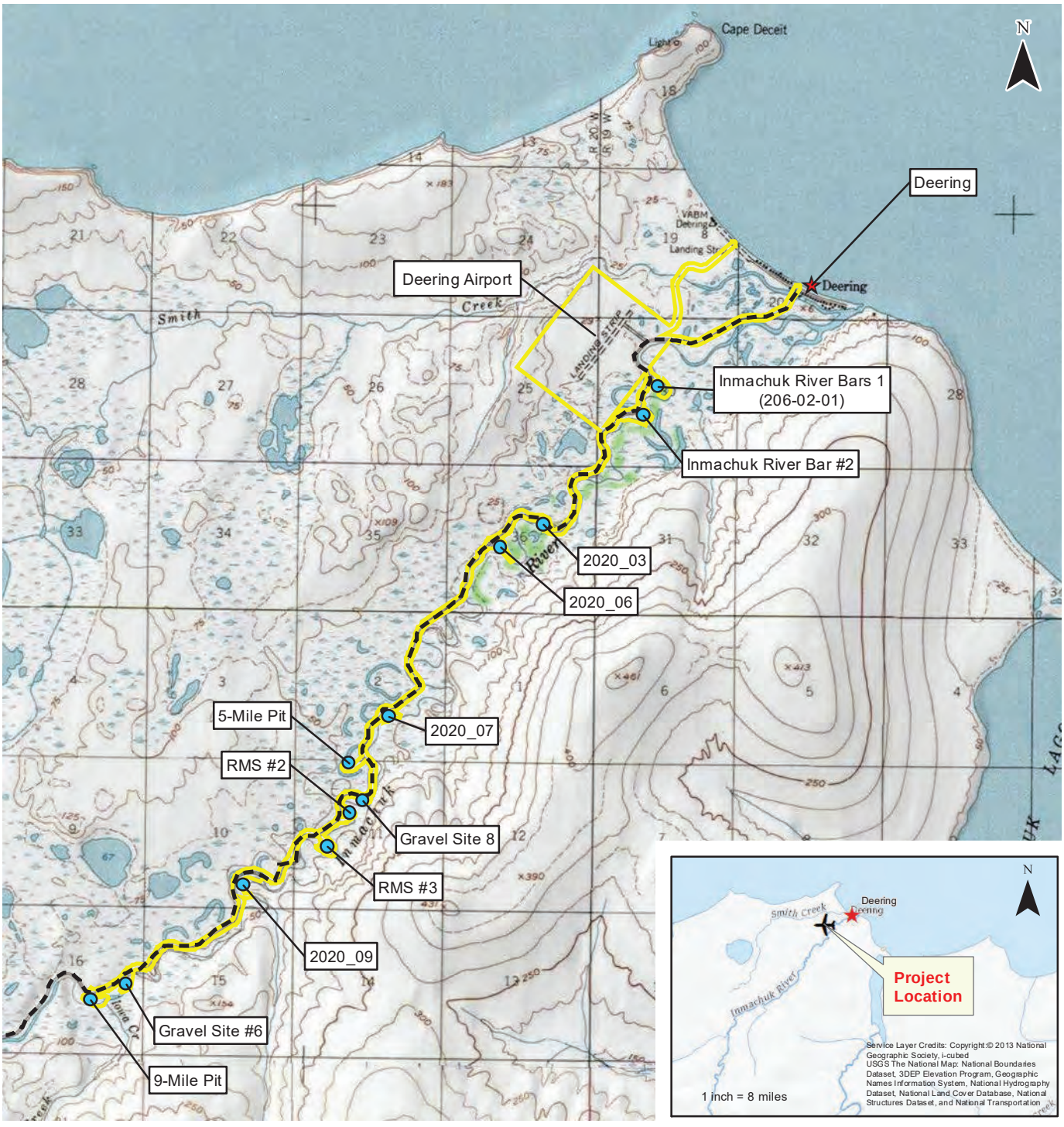
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Historic Flooding (Spring 2016)

DATE: October, 2020

FIGURE **3**

Document Path: R:\AK_CR_SECURE\2047062400_Deering\section106_figures\2047062400_Sec106_Fig02_Flood.mxd



Potential Material Sites/Staging Areas

Deering Road (Existing)

Study Area

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

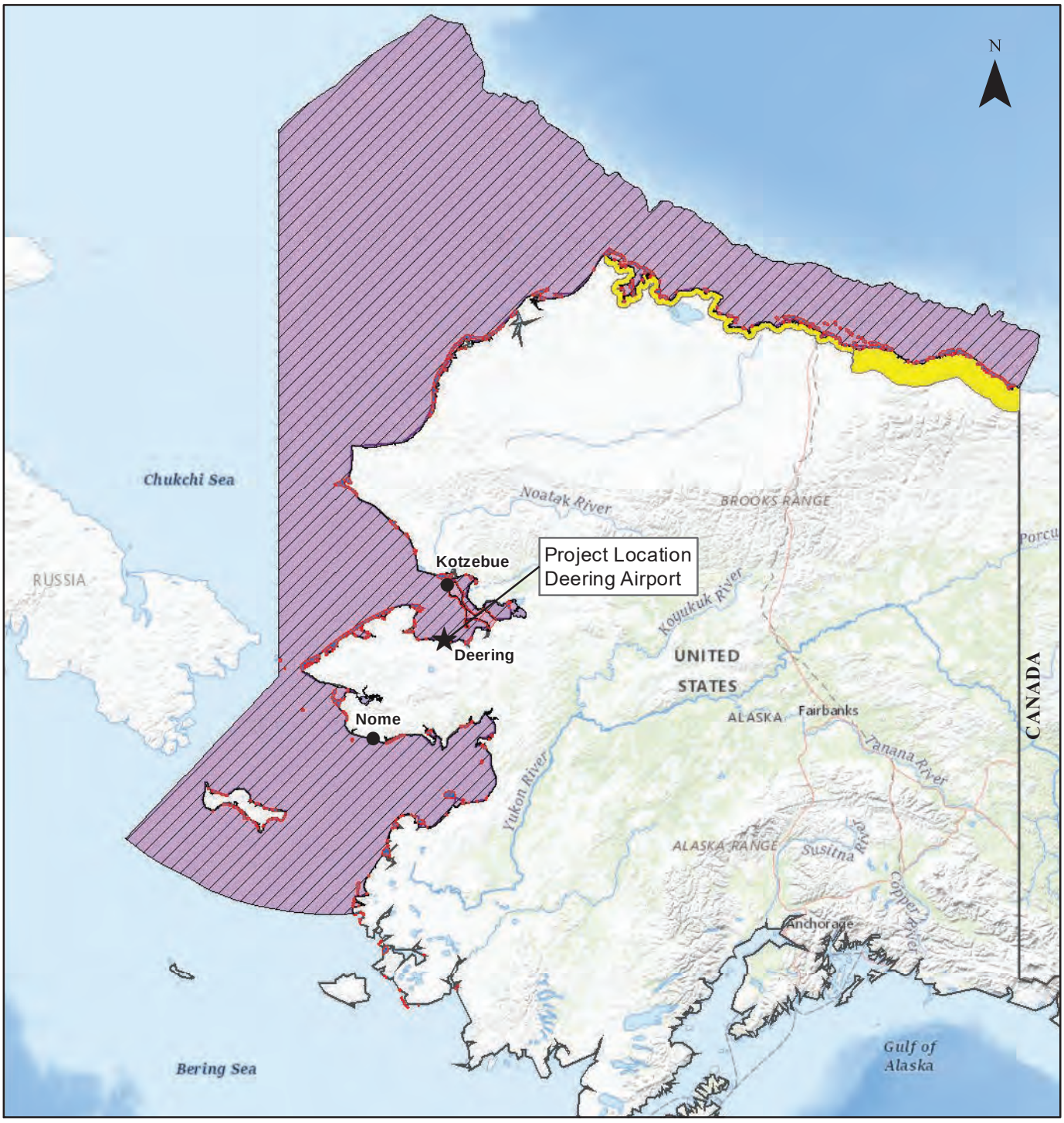
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Potential Material Sites

DATE: October, 2020

FIGURE **4**

Document Path: U:\2047062400\gis\mxd_USFWS_section7_figures\2047062400_USFWS_Sec7_Fig04_Mat_Source.mxd



Critical Habitat

- Polar Bear
- Denning Habitat
- Barrier Islands
- Feeding Critical Habitat
- No Disturbance Zone

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

USFWS Critical Habitat

DATE: October, 2020

FIGURE **5**

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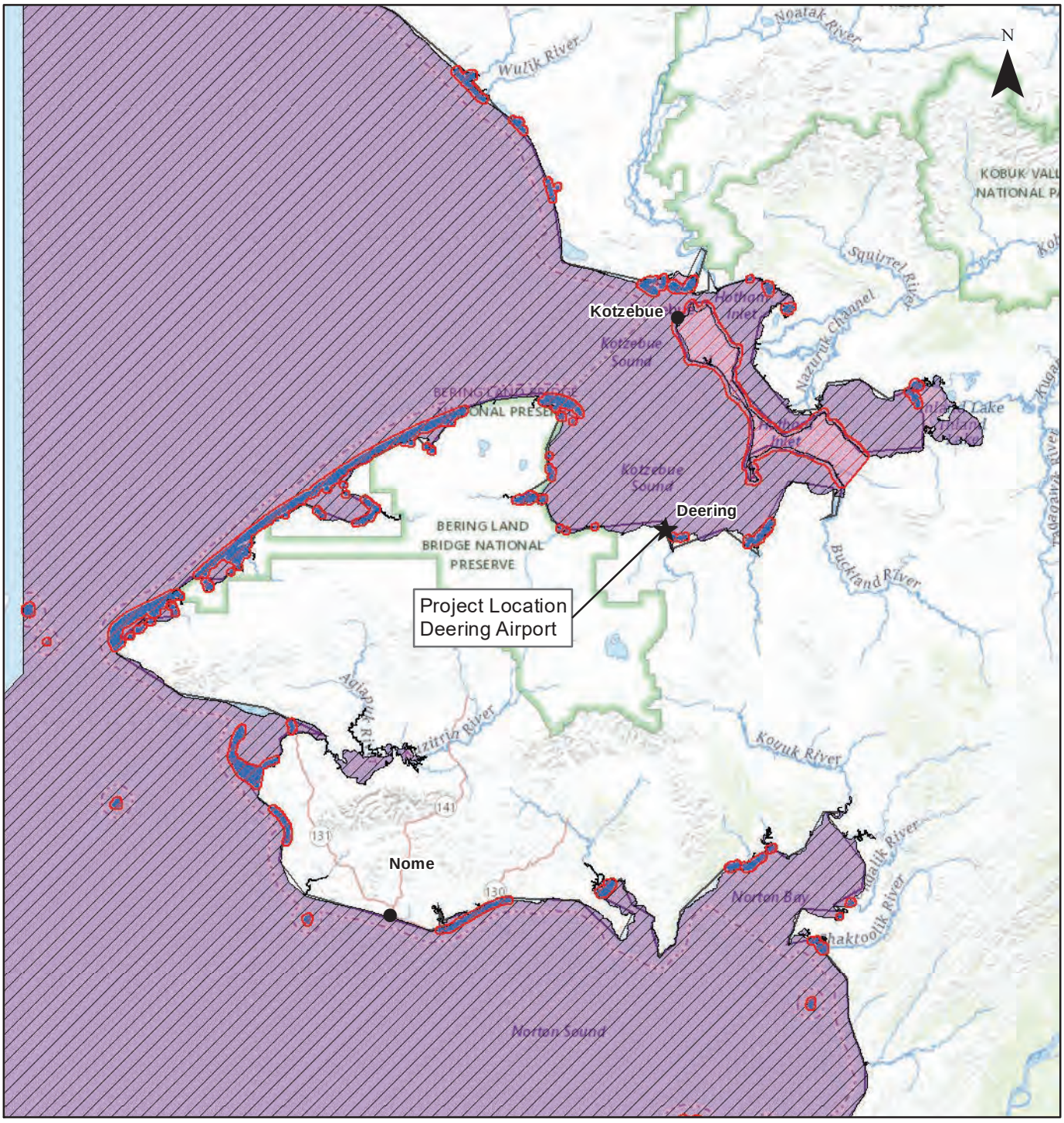

Critical Habitat

- Polar Bear
- Denning Habitat
- Barrier Islands
- Feeding Critical Habitat
- No Disturbance Zone

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

USFWS Critical Habitat
Project Location Area Detail

DATE: October, 2020

FIGURE **5a**

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USFWS Response

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Conservation Office
101 12th Avenue, Room 110
Fairbanks, Alaska 99701
December 11, 2020

Brett Nelson
Regional Environmental Manager
Alaska Department of Transportation and Public Facilities
Northern Region
Fairbanks, AK 99709-5316

Re: Deering Airport and Access Road Improvements
Section 7 Consultation-Endangered Species Act

Dear Mr. Nelson:

Thank you for inquiring about endangered and threatened species and critical habitats pursuant to section 7 of the Endangered Species Act of 1973 (ESA), as amended. The U.S. Fish and Wildlife Service (Service) has reviewed the proposed action to determine if it would adversely affect listed species under our jurisdiction. Three species listed as threatened under the ESA could occur in the project area: spectacled eiders (*Somateria fischeri*), Alaska-breeding Steller's eiders (*Polysticta stelleri*), and polar bears (*Ursus maritimus*). Designated polar bear critical habitat (i.e., sea ice habitat) occurs adjacent to the action area. However because there is no direct overlap between the proposed action and critical habitat, impacts to designated polar bear critical habitat are not discussed further herein.

THE PROPOSED ACTION

We understand the Alaska Department of Transportation and Public Facilities (DOT&PF) proposes improvements to the airport and access road at Deering, Alaska (Figures 1 and 2). We also understand the Federal Aviation Administration (FAA) has designated DOT&PF the non-federal representative to consult with the Service on FAA's behalf. Based on information provided by DOT&PF, the proposed work would include:

- Rehabilitation and resurfacing of the airport;
- Repairing the runway embankments;
- Constructing a new airport access road and new bridge over Smith Creek;
- Application of a dust palliative to airport traffic surfaces;
- Replacing the airport lighting system; and
- Improving or re-establishing sufficient airport drainage.

Existing gravel bars in the Inmachuk River would be used as material sources, and fill material and construction equipment would be mobilized to the project area using the existing community barge landing and developed roads. The proposed work is expected to begin in the winter of 2022/2023 and continue over a 1.5 – 2-year period.

THE ACTION AREA

The Action Area includes the vicinity of the existing airport, gravel access road, and material sources in the Inmachuk River near the community of Deering, Alaska (Figures 1-2).

EFFECTS OF THE ACTION ON LISTED SPECIES

This section includes an analysis of the effects of the proposed action on listed species. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

Listed eiders

The Service listed the spectacled eider on May 10, 1993 (58 FR 27474) and the Alaska-breeding population of the Steller's eider as threatened on June 11, 1997 (62 FR 31748). Although neither species currently nests in the region, low numbers of listed eiders may migrate through the project area. While migrating listed eiders may rest and feed within the action area, we expect disturbance to migrating listed eiders would be minor because these individuals can respond to human presence or disturbance by moving to a safe distance. Because listed eider density in the action area is very low and disturbance to migrating listed eiders would be so minor that injury or death is not expected, project effects to these birds would be insignificant.

Polar bears

The Service listed the polar bear as a threatened species under the ESA on May 15, 2008 (73 FR 28212). Polar bears may occasionally pass through or den in the area, although their density is very low and encounters are expected to be infrequent. Transient (non-denning) bears entering the action area could be disturbed by the presence of humans or equipment noise. However, we expect disturbance would be minor and temporary because transient bears would be able to respond to human presence or disturbance by departing the area. Furthermore DOT&PF would develop a polar bear interaction plan for personnel to follow in the unlikely event polar bears are encountered during the proposed activities. Additionally, for reference, the Service has included standard *Polar Bear Interaction Guidelines* (attached), which may inform development of an interaction plan, or substitute for a project-specific interaction plan.

Due to lack of preferred denning habitat, polar bears rarely den near Deering. Additionally, given the proximity of the proposed action to the community and existing levels of human disturbance, polar bears denning in the action area would be extremely unlikely.

Because 1) the density of polar bears in the action area is very low, 2) encounters with polar bears are expected to be infrequent, 3) behavioral effects to transient bears would be minor and temporary, 4) mitigation measures included in the attached interaction guidelines would minimize potential impacts in the event transient polar bears are encountered, and 5) polar bears denning within the action area would be extremely unlikely; we expect collective effects of the proposed action on polar bears would be insignificant.

CONCLUSION

The proposed action could temporarily disturb listed eiders and polar bears in the project area; however, due to low densities of these species, we expect the effects of disturbance to be insignificant. Therefore, the Service concurs the proposed action is not likely to adversely affect listed eiders or polar bears. Preparation of a Biological Assessment or further consultation under section 7 of the ESA is not necessary at this time. Thank you for the opportunity to comment on this project. If you need further assistance, please contact Kaithryn Ott at (907) 456-0277.

Sincerely,

Kaithryn Ott
Fish and Wildlife Biologist

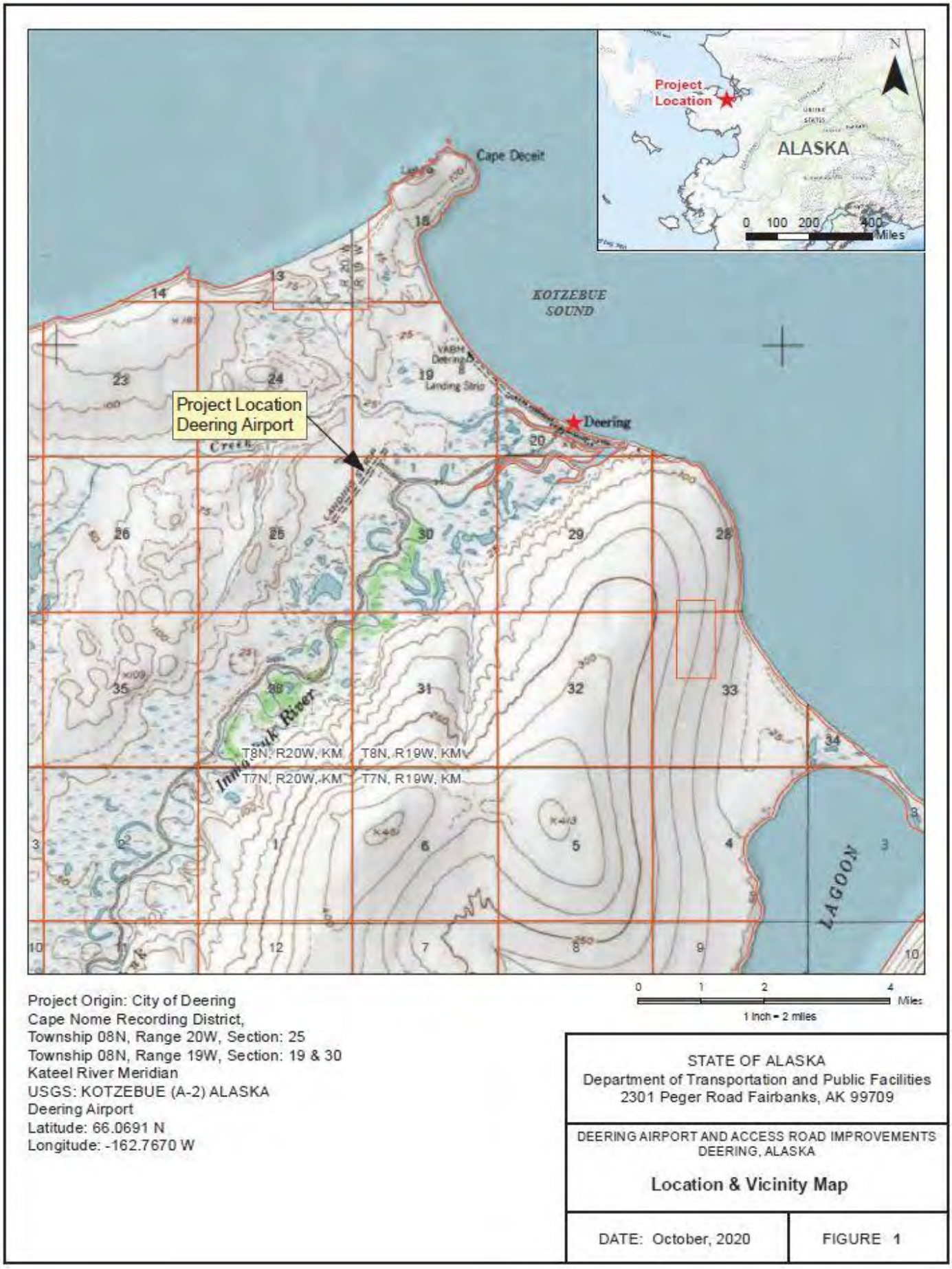

Figure 1. Location of the proposed action near the community of Deering, Alaska.

Figure 2. Detail of the proposed airport and access road improvements, including the new Smith Creek bridge near Deering, Alaska.

POLAR BEAR INTERACTION GUIDELINES
January 2020

These Polar Bear Interaction Guidelines were developed to help ensure that human activities in polar bear habitat are conducted in a manner that minimizes conflicts with polar bears. Polar bears are protected under the Marine Mammal Protection Act (MMPA), and were listed as a threatened species under the Endangered Species Act (ESA) in 2008. The MMPA and ESA both prohibit the "take" of polar bears without authorization, unless it is necessary for human safety. Take includes disturbance to polar bears, as well as injuring and killing polar bears.

Polar bears use sea ice, marine waters and terrestrial areas in northern and northwestern Alaska for resting, feeding, denning, and seasonal movements. They are most likely to be encountered within 25 miles of the coastline, especially along barrier islands during July-October. Polar bears may also be encountered farther inland, especially females during the denning period (November -April). Be aware that polar bears also occur within human settlements such as villages, camps, and work areas.

Polar bears react differently to human presence, depending on a variety of biological and environmental factors, as well as their previous experience with humans. Hungry (skinny) bears can be particularly dangerous. The general strategy for minimizing human-bear conflicts is to: 1) be prepared; 2) avoid encounters; and 3) know how to respond if an encounter occurs.

Unusual sightings or questions/concerns can be referred to Polar Bear Program staff at the Marine Mammals Management Office (MMM) at 1-800-362-5148; or to the Fairbanks Fish & Wildlife Field Office (FFWFO) at (907) 456-0499.

When traveling on land or sea ice:

- Be prepared. Have a human-bear safety plan that includes information on how to avoid and respond to bear encounters. Carry deterrents, and practice/know how to use them.

- Avoid surprise encounters. Travel in groups, make noise, and be vigilant - especially on barrier islands, in river drainages, along bluff habitat or ice leads/polynyas, near whale or other marine mammal carcasses, or in the vicinity of fresh tracks.

- Minimize attractants. Avoid carrying strongly scented attractants such as meat or fish while away from camp, or place them in air-tight containers to minimize odor transmission.

- Avoid disturbing denning bears. Between November and April, special care is needed to avoid disturbance of denning bears. If activities are to take place during that time period,

MMM should be contacted to determine if any additional mitigation is required. In general, activities are not permitted within one mile of known den sites.

When camping:

- Avoid high use areas. If possible, avoid camping or lingering in bear high-use areas such as river drainages, coastal bluffs and barrier islands, or along ice leads/polynyas.

- Minimize and prevent access to attractants. Store food, garbage, and other attractants in a manner that minimizes odors and prevents access by bears. Do not allow a bear(s) to receive a food reward in your camp; a rewarded bear is likely to become a problem for you or someone else in the future.

  - Use bear-resistant containers to store food, garbage, and other attractants. Containers should be approved and certified by the Interagency Grizzly Bear Committee as "bear-resistant" (see information at http://www.igbconline.org/html/bear-resistant-products).

  - Consider the use of an electric fence and/or alarm system as additional protection.

If a polar bear(s) is encountered:

- Prepare your deterrent(s). Do not run from or approach polar bears. If the bear is unaware of you, allow it to continue what it was doing before you encountered it. Move to safe shelter (e.g. vehicle or building) if available, and wait until it is safe to proceed.
- Group up. If no safe shelter is available, group up with others and stand positioned to allow for safe deployment of deterrents (e.g. firearm, pistol launcher, bear pepper spray) – until the bear leaves.
- Observe bear behavior. Polar bears that stop what they are doing to turn their head or sniff the air in your direction have likely become aware of your presence. These animals may exhibit various behaviors:

  - C*urious* polar bears typically move slowly, stopping frequently to sniff the air, moving their heads around to catch a scent, or holding their heads high with ears forward. They may also stand up.
  - *A threatened or agitated* polar bear may huff, snap its jaws together, stare at you (or the object of threat) and lower its head to below shoulder level, pressing its ears back and swaying from side to side.
  - A *predatory* bear may sneak up on an object it considers prey. It may also approach in a straight line at constant speed without exhibiting curious or threatened behavior.

If a polar bear(s) approaches you or your camp:

- Defend your group/camp. Any bear that approaches within range of your deterrents should be deterred. Stand your ground; do not run. Defend your group or camp,

increasing the intensity of your deterrence efforts as necessary. Be aware that lethal take of polar bears is permissible if such taking is imminently necessary in defense of human life. Defense of life kills must be reported to the Service within 48 hours.

- If bear makes physical contact, fight back. If deterrence/lethal efforts have failed and a polar bear attacks (makes physical contact), **do not "play dead"**. Fight back using any deterrents available, aiming fists or objects at the bear's nose and face.

When operating aircraft (including unmanned aircraft systems/drones):

Unless taking off from or landing at an airport/airstrip, pilots should maintain a minimum of 1,500 feet flight altitude and ½ mile horizontal distance from polar bears in the water, and on ice or land. Avoid circling or turning aircraft near polar bears.

When operating watercraft:

Be especially vigilant for swimming bears. If a swimming bear(s) is encountered, allow it to continue unhindered. Never approach, herd, chase, or attempt to lure swimming bear(s). Reduce speed when visibility is low and avoid sudden changes in travel direction.

NMFS Initiation Letter

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

NORTHERN REGION
Design & Engineering Services

2301 Peger Road
Fairbanks, AK 99709-5316
Main: 907-451-2273
TDD: 907-451-2363
dot.alaska.gov

December 10, 2020

Jon Kurland
Assistant Regional Administrator
National Marine Fisheries Service-Alaska Region
PO Box 21668
Juneau, AK 99802

Re: Deering Airport and Access Road Improvements
NFAPT00249/AIP: TBA
Request for Initiation of Informal Consultation under Section 7(a)(2) of the Endangered Species Act (ESA)

Dear Mr. Kurland:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is proposing to carry out the proposed project as described below. We request initiation of expedited informal consultation under Section 7(a)(2) of the Endangered Species Act for the Deering Airport and Access Road Improvements. We have determined that the proposed activity may affect, but is not likely to adversely affect bearded seal (*Erignathus barbatus*), ringed seal (*Phoca hispida*), western distinct population segment (DPS) Steller sea lion (*Eumetopias jubatus*), North Pacific right whale (*Eubalaena japonica*), Mexico DPS humpback whale (*Megaptera novaeangliae*), western North Pacific DPS humpback whale, fin whale (*Balaenoptera physalus*), sperm whale (*Physeter macrocephalus*), bowhead whale (*Balaena mysticetus*), or designated Steller sea lion or North Pacific right whale critical habitat. Our supporting assessment is provided below. We request your written concurrence if you agree with our determinations.

Project Description

The project purpose is to remedy Deering Airport deficiencies (Figures 1-3), bring the airport to current Federal Aviation Administration (FAA) design standards, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP). We expect work to commence in the winter of 2022/2023 and continue over a 1.5-2-year period.

DOT&PF in cooperation with FAA, proposes the following improvements at Deering Airport, which include the following actions:

- Rehabilitate and resurface the airport.
- Repair the runway embankments.
- Construct a new airport access road and new bridge over Smith Creek.
- Apply dust palliative to airport traffic surfaces.
- Replace the airport lighting system.

- Improve or re-establish sufficient airport drainage.
- Construct a snow fence.
- Use existing gravel bars of the Inmachuk River floodplain as material sources, and mobilize these materials and construction equipment to the airport construction area using the combined existing community barge landing and developed roads.

Project Specific Vessels and Barges:
Due to the availability of local material for this project, use of project specific barges that would transport material and equipment solely to and from the project area is not anticipated. It is anticipated that the contractor will utilize barges that regularly service communities in the region to deliver equipment or other materials needed to construct the project. We do not anticipate that barge activity specific to the project will occur in addition to traffic normally servicing the area. Barges that are contractually under project control would be considered *project specific*, and the operator would be required to follow specific mitigation measures as described throughout this assessment.

Although project specific barging is not anticipated, should it be required, examples may include such vessels as Crowley 455 Series, Labroy Ballastable Barges, or smaller.

The barges could use the existing community barge landing zone at Deering. Barges may be pulled into position by up to two accompanying tugboats, which are of similar type to the current models used during the annual resupply. Smaller vessels like the tugs associated with the proposed action have higher engine and propeller speeds than larger vessels or barges. The smaller vessel noise spectra peak around 300 Hz with a source level ranging from 145-170 dB re 1 µPa depending on if the tug is pulling an empty or loaded barge (Richardson 1995). Shipping sounds are often at source levels of 150-190 dB re 1 µPa at 1m (BOEM 2011).

Mitigation Measures
To minimize the risk of harm to marine species, the DOT&PF agrees to implement the following mitigation measures:

Project Specific Barges and Small Boats

1. If project specific barges are required, operators would be required to follow the best practices and safety regulations required of barge operators which regularly service the communities. In addition, barges that may provide some incremental project support but are not strictly under project control will be encouraged to avoid designated (73 FR 19000) North Pacific right whale critical habitat or maintain vigilant watch while under way in order to avoid vessel strikes to individuals of the Critically Endangered population frequenting the Bering Sea.

2. If project specific barges are required, during vessel transit, the project will follow 50 CFR 224.103 regulations and National Marine Fisheries Service (NMFS) marine mammal viewing guidelines. The vessel operator will not purposely approach:
    a. Within 874 yd (800 m) of a North Pacific right whale;
    b. Within 100 yd (91.4 m) of other marine mammals; and
    c. Within 3 nm (5.5 km) of a major Steller sea lion rookeries or haulouts where vessel safety requirements allow and/or where practicable.

3. If project specific barges are required and practicable vessel operation requires purposely approaching within 1.6 km (1 mi) of observed whales, except in emergency situations, the vessel operator will take

reasonable precautions to avoid potential interaction with the whales by taking one or more of the following actions, as appropriate:

- Reducing vessel speed to less than 5 kn (9.26 km/h) within 300 yards (274 m) of whales and within 874 yd (800 m) of North Pacific right whales;
- Operating the vessel(s) in a manner that avoids direct approach of whales;
- Operating the vessel(s) in a manner that avoids separating members of any group of whales from other members of that group;
    a. Operating the vessel(s) to avoid causing a whale of any species to make multiple changes in direction
    b. If the vessel is taken out of gear, vessel crew will check the waters immediately adjacent to the vessel(s) to ensure that no whales of any species will be injured when the propellers are re-engaged; and
    c. Avoiding sudden vessel speed changes or operating the vessel in a way that increases noise emitted unless necessary to avoid an imminent threat to vessel or crew safety.

4. Reducing vessel speed to less than 5 kn (9.26 km/h) within 300 yards (274 m) of pinnipeds.

5. If project specific barges are required, they will avoid transiting through identified (73 FR 19000) North Pacific right whale critical habitat. Protected Species Observers (PSOs) are not required if barges do not enter designated North Pacific right whale critical habitat. If transit through North Pacific right whale critical habitat occurs, the following will be implemented:
    a. Vessels will not make way in excess of 10 kn (18.52 km/h) while travelling within the boundaries of designated North Pacific right whale critical habitat.
    b. Dedicated PSOs will be on board all motorized vessels travelling through designated North Pacific right whale critical habitat. PSOs are not required if barges transit around North Pacific right whale critical habitat. PSOs will maintain a constant watch for all marine mammals from the bridge or other similar vantage point. PSOs will maintain direct contact with the vessel pilot, advising the pilot/operator of the position of all observed marine mammals as soon as they are observed.
    c. The vessel pilot/operator will maneuver vessels to the extent practicable to:
        i. Remain further than 874 yds (800 m) from North Pacific right whales,
        ii. Remain further than 100 yds from other marine mammal species, and
        iii. Avoid approaching any species of whale head-on.

6. Vessels will adjust speed and heading as needed to avoid disturbance of all marine mammals, provided vessel speed and heading adjustments are consistent with maintaining vessel safety.

PSO Requirements

7. A PSO must be able to accurately field identify and distinguish between species of Alaska marine mammals.

9. PSOs will be positioned such that the entire activity-specific monitoring zone is visible to them (e.g., they must be stationed on a platform, elevated promontory, vessel bridge, or similar vantage point).

10. PSOs will have the following to aid in determining the location of observed listed species, to take action if listed species enter the exclusion zone, and to record these events:
    a. Binoculars

b. Range finder
c. GPS
d. Compass
e. Two-way radio communication with construction foreman/superintendent or vessel pilot/operator. A logbook of all activities which will be made available to DOT&PF, and NMFS upon request.

11. The PSO will have no other primary duty other than to watch for and report on events related to marine mammals
.
12. The PSO will work in shifts lasting no longer than 4 hrs with at least a 1-hr break between shifts, and will not perform duties as a PSO for more than 12 hrs in a 24-hr period (to reduce PSO fatigue).

Monitoring Report

13. During months in which PSOs are used, a monitoring report will be submitted at the end of the month to NMFS. The reporting period for each monthly PSO report will be the entire calendar month, and reports will be submitted by close of business on the 15th day of the month following the end of the reporting period (e.g., the monthly report covering April 1 to 30, will be submitted to the NMFS by close of business on May 15).
    a. PSO report data will also include the following for each listed marine mammal observation (or "sighting event" if repeated sightings are made of the same animal[s]):
        i. Species, date, and time for each sighting event.
        ii. Number of animals per sighting event; and number of adults/juveniles/calves per sighting event (if determinable).
        iii. Primary, and, if observed, secondary behaviors of the marine mammals in each sighting event.
        iv. Geographic coordinates for the observed animals, with the position recorded by using the most precise coordinates practicable (coordinates must be recorded in decimal degrees, or similar standard (and defined) coordinate system).
        v. Time of the most recent project activity prior to marine mammal observation (for observations made during vessel transit, this value would be the same as the time of the marine mammal observation).
        vi. Environmental conditions as they existed during each sighting event, including Beaufort Sea state, weather conditions, visibility (km/mi), lighting conditions, and percent ice cover.

14. A final technical report will be submitted to NMFS within 90 days after the final day PSOs are required on the project. The report will summarize all activities associated with the proposed action in which a PSO was required. The final technical report will include items from the list above as well as the following:
    a. Summaries of monitoring efforts including total hours, coordinates of routes or locations observed each day (or other spatial-temporal representation of observer effort), and marine mammal locations.
    b. Summaries of various factors that may have influenced detectability of marine mammals (e.g., sea state, number of observers, fog, glare, percent ice cover, and other factors as determined by the PSOs).
    c. Species composition, occurrence, and locations of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), and group sizes.

d. Number of marine mammals observed (by species) during periods with and without project activities (and other variables that could affect detectability), such as:
    i. Initial marine mammal sighting distances versus project activity at time of sighting.
    ii. Observed marine mammal behaviors and movement types versus project activity at time of sighting.
    iii. Numbers of marine mammal sightings/individuals seen versus project activity that was ongoing at time of sighting.
    iv. Distribution of marine mammals around the action area versus project activity at time of sighting.

If Take Occurs

15. Though take is not authorized, if a listed marine mammal is taken (i.e., if a listed species is struck by a vessel), it must be reported to NMFS within one business day. PSO records for listed marine mammals taken by project activities must include:
    a. All the information that must be listed in the PSO report.
    b. Number of listed animals taken.
    c. The date and time of each take.
    d. The cause of the take (e.g., vessel strike, animal entered 50m exclusion zone).
    e. The time the animal(s) was first observed and last seen.
    f. If applicable, the time the animal(s) entered the exclusion zone, and, if known, the time it exited the zone.
    g. Mitigation measures implemented prior to and after the animal was taken.

Description of the Action Area

The Action Area is defined in the ESA regulations (50 CFR 402.02) as the area within which all direct and indirect effects of the project will occur. The Action Area is distinct from and larger than the project footprint because some elements of the project may affect listed species some distance from the project footprint. The Action Area, therefore, extends out to a point where no measurable effects from the project are expected to occur.

For this project, the Action Area surrounds the City of Deering (66.074783 °N, -162.717367°W), located on the southern coastline of Kotzebue Sound, and extends north to the community of Kotzebue (66.896985°N, -162.596546°W). It also extends along the coastline of the Seward Peninsula to the community of Nome (64.508519°N, -165.443433°W). Kotzebue and Nome are the most likely communities to serve as transportation hubs to the City of Deering. For marine mammal consultation, the Action Area also includes a barging route from Unimak Pass, if project specific barges are required (Figure 4).

NMFS Listed Species and Critical Habitat in the Action Area

Species that could be encountered include: bearded seal, ringed seal, western DPS Steller sea lions, western North Pacific DPS humpback whales, Mexico DPS humpback whales, fin whales, sperm whales, North Pacific right whales, and bowhead whales. In addition, if project specific barges are required, vessel traffic may occur within Steller sea lion or North Pacific right whale designated critical habitats. Table 1 provides a list of the listed species and critical habitats that maybe encountered as part of the project.

Table 1: National Marine Fisheries Service Endangered Species Act-Listed Species and Critical Habitat expected in the Action Area

Species	Stock	Habitat in the Action Area	ESA listing	Critical Habitat	MMPA listing
Bearded seal	Alaska (Beringia DPS)	Barging Route	Threatened	None Designated	Depleted
Ringed seal	Alaska	Barging Route	Threatened	None Designated	Depleted
Steller Sea Lions	Western DPS	Barging Route	Threatened	Designated	Depleted
North Pacific Right Whale	Eastern North Pacific	Barging Route	Endangered	Designated	Depleted
Humpback Whale	Western North Pacific DPS	Barging Route	Endangered	None Designated	Depleted
Humpback Whale	Mexico DPS	Barging Route	Threatened	None Designated	Depleted
Fin Whale	Northeast Pacific Stock	Barging Route	Endangered	None Designated	Depleted
Sperm Whale	North Pacific Stock	Barging Route	Endangered	None Designated	Depleted
Bowhead whale	Western Arctic	Barging Route	Endangered	None Designated	Depleted

Bearded Seals

Bearded seals are closely associated with sea ice – particularly during the critical life history periods related to reproduction and molting – and can be found in a broad range of ice types. They generally prefer ice habitat that is in constant motion and produces natural openings and areas of open water such as leads, fractures, and polynyas for breathing, hauling out on the ice, and access to water for foraging (Heptner et al. 1976a, Fedoseev 1984, Nelson et al. 1984). The bearded seal's effective range is generally restricted to areas where seasonal sea ice occurs over relatively shallow waters. Cameron et al. (2010) defined the core distribution of bearded seals as those areas over waters less than 500 m deep.

Additional information on bearded seals is available at: https://alaskafisheries.noaa.gov/pr/ice-seals.

Ringed Seals

Ringed seal activity is strongly influenced by sea ice (Kelly et al., 2010). Movement data suggests that ringed seals use the Chukchi Sea, and coastal waters year-round (ADF&G, 2015; Crawford et al., 2012; Von Duyke et al., 2017).

In winter, ringed seals excavate lairs in the snow above breathing holes for resting, pupping, and nursing young in both shorefast ice and pack ice. Snowdrifts of sufficient depth for birth lair formation and maintenance typically occur in deformed ice along pressure ridges or ice hummocks (Smith and Stirling 1975, Lydersen and Gjertz 1986, Kelly 1988, Furgal et al. 1996, Lydersen 1998). NMFS identified 54 cm as the minimum snowdrift depth because this was the average minimum depth reported in several studies of ringed seal lairs. Additional information on ringed seals is available at: https://alaskafisheries.noaa.gov/pr/ice-seals.

Western DPS Steller Sea Lions

The Steller sea lion was listed as a threatened species under the ESA on November 26, 1990 (55 FR 49204). In 1997, NMFS reclassified Steller sea lions into two distinct population segments (DPS) based on genetic studies and other information (62 FR 24345); at that time the eastern DPS was listed as threatened and the western DPS was listed as endangered. On November 4, 2013, the eastern DPS was removed from the endangered species list (78 FR 66139).

Information on Steller sea lion biology and habitat (including critical habitat) is available at: http://alaskafisheries.noaa.gov/pr/steller-sea-lions

The ability to detect sound and communicate underwater is important for a variety of Steller sea lion life functions, including reproduction and predator avoidance. NMFS categorizes Steller sea lions in the otariid pinniped functional hearing group, with an applied frequency range between 60 Hz and 39 kHz in water (NMFS 2016b).

Steller Sea Lion Critical Habitat

NMFS designated critical habitat for Steller sea lions on August 27, 1993 (58 FR 45269). In Alaska, designated critical habitat includes the following areas as described at 50 CFR §226.202.

1. Terrestrial zones that extend 3,000 feet (0.9 km) landward from each major haulout and major rookery.
2. Air zones that extend 3,000 feet (0.9 km) above the terrestrial zone of each major haulout and major rookery in Alaska.
3. Aquatic zones that extend 3,000 feet (0.9 km) seaward of each major haulout and major rookery in Alaska that is east of 144° W longitude.
4. Aquatic zones that extend 20 nm (37 km) seaward of each major haulout and major rookery in Alaska that is west of 144° W longitude.
5. Three special aquatic foraging areas: the Shelikof Strait area, the Bogoslof area, and the Seguam Pass area, as specified at 50 CFR §226.202(c).

If project specific barges are required and depending on the barging route, vessels may travel through Steller sea lion critical habitat, however vessels will not approach within 3 nm (5.5 km) of major Steller sea lion rookeries or haulouts.

North Pacific Right Whales

The North Pacific right whale was listed as an endangered species under the Endangered Species Conservation Act (ESCA) on June 2, 1970 (35 FR 8491). Congress replaced the ESCA with the ESA in 1973, and North Pacific right whales continued to be listed as endangered. NMFS later divided the listing into two separate endangered species: North Pacific right whales and North Atlantic right whales (73 FR 120424; March 6, 2008). Only the North Pacific right whale occurs in Alaska. Information on biology and habitat of the North Pacific right whale is available at: https://alaskafisheries.noaa.gov/pr/npr-whale and http://www.adfg.alaska.gov/index.cfm?adfg=rightwhale.main

The North Pacific right whale is distributed from Baja California to the Bering Sea with the highest concentrations in the Bering Sea, Gulf of Alaska, Okhotsk Sea, Kuril Islands, and Kamchatka area. They are primarily found in coastal or shelf waters, but sometimes travel into deeper waters. In the spring through the fall their distribution is dictated by the distribution of their prey. In the winter, pregnant females move to shallow waters in low latitudes to calve; the winter habitat of the rest of the population is unknown.

Right whales have been consistently detected in the southeastern Bering Sea around the localized area of designated critical habitat during spring and summer feeding seasons (Goddard and Rugh. 1998, Moore 2000, Moore et al. 2002, Zerbini et al. 2009, Rone et al. 2010, Rone et al. 2012). Of the 184 recent right whale sightings reported north of the Aleutian Islands, 182 occurred within the area designated as critical habitat in the Bering Sea.

Analysis of the data from bottom-mounted acoustic recorders deployed in October 2000, January 2006, May 2006, and April 2007 indicates that right whales remain in the southeastern Bering Sea from May through December with peak call detection in September (Munger and Hildebrand 2004, Stafford and Mellinger 2009). Recorders deployed from 2007 to 2013 have not yet been fully analyzed, but indicate the presence of right whales in the southeastern Bering Sea almost year-round, with a peak in August and a sharp decline in detections in early January (Bonnie Easley-Appleyard, NMFS Pers. Comm. Catherine Berchok, AFSC-NMML, 7600 Sand Point Way NE, Seattle, WA; unpublished data).

A study of right whale ear anatomy indicates a total possible hearing rage of 10 Hz to 22 kHz. NMFS categorizes right whales in the low-frequency cetacean functional hearing group, with an applied frequency range between 7 Hz and 35 kHz (NMFS 2016b).

Additional information on North Pacific right whales can be found at: https://alaskafisheries.noaa.gov/pr/npr-whale.

North Pacific Right Whale Critical Habitat

Critical habitat for the North Pacific right whale was designated in the eastern Bering Sea and in the Gulf of Alaska on April 8, 2008 (73 FR 19000, Figure 1). The physical or biological features (PBFs) deemed necessary for the conservation of North Pacific right whales include the presence of specific copepods (*Calanus marshallae*, *Neocalanus cristatus*, and *N. plumchris*), and euphausiids (*Thysanoessa Raschii*) which are primary prey items for the species, and physical and oceanographic forcing that promote high productivity and aggregation of large copepod patches.

If project specific barges are required and depending on the barging route, barges may either travel through, or alternatively around, North Pacific right whale critical habitat. Additional information on North Pacific right whale critical habitat can be found at: https://alaskafisheries.noaa.gov/pr/npr-whale.

Figure 1. North Pacific right whale critical habitat in the Bering Sea and Gulf of Alaska.

Western North Pacific And Mexico DPS Humpback Whales

The humpback whale was listed as endangered under the ESCA on December 2, 1970 (35 FR 18319). Congress replaced the ESCA with the ESA in 1973, and humpback whales continued to be listed as endangered. NMFS recently conducted a global status review and changed the status of humpback whales under the ESA. The Western North Pacific DPS (which includes a small proportion of humpback whales found in the Aleutian Islands, Bering Sea, and Gulf of Alaska) is listed as endangered; the Mexico DPS (which includes a small proportion of humpback whales found in the Aleutian Islands, Bering Sea, Gulf of Alaska, and Southeast Alaska) is listed as threatened, and the Hawaii DPS (which includes most humpback whales found in the Aleutian Islands, Bering Sea, Gulf of Alaska, and Southeast Alaska) is not listed (81 FR 62260; September 8, 2016). Critical habitat has not been designated for the Western North Pacific or Mexico DPSs.

The abundance estimate for humpback whales in the Bering Sea Aleutian Islands is estimated at 2,427 (CV= 0.2) animals, which includes whales from the Hawaii DPS (86.5%), Mexico DPS (11.3%), and Western North Pacific DPS (4.4%) (NMFS 2016a, Wade et al. 2016).

Unalaska Island is situated between Unimak and Umnak Passes, important humpback whale migration routes and feeding areas. Humpback whales tagged from August to September in Unalaska Bay, the waterbody adjacent to Captains Bay, were detected in Captains Bay (Kennedy et al. 2014). Given the documented abundance of humpback whales in and near Captains Bay, we assume humpback whales may be present during barging activities.

Additional information on humpback whale biology and natural history is available at:
http://www.nmfs.noaa.gov/pr/species/mammals/whales/humpback-whale.html
http://alaskafisheries.noaa.gov/pr/humpback
http://www.fisheries.noaa.gov/pr/sars/pdf/stocks/alaska/2015/ak2015_humpback-cnp.pdf

Fin Whales

The fin whale was listed as an endangered species under the ESCA on December 2, 1970 (35 FR 18319), and continued to be listed as endangered following passage of the ESA.

Fin whales produce a variety of low-frequency sounds in the 10 Hz to 0.2 kHz range. While there is no direct data on hearing in low-frequency cetaceans, the applied frequency range is anticipated to be between 7 Hz and 35 kHz (NMFS 2016b). Synthetic audiograms produced by applying models to X-ray computed tomography scans of a fin whale calf skull indicate the range of best hearing for fin whale calves to range from approximately 20 Hz to 10 kHz, with maximum sensitivities between 1 to 2 kHz (Cranford and Krysl 2015). Additional information on fin whale biology and habitat is available at:
http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/finwhale.htm
http://www.fisheries.noaa.gov/pr/sars/pdf/stocks/alaska/2014/ak2014_finwhale.pdf

Sperm Whales

The sperm whale was listed as an endangered species under the ESCA on December 2, 1970 (35 FR 18319), and continued to be listed as endangered following passage of the ESA.

Sperm whales are primarily found in deep waters and sightings of sperm whales in water less than 300 m (984 ft) are uncommon. If project specific barges are required, sperm whales may be encountered along the barging route of the proposed action.

Four of the most common threats cited for Southeast Alaska sperm whales are interactions with commercial fishing, whale watching, acoustic disturbance and ship strikes (NMFS 2010).

Neilson et al. (2012) found that out of the 89 defined whale strikes documented from 1978-2011 only one of those was a sperm whale and the fate of that whale is unknown. The level of effects on sperm whales from ship noise is not fully understood, but effects are expected to be similar to those described for humpback whales (NMFS 2010). From 2006-2010, there were 11 sperm whales mortalities reported in the Alaska Region Stranding Program (Allen and Angliss 2015). However, the cause of death could not be determined for any of these whales.

Sperm whales produce a variety of vocalizations ranging from 0.1 to 20 kHz (Weilgart and Whitehead 1993, Goold and Jones 1995, Møhl et al. 2003, Weir et al. 2007). Sperm whales are odontocetes (tooth whales) and are considered mid-frequency cetaceans with an applied frequency range of 150 Hz to 160 kHz (NMFS 2016b). The only direct measurement of hearing was from a young stranded individual from which auditory evoked potentials were recorded and indicated a hearing range of 2.5 to 60 kHz (Carder and Ridgway 1990).

Additional information on sperm whale biology and habitat is available at:
http://www.fisheries.noaa.gov/pr/species/mammals/whales/sperm-whale.html
http://www.fisheries.noaa.gov/pr/sars/pdf/stocks/alaska/2014/ak2014_spermwhale.pdf

Bowhead Whale

The bowhead whale was listed as endangered under the ESCA on December 2, 1970 (35 FR 18319), and continued to be listed as endangered following passage of the ESA. Bowhead whales in Alaskan waters comprise the Western Arctic stock. Western Arctic bowhead whales are distributed in seasonally ice-covered waters of the Arctic and near-Arctic, generally north of 60°N and south of 75°N. Critical habitat has not been designated for the bowhead whale.

The 2011 ice-based abundance estimate was 16,892 (CV = 0.2442) indicating a minimum population estimate for the Western Arctic stock of bowhead whales of 13,796 (Allen and Angliss 2015). The population may be approaching carrying capacity despite showing no sign of a slowing in the population growth rate (Brandon and Wade 2006). The current estimate for the annual rate of increase for this stock of bowhead whales is 3.2-3.4% (George et al. 2004, Schweder et al. 2010).

In Alaska, the majority of bowhead whales migrate annually from northern Bering Sea wintering areas (December to March), through the Chukchi Sea in spring (April to May), to the Beaufort Sea in waters off Alaska and Canada, where they spend much of the summer (June through early to mid-October) before returning to Bering Sea wintering areas in fall (September through December).

Bowhead whales have an extensive and varied acoustic repertoire that includes simple calls, call sequences, and complex songs. NMFS categorizes bowhead whales in the low-frequency cetacean functional hearing group, with an applied frequency range between 7 Hz and 35 kHz (NMFS 2016b). Inferring from their vocalizations, bowhead whales should be most sensitive to frequencies between 20 Hz-5 kHz, with maximum sensitivity between 100-500 Hz (Erbe 2002b).

Additional information on bowhead whale biology and habitat is available at:
http://www.fisheries.noaa.gov/pr/species/mammals/whales/bowhead-whale.html
http://www.nmfs.noaa.gov/pr/sars/pdf/stocks/alaska/2014/ak2014_bowhead.pdf

Effects of the Action

For purposes of the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is "not likely to adversely affect" listed species or critical habitat is that all of the effects of the action are expected to be insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and are those that one would not be able to meaningfully measure, detect, or evaluate, and should never reach the scale where take occurs. Discountable effects are those that are extremely unlikely to occur. Beneficial effects are contemporaneous positive effects without any adverse effects to the species.

Physical Presence

Temporary disturbance could occur during project specific barging (if project specific barging is required). An animal is disturbed when human activities alter an animal's natural behavior. A listed species could react to project activities by either investigating the vessel or project equipment or by being startled from project activities. Disturbance from project activities could temporarily increase stress levels or displace an animal from its habitat.

If project specific barges are required, they would likely travel along transit routes that are frequently used by many ocean-going vessels, and small vessels used within the area would travel slowly (< 10kn). Barges will not purposely approach marine mammals, and will implement the previously detailed mitigation measures in an effort to avoid marine mammals or minimize the impact of the physical presence of humans, vessels and equipment on marine mammals.

We have determined that the physical presence of humans, vessels and equipment associated with this project will be very small, and is therefore insignificant.

Acoustic Disturbance

Project specific barging

Underwater noise from barges may temporarily disturb or mask communication of marine mammals. Construction-specific vessels would create underwater noise, which may result in the disturbance or communication masking of communication.

Behavioral reactions from vessels can vary depending on the type and speed of the vessel, the spatial relationship between the animal and the vessel, the species, and the behavior of the animal prior to the disturbance from the vessel. The effects of boat noise on ringed, and bearded seal behavior are not well known. During the open water season in the Chukchi Sea, bearded and ringed seals are commonly observed close to vessels where received sound levels are low (e.g., (Harris et al. 2001, Moulton and Lawson 2002, Blees et al. 2010, Funk et al. 2010b). Funk et al. (2010a) noted among vessels operating in the Chukchi Sea where received sound levels were <120 dB, 40% of observed seals showed no response to a vessel's presence, slightly more than 40% swam away from the vessel, 5% swam towards the vessel, and the movements of 13% of the seals were unidentifiable. Bisson et al. (2013) reported a total of 938 seals observed during vessel-based monitoring of exploratory drilling activities by Shell in the Chukchi Sea during the 2012 open water season. The majority of seals (42%) responded to moving vessels by looking at the vessel, while the second most noted behavior was no observable reaction (38%). The majority of seals (58%) showed no reaction to stationary vessels, while looking at the vessel was the second most common behavioral response (38%). Other common reactions to both moving and stationary vessels included splashing and changing direction.

Studies on other seal species have shown displacement due to the presence of high levels of vessel traffic in the case of grey seals (Anderwald et al. 2013). Harbor seals are more likely to be disturbed and enter water from a haulout if vessels are within 150 m than when vessels are farther away (Mathews et al. 2016). Reductions in boat speeds have been shown to reduce the extent of underwater noise (e.g., Houghton et al. 2015).

It is expected that vessel noise from barges if project specific barges are required, are the only project specific activity that may result in potential impacts. If animals are exposed to vessel noise they may exhibit slight deflection from the noise source, engage in low level avoidance behavior, short-term vigilance behavior, or short-term masking behavior, but these behaviors are not likely to result in adverse consequences for the animals. Individual whale's past experiences with vessels appear to be important for individual whale response (Shell 2012). Vessels moving at slow speeds and avoiding rapid changes in direction may be tolerated by some species. Other individuals may deflect around vessels and continue on their migratory path. Humpback whale reactions to approaching boats are variable, ranging from approach to avoidance (Payne 1978). Whales have been known to tolerate slow-moving vessels within several hundred meters, especially when the vessel is not directed toward the animal and when there are no sudden changes in direction or engine speed (Richardson et al. 1995a).

We have also considered the likelihood that an increase in vessel traffic related to the activities associated with the proposed project would generally increase the risk of interactions between marine mammals and vessels in the action area, in addition to baseline conditions. The use of a barge would cause a small, localized, temporary increase in vessel traffic. When this project is completed, it will not result in an increased number of vessels in the Action Area.

If project specific barges are required, barging activities associated with the proposed action would be transitory and temporary. Barges will either avoid North Pacific right whale critical habitat or travel through critical habitat at speeds less than 10 kn (18.52 km/h) and with designated PSOs. Barges will not purposely approach a marine mammal within 100 yd (91.4m) or a North Pacific right whale within 874 yd (800 m). The vessel operator will follow 50 CFR 224.103 regulations and NMFS marine mammal viewing guidelines. Therefore, we conclude that acoustic disturbance from project specific barges and small vessels is insignificant.

Vehicle and Equipment Noise

Seals may be exposed to noise from construction vehicles and out of water equipment during barge landing activities. Construction may expose ringed and bearded seals of all life stages to vehicular noise. Ringed seals have acute in-air hearing (Sills et al. 2014; Sills et al. 2015). In-air hearing of bearded seals has not been studied, but due to the wide frequency range of their vocalizations (Risch et al. 2007), similar in-air hearing capabilities to ringed seals may be assumed. Vehicular noise would be audible to species present and may result in changes in behavior, although behavioral responses can vary widely depending on context and novelty of the noise source (Ellison et al. 2012; Richardson et al. 1995; Southall et al. 2007). Densities of basking ringed seals present in spring during active use of a proximate ice road did not vary between years (Moulton et al. 2005). Harwood et al. (2007) also report no avoidance of an ice road by ringed seals in the south-eastern Beaufort Sea, suggesting they were not displaced by in-air noise from the vehicular traffic. A contrasting study concluded that in-air noise from snow machines, when within 2.8 km, resulted in most ringed seals leaving their lairs (Kelly et al. 1988). Given the current presence of boat traffic in the open water season and the presence of snow machines during the winter, seals in the Action Area would have been previously exposed to noise. Seals would be expected to habituate to this new noise regime (Moulton et al. 2005), and no long-term changes of seal presence and behavior due to vehicle noise is expected.

Effects from in-air vehicle and out of water equipment noise are expected to be minimal given the current human presence in and near the community of Deering. Therefore, we conclude that acoustic disturbance from project specific vehicles and equipment is insignificant.

Physical Effects

Vessel Strike

Barges transiting the marine environment have the potential to collide with, or strike, marine mammals (Laist et al. 2001, Jensen and Silber 2003). From 1978-2012, there were at least 108 recorded whale-vessel collisions in Alaska, with the majority occurring in Southeast Alaska (Neilson et al. 2012). Among larger whales, humpback whales are the most frequent victims of ship strikes in Alaska, accounting for 86% of all reported collisions. Fin whales accounted for 2.8% of reported collisions, gray whales 0.9%, and sperm whale 0.9%. Six of the whales (5.6%) were unidentifiable and the remaining are of non-listed species. The probability of strike events depends on the frequency, speed, and route of the marine vessels, as well as distribution of marine mammals in the area. Vanderlaan and Taggart (2007) used observations to develop a model of the probability of lethal injury based upon vessel speed. They projected that the chance of lethal injury to a whale struck by a vessel is approximately 80 percent at vessel speeds over 15 kn (27.78 km/hr) and approximately 20 percent at 8.6 kt (15.92 km/hr).

Although risk of ship strike has not been identified as a significant concern for Steller sea lions (Loughlin and York 2000), the recovery plan for this species states that Steller sea lions may be more susceptible to ship strike mortality or injury in harbors or in areas where animals are concentrated [e.g., near rookeries or haulouts; (NMFS 2008)]. To minimize this risk, project vessels will not travel within 3 nm (5.5 km) of major Steller sea lion haulouts or rookeries.

Project specific barges will not approach any species of whales or pinnipeds within 100 yd (91.4m) or a North Pacific right whale within 874 yd (800 m). Project specific barges will either avoid North Pacific right whale designated critical habitat or alternatively travel through designated critical habitat at speeds less than 10 kn (18.52 km/h) and with designated PSOs. Therefore, we have determined that this action is extremely unlikely to result in a vessel strike of listed marine mammals and we conclude that these effects are discountable.

Conclusions

Based on the above, it is expected that potential effects of the proposed action would be insignificant and/or discountable once mitigation measures are in place. As a result, we have determined that the project may affect, but is not likely to adversely affect, any listed species or critical habitat under NMFS's jurisdiction. We have used the best scientific and commercial data available to complete this assessment. We request your concurrence with this determination.

Sincerely,

Brett D Nelson

Brett Nelson
Regional Environmental Manager; DOT&PF NR

Enclosures: Figure 1- Location & Vicinity May
Figure 2- Proposed Action Site Plan
Figure 3- Potential Material Sites
Figure 4- Action Area

lmc
Copy to: Preconstruction\Project File
cc: Jonathan Hutchinson, P.E., Engineering Manager
Bonnie Easley-Appleyard, NMFS
Greg Balogh, NMFS

Project Origin: City of Deering
Cape Nome Recording District,
Township 08N, Range 20W, Section: 25
Township 08N, Range 19W, Section: 19 & 30
Kateel River Meridian
USGS: KOTZEBUE (A-2) ALASKA
Deering Airport
Latitude: 66.0691 N
Longitude: -162.7670 W

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Location & Vicinity Map

DATE: October, 2020

FIGURE **1**

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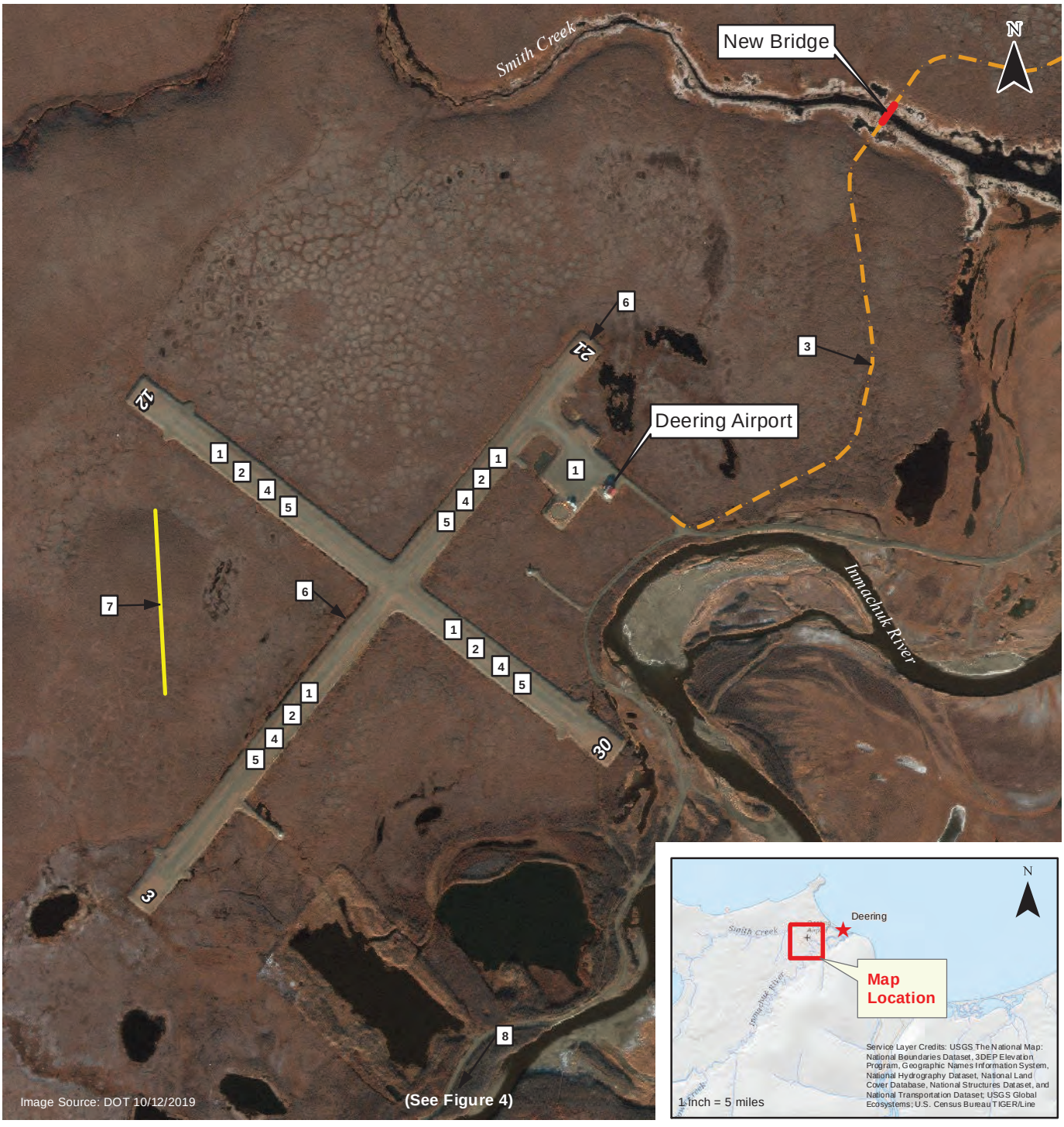


0 500 1,000 1,500 Feet

1 inch = 800 feet

Proposed Action Items:

1. Rehabilitate and Resurface Airport Surfaces
2. Repair Runway Embankments
3. Construct a New Airport Access Road and New Bridge
4. Apply Dust Palliative to Airport Ground Traffic Surfaces
5. Replace Airport Lighting System
6. Improve or Re-Establish Airport Drainage
7. Construct New Snow Fence
8. Utilize Existing Gravel Bar(s) for Material Source Haul Material to Airport using Existing Barge Landing and Developed Roads.

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

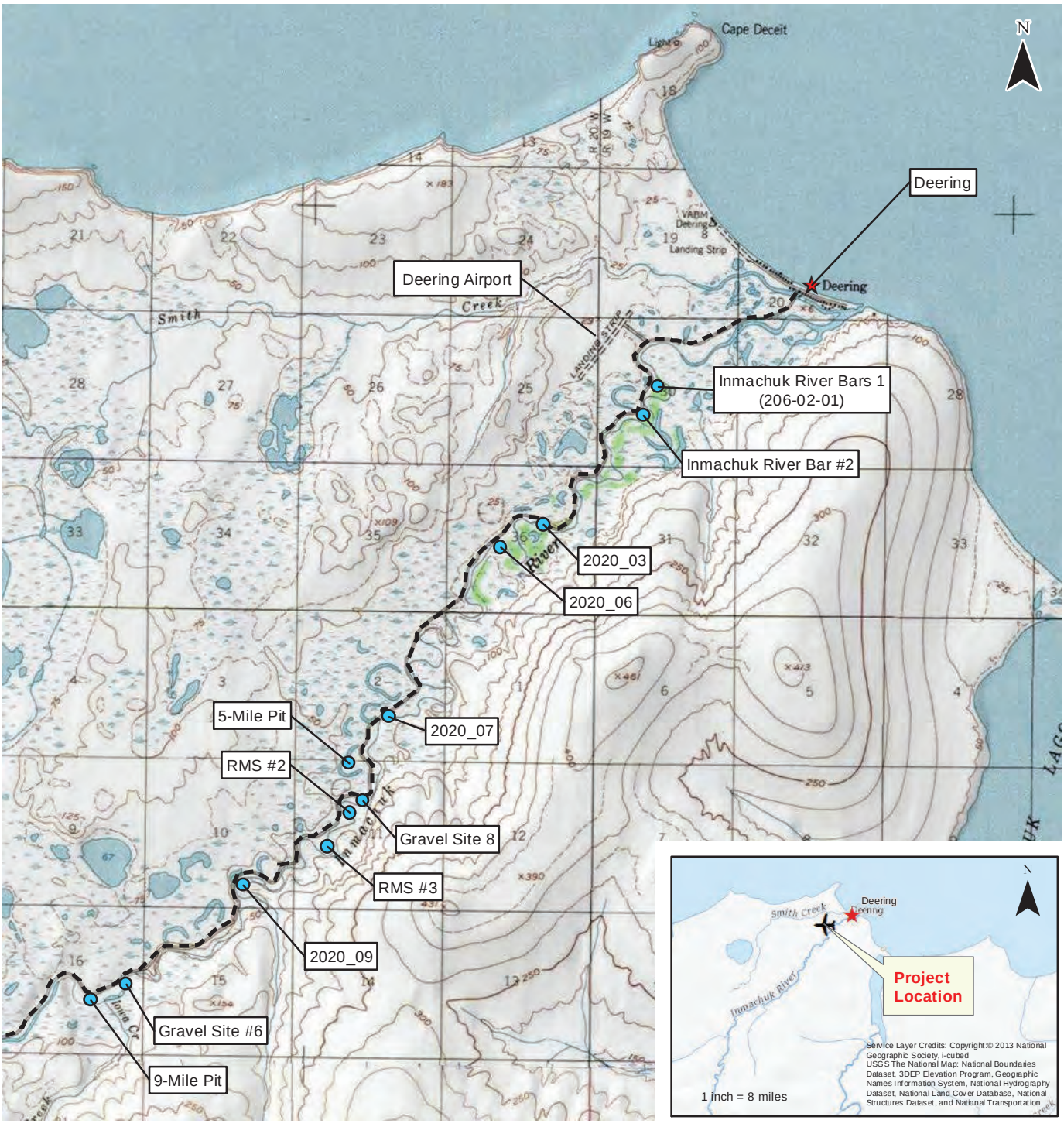
DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Proposed Action Site Plan

DATE: October, 2020

FIGURE **2**

Document Path: U:\2047062400\gis\mxd_NMFS_section7_figures\2047062400_NMFS_Sec7_Fig02_Site-Plan.mxd



0 1 2 Miles

1 inch = 1 miles

Potential Material Sites/Staging Areas

Deering Road (Existing)

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Potential Material Sites

DATE: October, 2020

FIGURE **3**

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Action Area

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

DEERING AIRPORT AND ACCESS ROAD IMPROVEMENTS
DEERING, ALASKA

Action Area

DATE: October, 2020

FIGURE **4**

Document Path: U:\2047062400\gis\mxd_NMFS_section7_figures\2047062400_NMFS_Sec7_Fig03_Action_Area.mxd

NMFS Initial Concurrence

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

February 22, 2021

Mr. Brett Nelson
Alaska Department of Transportation and Public Facilities
Northern Region
2301 Peger Road
Fairbanks, Alaska 99709-5316

Re: Deering Airport and Access Road Improvements, AKRO-2020-03390, NFAPT00249/AIP

Dear Mr. Nelson:

This letter responds to your request for concurrence from the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the proposal to conduct activities that bring the Deering Airport to current Federal Aviation Administration (FAA) design standards in Deering, Alaska, on the Seward Peninsula (Figure 1). The Alaska Department of Transportation and Public Facilities (AKDOT&PF) requested on behalf of FAA written concurrence that the proposed action may affect, but is not likely to adversely affect, the bearded seal (*Erignathus barbatus*), ringed seal (*Phoca hispida*), western distinct population segment (DPS) Steller sea lion (*Eumetopias jubatus*), North Pacific right whale (*Eubalaena japonica*), Mexico DPS humpback whale (*Megaptera novaeangliae*), western North Pacific DPS humpback whale, fin whale (*Balaenoptera physalus*), sperm whale (*Physeter macrocephalus*), Cook Inlet beluga whale (*Delphinapterus leucas*), or bowhead whale (*Balaena mysticetus*), or designated Steller sea lion, Cook Inlet beluga, or North Pacific right whale critical habitat. Based on our analysis of the information you provided to us, and additional literature cited below, NMFS concurs with your determination.

This letter underwent pre-dissemination review in compliance with applicable Data Quality Act guidelines. A complete administrative record of this consultation is on file in this office.

Consultation History
NMFS received your request for consultation on December 10, 2020. NMFS requested more information about the number of anticipated barge transits via email on December 15, 2020. The same day, AKDOT&PF responded with the additional information. NMFS initiated consultation on December 16, 2020.

Description of the Proposed Action
The activities associated with the proposed action to bring the airport to current FAA standards include rehabilitating and resurfacing the airport, repairing runway embankments, constructing a new airport access road and bridge, applying dust palliative to airport traffic surfaces, replacing the airport lighting surface, improving or re-establishing airport drainage, constructing a snow

fence, and using existing gravel bars of the Inmachuk River floodplain as material sources (Figure 1).

The portion of the project triggering this consultation is the use of barges to transport material and equipment to and from the project area. These barges may be vessels such as the Crowley 455 Series (400 ft length), Labroy Ballastable barges (≤330 ft length), or smaller, and may or may not need associated tug boats. The contractor is anticipated to utilize barges that regularly service communities in the region to deliver the equipment or other materials, however they may also utilize dedicated barges. For example, a contractor could utilize their own barge with equipment, or they could contract their shipping with a multi-purpose barge line. For this consultation, we assume three round trips between Anchorage and Deering with the understanding that there could be no project-specific barges utilized.

Armor rock would also be transported from Cape Nome to Deering (Figure 2). Up to 15 round trips of project-specific barges are anticipated to follow the coast of the Seward Peninsula for this purpose.

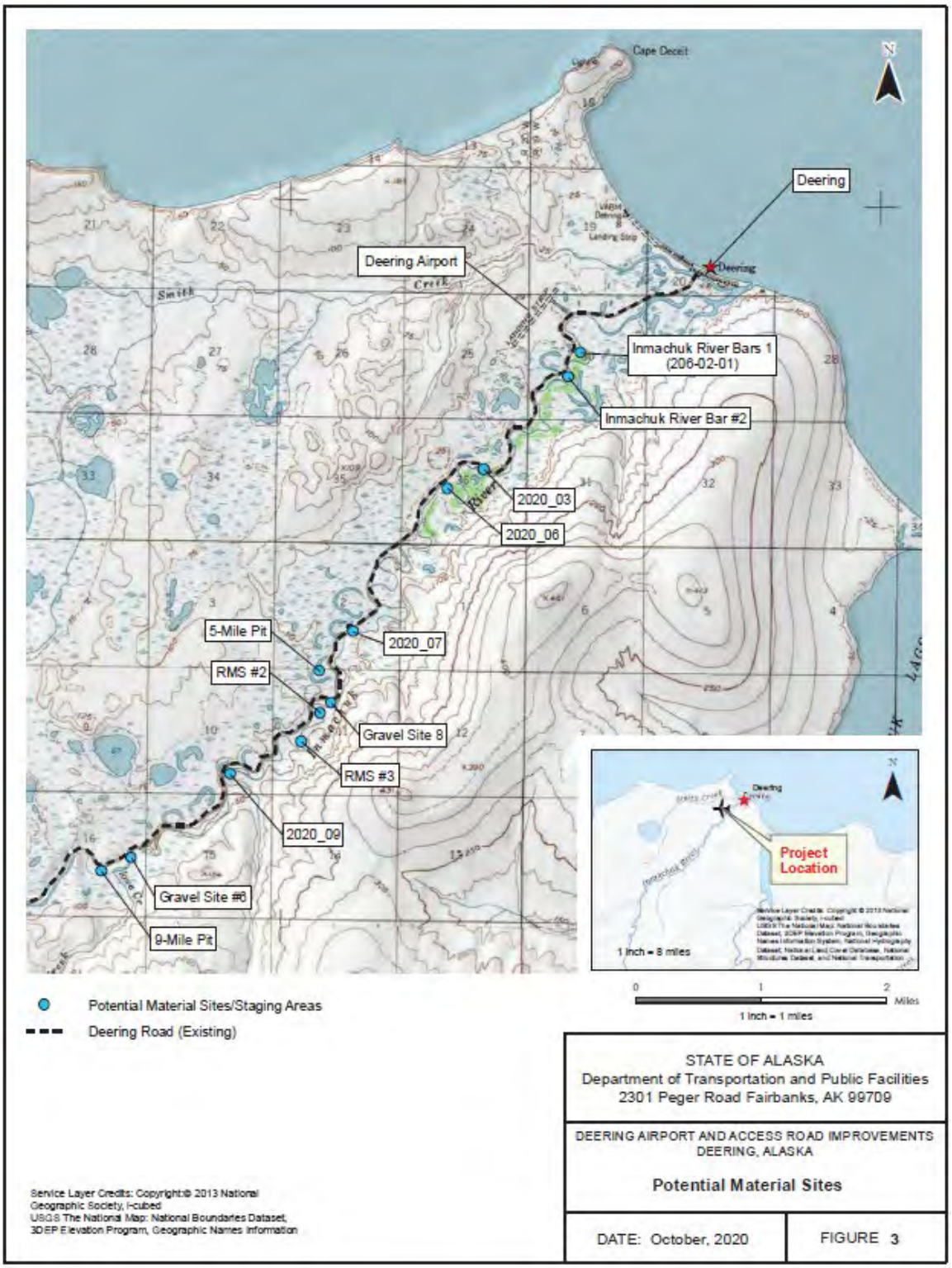


Figure 1. Deering Airport location in relation to the Inmachuk River Bars that will be used for fill material. The red star indicates Deering, where the barge landing is located. Source: AKDOT&PF consultation request, figure 3.

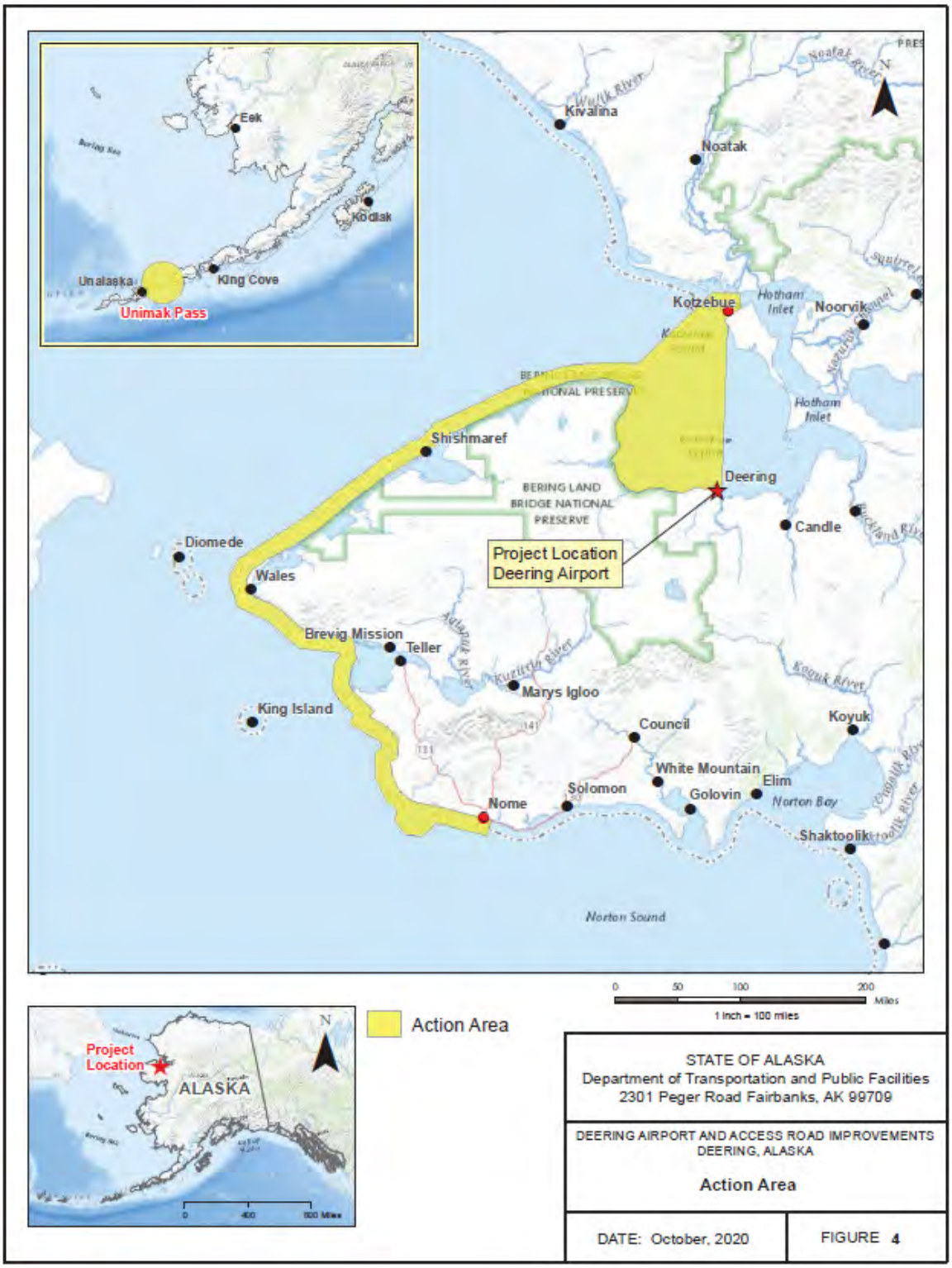


Figure 2. Depiction of the anticipated vessel route for project-specific barges from Nome to Deering, as well as the location in Unimak Pass near Dutch Harbor through which barges from Anchorage, AK may travel. Source: AKDOT&PF consultation request, figure 4.

Action Area
The action area is defined in the ESA regulations (50 CFR § 402.02) as the area within which all direct and indirect effects of the project will occur. The action area is distinct from and larger than the project footprint because some elements of the project may affect listed species some distance from the project footprint. The action area, therefore, extends out to a point where no measurable effects from the project are expected to occur.

For this project, the action area surrounds the City of Deering (66.074783 °N, -162.717367°W), located on the southern coastline of Kotzebue Sound, and extends north to the community of Kotzebue (66.896985°N, -162.596546°W). It also extends along the coastline of the Seward Peninsula to the community of Nome (64.508519°N, -165.443433°W). Kotzebue and Nome are the most likely communities to serve as transportation hubs to the City of Deering. The action area also includes a barging route from Unimak Pass and from Anchorage if project-dedicated barges are used to transport materials from Dutch Harbor or Anchorage to Deering (Figure 2).

Mitigation Measures
The AKDOT&PF informed NMFS via in their consultation request that the project would incorporate the following mitigation measures:

Project Specific Barges and Small Boats

1. If project specific barges are required, operators would be required to follow the best practices and safety regulations required of barge operators which regularly service the communities. In addition, barges that may provide some incremental project support but are not strictly under project control will be encouraged to avoid designated (73 FR 19000) North Pacific right whale critical habitat or maintain vigilant watch while under way in order to avoid vessel strikes to individuals of the critically endangered population.

2. If project specific barges are required, during vessel transit, the project will follow 50 CFR 224.103 regulations and NMFS marine mammal viewing guidelines. The vessel operator will not purposely approach:
   a. Within 874 yd (800 m) of a North Pacific right whale;
   b. Within 100 yd (91.4 m) of other marine mammals; and
   c. Within 3 nm (5.5 km) of a major Steller sea lion rookeries or haulouts where vessel safety requirements allow and/or where practicable.

3. If project specific barges are required, and practicable vessel operation requires purposely approaching within 1.6 km (1 mi) of observed whales, except in emergency situations, the vessel operator will take reasonable precautions to avoid potential interaction with the whales by taking one or more of the following actions, as appropriate:
   - Reducing vessel speed to less than 5 kn (9.26 km/h) within 300 yards (274 m) of whales and within 874 yd (800 m) of North Pacific right whales;
   - Operating the vessel(s) in a manner that avoids direct approach of whales;
   - Operating the vessel(s) in a manner that avoids separating members of any group of whales from other members of that group;

a. Operating the vessel(s) to avoid causing a whale of any species to make multiple changes in direction
b. If the vessel is taken out of gear, vessel crew will check the waters immediately adjacent to the vessel(s) to ensure that no whales of any species will be injured when the propellers are re-engaged; and
c. Avoiding sudden vessel speed changes or operating the vessel in a way that increases noise emitted unless necessary to avoid an imminent threat to vessel or crew safety.

4. Reducing vessel speed to less than 5 kn (9.26 km/h) within 300 yards (274 m) of pinnipeds.

5. If project specific barges are required, they will avoid transiting through identified (73 FR 19000) North Pacific right whale critical habitat. Protected Species Observers (PSOs) are not required if barges do not enter designated North Pacific right whale critical habitat. If transit through North Pacific right whale critical habitat occurs, the following will be implemented:
   a. Vessels will not make way in excess of 10 kn (18.52 km/h) while travelling within the boundaries of designated North Pacific right whale critical habitat.
   b. Dedicated PSOs will be on board all motorized vessels travelling through designated North Pacific right whale critical habitat. PSOs are not required if barges transit around North Pacific right whale critical habitat. PSOs will maintain a constant watch for all marine mammals from the bridge or other similar vantage point. PSOs will maintain direct contact with the vessel pilot, advising the pilot/operator of the position of all observed marine mammals as soon as they are observed.
   c. The vessel pilot/operator will maneuver vessels to the extent practicable to:
      i. Remain further than 874 yds (800 m) from North Pacific right whales,
      ii. Remain further than 100 yds from other marine mammal species, and
      iii. Avoid approaching any species of whale head-on.

6. Vessels will adjust speed and heading as needed to avoid disturbance of all marine mammals, provided vessel speed and heading adjustments are consistent with maintaining vessel safety.

PSO Requirements

7. PSOs will have the following prior experience and skills:
   a. be in good physical condition and be able to withstand harsh weather conditions for an extended period of time;
   b. must have vision correctable to 20-20;
   c. sufficiently conduct field observations and data collection according to assigned protocols;
   d. writing skills sufficient to prepare understandable reports of observations and technical skills to complete data entry forms accurately; and
   e. able to identify marine mammals in Alaskan waters by species and marine mammal behavior.
8. PSOs will complete project specific training prior to deployment to the project site (taught by

an experienced trainer following a course syllabus approved by NMFS). This course will include training in:

a. field identification of marine mammals and marine mammal behavior;
b. ecological information on Alaska's marine mammals and specifics on the ecology and management concerns of those marine mammals;
c. ESA and Marine Mammal Protection Act (MMPA) regulations;
d. mitigation measures outlined in the LOC;
e. proper equipment use;
f. methodologies in marine mammal observation and data recording and proper reporting protocols; and
g. identifying PSO roles and responsibilities.

9. A PSO must be able to accurately field identify and distinguish between species of Alaska marine mammals.

10. PSOs will be positioned such that the entire activity-specific monitoring zone is visible to them (e.g., they must be stationed on a platform, elevated promontory, vessel bridge, or similar vantage point).

11. PSOs will have the following to aid in determining the location of observed listed species, to take action if listed species enter the exclusion zone, and to record these events:
    a. Binoculars
    b. Range finder
    c. GPS
    d. Compass
    e. Two-way radio communication with construction foreman/superintendent or vessel pilot/operator. A logbook of all activities which will be made available to DOT&PF, and NMFS upon request.

12. The PSO will have no other primary duty other than to watch for and report on events related to marine mammals.

13. The PSO will work in shifts lasting no longer than 4 hrs with at least a 1-hr break between shifts, and will not perform duties as a PSO for more than 12 hrs in a 24-hr period (to reduce PSO fatigue).

Monitoring Report

14. During months in which PSOs are used, a monitoring report will be submitted at the end of the month to NMFS. The reporting period for each monthly PSO report will be the entire calendar month, and reports will be submitted by close of business on the 15th day of the month following the end of the reporting period (e.g., the monthly report covering April 1 to 30, will be submitted to the NMFS by close of business on May 15).
    a. PSO report data will also include the following for each listed marine mammal observation (or "sighting event" if repeated sightings are made of the same animal[s]):

i. Species, date, and time for each sighting event.
ii. Number of animals per sighting event; and number of adults/juveniles/calves per sighting event (if determinable).
iii. Primary, and, if observed, secondary behaviors of the marine mammals in each sighting event.
iv. Geographic coordinates for the observed animals, with the position recorded by using the most precise coordinates practicable (coordinates must be recorded in decimal degrees, or similar standard (and defined) coordinate system).
v. Time of the most recent project activity prior to marine mammal observation (for observations made during vessel transit, this value would be the same as the time of the marine mammal observation).
vi. Environmental conditions as they existed during each sighting event, including Beaufort Sea state, weather conditions, visibility (km/mi), lighting conditions, and percent ice cover.

15. A final technical report will be submitted to NMFS (Table 1) within 90 days after the final day PSOs are required on the project. The report will summarize all activities associated with the proposed action in which a PSO was required. The final technical report will include items from the list above as well as the following:
    a. Summaries of monitoring efforts including total hours, coordinates of routes or locations observed each day (or other spatial-temporal representation of observer effort), and marine mammal locations.
    b. Summaries of various factors that may have influenced detectability of marine mammals (e.g., sea state, number of observers, fog, glare, percent ice cover, and other factors as determined by the PSOs).
    c. Species composition, occurrence, and locations of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), and group sizes.
    d. Number of marine mammals observed (by species) during periods with and without project activities (and other variables that could affect detectability), such as:
        i. Initial marine mammal sighting distances versus project activity at time of sighting.
        ii. Observed marine mammal behaviors and movement types versus project activity at time of sighting.
        iii. Numbers of marine mammal sightings/individuals seen versus project activity that was ongoing at time of sighting.
        iv. Distribution of marine mammals around the action area versus project activity at time of sighting.
    e. Date and time of entry to and exit from North Pacific right whale critical habitat.

If Take Occurs

16. Though take is not authorized, if a listed marine mammal is taken (e.g., if a listed species is struck by a vessel), it must be reported to NMFS (Table 1) within one business day. PSO records for listed marine mammals taken by project activities must include:
    a. All the information that must be listed in the PSO report.
    b. Number of listed animals taken.

c. The date, time and location of each take.
d. The cause of the take (e.g., vessel strike, animal entered 50m exclusion zone).
e. The time the animal(s) was first observed and last seen.
f. If applicable, the time the animal(s) entered the exclusion zone, and, if known, the time it exited the zone.
g. Mitigation measures implemented prior to and after the animal was taken.

Table 1. Summary of Agency Contact Information

Topic	**Contact Information**
NMFS ESA Section 7 Consultation	NMFS Alaska Regional Office Protected Resources Division *Alaska Region Section 7 Coordinator:* Greg Balogh, greg.balogh@noaa.gov 907-271-3023
PSO Monitoring Reports & Data Submittal	AKR.section7@noaa.gov
Reporting of Stranded, Injured, or Dead Marine Mammals	NMFS Alaska Region 24-hr Stranding Hotline 877-925-7773
Oil Spill & Hazardous Materials Response	U.S. Coast Guard National Response Center: 1-800-424-8802 AND AKRNMFSSpillResponse@noaa.gov
Illegal Activities *(not related to project activities; e.g., feeding, unauthorized harassment, or disturbance to marine mammals)*	NMFS Office of Law Enforcement (AK Hotline): 1-800-853-1964
Unauthorized Take by Project Activities	NMFS Alaska Regional Office 907-586-7236 *AND* *Alaska Region Section 7 Coordinator:* Greg Balogh, greg.balogh@noaa.gov 907-271-3023

Listed Species and Critical Habitat

The following table contains the species potentially affected by this proposed action.

Table 2. NMFS ESA-listed species, potentially affected by this proposed action, and their ESA status.

Listed entity	ESA listing
Beringia DPS bearded seal	Threatened
Arctic subspecies ringed seal	Threatened
Western DPS Steller sea lions	Threatened
North Pacific right whale	Endangered
Western North Pacific DPS humpback whale	Endangered
Mexico DPS humpback whale	Threatened
Fin whale	Endangered
Sperm whale	Endangered
Bowhead whale	Endangered
Cook Inlet DPS beluga whale	Endangered

Beringia DPS Bearded Seal

There are two recognized subspecies of the bearded seal: *E. b. barbatus*, often described as inhabiting the Atlantic sector (Laptev, Kara, and Barents seas; North Atlantic Ocean; and Hudson Bay (Rice 1998)); and *E. b. nauticus*, which inhabits the Pacific sector (remaining portions of the Arctic Ocean and the Bering and Okhotsk seas (Heptner et al. 1976; Manning 1974; Ognev 1935; Scheffer 1958)). Based on evidence for discreteness and ecological uniqueness, NMFS concluded that the *E. b. nauticus* subspecies consists of two DPSs: the Okhotsk DPS in the Sea of Okhotsk, and the Beringia DPS, encompassing the remainder of the range of this subspecies (75 FR 77496; December 10, 2010). NMFS listed the Beringia DPS and Okhotsk DPS of bearded seals as threatened under the ESA on December 28, 2012 (77 FR 76740). Only the Beringia DPS is found in U.S. waters (and the action area), and under the MMPA this portion of the Beringia DPS is recognized by NMFS as a single Alaska stock.

A reliable population estimate is not available (Muto et al. 2020). Using a limited sub-sample of data collected from the U.S. portion of the Bering Sea in 2012, an abundance estimate was calculated to be 301,836, but Muto et al. 2020 calculated a minimum population estimate of 273,676 bearded seals in the U.S. Bering Sea.

Critical habitat has not been designated for the Beringia DPS bearded seal.

Information on bearded seal biology and habitat is available at:
https://www.fisheries.noaa.gov/species/bearded-seal
https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-211.pdf

https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region

Arctic Ringed Seal

Under the MMPA, NMFS recognizes one stock of Arctic ringed seals, the Alaska stock, in U.S. waters. This stock is part of the Arctic ringed seal subspecies. The Arctic ringed seal subspecies was listed as threatened under the ESA on December 28, 2012, primarily due to expected impacts within the foreseeable future on the population from declines in sea ice and snow cover stemming from climate change (77 FR 76706). Critical habitat has not been designated for the Arctic ringed seal. (Muto et al. 2020)

The population of Arctic ringed seals is estimated to be 171,418 using a limited sub-sample of data collected from the U.S. portion of the Bering Sea in 2012 (Muto et al. 2020). It did not account for availability bias and did not include ringed seals in the shorefast ice zone. A minimum population estimate was calculated by Muto et al. (2020) to be 158,507 ringed seals in the U.S. Bering Sea.

Information on ringed seal biology and habitat is available at:
https://www.fisheries.noaa.gov/species/ringed-seal
https://www.fisheries.noaa.gov/resource/document/status-review-ringed-seal-phoca-hispida-2010
https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region

Western DPS Steller Sea Lions and their Critical Habitat

The Steller sea lion was listed as a threatened species under the ESA on November 26, 1990 (55 FR 49204). On May 5, 1997, NMFS reclassified Steller sea lions into two distinct population segments (DPS) based on genetic studies and other information (62 FR 24345); at that time the eastern DPS was listed as threatened and the western DPS was listed as endangered. On November 4, 2013, the eastern DPS was removed from the endangered species list (78 FR 66140). Information on Steller sea lion biology and habitat (including critical habitat) is available at: https://www.fisheries.noaa.gov/species/steller-sea-lion.

The barges may pass several western DPS Steller sea lion haulouts and rookeries depending on the beginning location of the barge (e.g. Anchorage or Dutch Harbor). The barges originating from or travelling to Anchorage or Dutch Harbor may also transit through the Bogoslof foraging area (Figure 3).

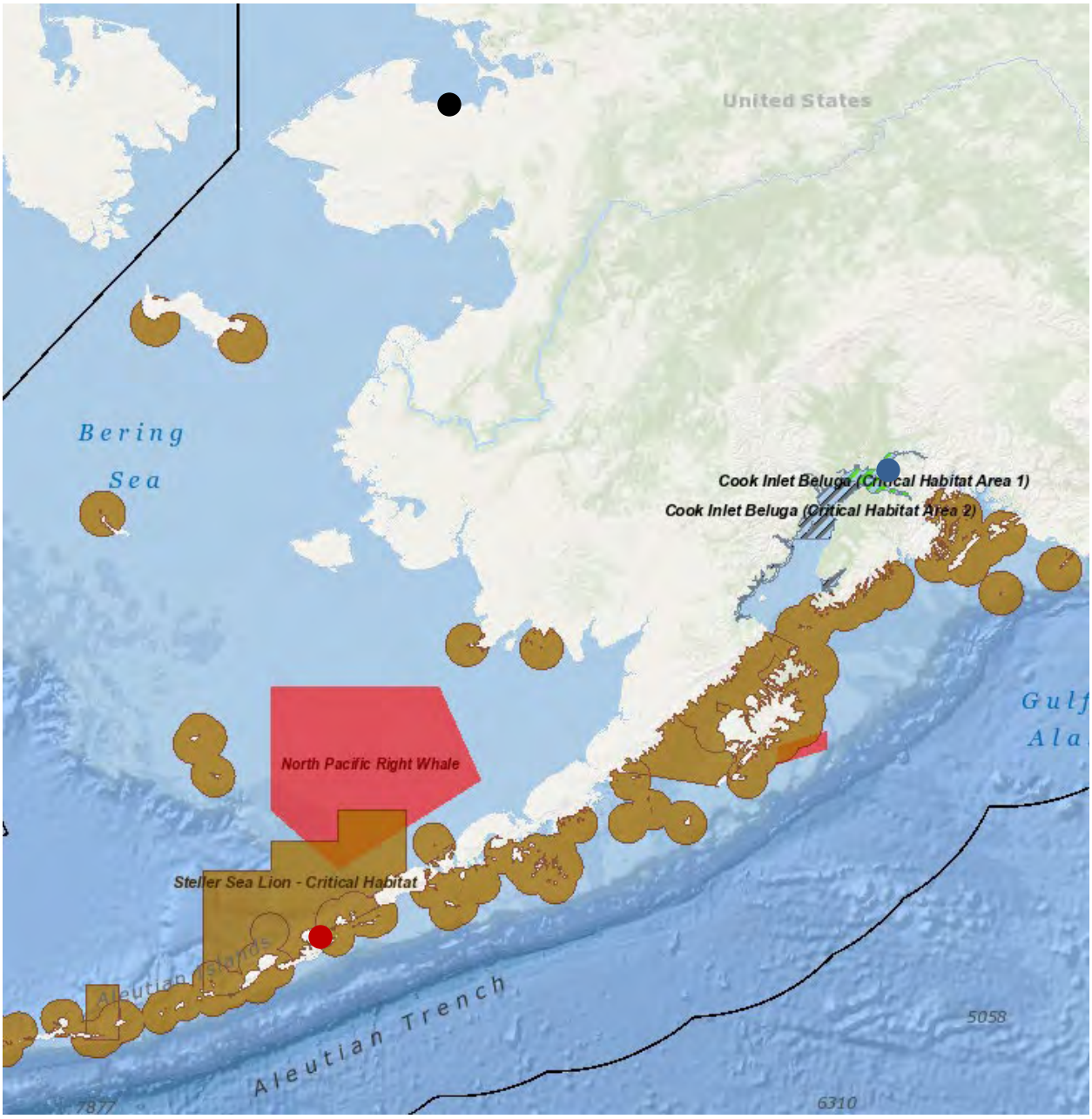


Figure 3. Critical habitats for Steller sea lions (brown), Cook Inlet beluga (hatched green, hatched blue), and North Pacific right whale (red) in the Bering Sea through which a project-dedicated barge may transit. The black dot at the top depicts Deering; the red dot at the bottom is Dutch Harbor; the blue dot center right is Anchorage.

The ability to detect sound and communicate underwater is important for a variety of Steller sea lion life functions, including reproduction and predator avoidance. NMFS categorizes Steller sea lions in the otariid pinniped functional hearing group, with an applied frequency range between 60 Hz and 39 kHz in water (NMFS 2018).

NMFS designated critical habitat for Steller sea lions on August 27, 1993 (58 FR 45269) (Figure 3). In Alaska, designated critical habitat includes the following areas as described at 50 CFR § 226.202:

1. Terrestrial zones that extend 3,000 feet (0.9 km) landward from each major haulout and major rookery in Alaska.
2. Air zones that extend 3,000 feet (0.9 km) above the terrestrial zone of each major haulout and major rookery in Alaska.
3. Aquatic zones that extend 3,000 feet (0.9 km) seaward of each major haulout and major rookery in Alaska that is east of 144° W longitude.
4. Aquatic zones that extend 20 nm (37 km) seaward of each major haulout and major rookery in Alaska that is west of 144° W longitude.
5. Three special aquatic foraging areas: the Shelikof Strait area, the Bogoslof area, and the Seguam Pass area, as specified at 50 CFR § 226.202(c).

Western North Pacific and Mexico DPSs Humpback Whales

The humpback whale was listed as endangered under the Endangered Species Conservation Act (ESCA) on June 2, 1970 (35 FR 8491 (baleen whales listing; 35 FR 18319, December 2, 1970 (humpback whale listing)). Congress replaced the ESCA with the ESA in 1973, and humpback whales continued to be listed as endangered. NMFS conducted a global status review that changed the status of humpback whales under the ESA and divided the species into 14 distinct population segments (DPS), three of which occur in waters of Alaska. The Western North Pacific DPS (which includes a small proportion of humpback whales found in the Aleutian Islands, Bering Sea, and Gulf of Alaska) is listed as endangered; the Mexico DPS (which includes a small proportion of humpback whales found in the Aleutian Islands, Bering Sea, Gulf of Alaska, and Southeast Alaska) is listed as threatened; and the Hawaii DPS (which includes most humpback whales found in the Aleutian Islands, Bering Sea, Gulf of Alaska, and Southeast Alaska) is not listed (81 FR 62260; September 8, 2016). Critical habitat has not been designated for the Western North Pacific or Mexico DPSs.

The bias-corrected population estimate of the Western North Pacific DPS is 20,800 humpback whales (Muto et al. 2020). The estimate of abundance for humpback whales in California and Oregon waters, which consists of humpbacks predominantly from the Mexico DPS is 2,374 whales (2019 SARs_CAWAOR).

Humpback whales are low frequency cetaceans that produce a variety of vocalizations ranging from 20 Hz to 10 kHz (Au 2000; Au et al. 2006; Erbe 2002a; Frazer and Mercado III 2000; Payne and Payne 1985; Richardson et al. 1995b; Silber 1986; Thompson et al. 1986; Tyack and Whitehead 1983; Vu et al. 2012; Winn et al. 1970).

Table 3. Probability of encountering humpback whales from each DPS in the North Pacific Ocean (columns) in various feeding areas (on left). Lavender highlighted area includes the action area. Adapted from Wade et al. (2016).

Summer Feeding Areas	North Pacific Distinct Population Segments			
	Western North Pacific DPS (endangered)[1]	**Hawaii DPS (not listed)**	**Mexico DPS (threatened)**	**Central America DPS (endangered)[1]**
Kamchatka	100%	0%	0%	0%
Aleutian I/ Bering/Chukchi	4.4%	86.5%	11.3%	0%
Gulf of Alaska	0.5%	89%	10.5%	0%
Southeast Alaska / Northern BC	0%	93.9%	6.1%	0%
Southern BC / WA	0%	52.9%	41.9%	14.7%
OR/CA	0%	0%	89.6%	19.7%

[1] For the endangered DPSs, these percentages reflect the 95% confidence interval of the probability of occurrence in order to give the benefit of the doubt to the species and to reduce the chance of underestimating potential takes.

Bering Sea/Aleutian Islands/Chukchi and Beaufort Seas

The abundance estimate for humpback whales in the Bering Sea Aleutian Islands is 2,427 (CV= 0.2) animals, which includes whales from the Hawaii DPS (86.5%), Mexico DPS (11.3%), and Western North Pacific DPS (4.4%[1]) (NMFS 2016a; Wade et al. 2016).

Gulf of Alaska

The abundance estimate for humpback whales in the Gulf of Alaska is 2,089 (CV=0.09) animals, which includes whales from the Hawaii DPS (89%), Mexico DPS (10.5%), and Western North Pacific DPS (0.5%[4]) (NMFS 2016a; Wade et al. 2016). Humpback whales occur throughout the central and western Gulf of Alaska from Prince William Sound to the Shumagin Islands. Seasonal concentrations are found in coastal waters of Prince William Sound, Barren Islands, Kodiak Archipelago, Shumagin Islands, and south of the Alaska Peninsula. Large numbers of humpbacks have also been reported in waters over the continental shelf, extending up to 100 nm offshore in the western Gulf of Alaska (Wade et al. 2016).

Humpback whales could be along the route taken by the project-related barges. They appear to be moving farther north into areas they previously occupied before widespread commercial harvest. They were regularly documented in the southern Chukchi Sea from the 1920s to 1950s, but few were reported thereafter. Brower et al. (2018) documented humpback whales in the

[1] For endangered Western North Pacific DPS we chose the upper limit of the 95% confidence interval from the Wade et al. (2016) estimate in order to be conservative due to their status.

eastern Chukchi Sea from July through October, with the majority seen in September. They were also documented as far north as Utqiaġvik in July. The median distance to shore was 78 km, but the range was 1-145 km. Recent sightings suggest populations may be recovering from commercial whaling (Brower et al. 2018).

Humpback whales are the most frequent victims of ship strikes in Alaska, accounting for 86 percent of all reported collisions (Neilson et al. 2012). From 2012 through 2020, there have been 44 recorded vessel strikes of humpback whales (NMFS unpublished data 2020), all of which ranged from the Gulf of Alaska to Southeast Alaska. These strikes occurred while vessels were traveling up to 22 knots, although some occurred while anchored (i.e. the humpback whale struck the boat). Vessels ranged from small 20-foot pleasure craft to a 950-foot cruise ship.

Additional information on humpback whale biology and natural history is available at:
https://www.fisheries.noaa.gov/species/humpback-whale
https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region

Fin Whales
The fin whale was decimated by commercial whaling in the 1800s and early 1900s. It was listed as an endangered species under the ESCA on June 2, 1970 (35 FR 8491 (baleen whales listing); 35 FR 18319, December 2, 1970 (fin whale listing)), and continued to be listed as endangered following passage of the ESA in 1973. Fin whales are a low-frequency cetacean producing sounds in the 10 Hz to 0.2 kHz range (Edds 1988; Thompson et al. 1992; Watkins 1981; Watkins et al. 1987). Critical habitat has not been designated.

Information on fin whale biology and habitat is available at:
https://www.fisheries.noaa.gov/species/fin-whale
https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region

Fin whales have been documented infrequently around Unalaska Island (Stewart et al. 1987; Zerbini et al. 2006). There are two documented vessel strikes of a fin whale in Unalaska from 2012 to 2020 (NMFS unpublished data, 2020).

Sperm Whales
The sperm whale was listed as an endangered species under the ESCA on June 2, 1970 (35 FR 8491), and continued to be listed as endangered following passage of the ESA. Critical habitat has not been designated. Sperm whales are mid-frequency cetaceans (150 Hz to 160 Hz) that produce a variety of vocalizations ranging from 0.1 to 20 kHz (Goold and Jones 1995; Møhl et al. 2003; Weilgart and Whitehead 1993; Weir et al. 2007).

Information on sperm whale biology and habitat is available at:

https://www.fisheries.noaa.gov/species/sperm-whale
https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region

Sperm whales are primarily found in deep waters, and sightings of sperm whales in water less than 300 m (984 ft) are uncommon. The northern extent of their known range is 62°N (Muto et al. 2018). During summer, males are found in the Gulf of Alaska, Bering Sea, and waters around the Aleutian Islands (Mizroch and Rice 2013). Results from acoustic surveys indicate that sperm whales are present in the Gulf of Alaska year-round (Mellinger et al. 2004a).

From 2012-2020, there was one ship strike of a sperm whale in the Bering Sea (specifically, Semalga Pass) (Delean et al. 2020) (NMFS unpublished data).

North Pacific Right Whales and their Critical Habitat

The northern right whale was listed as an endangered species under the ESCA on June 2, 1970 (35 FR 8491 (baleen whales listing); 35 FR 18319, December 2, 1970 (right whales listing)), and continued to be listed as endangered following passage of the ESA. NMFS later divided the listing of northern right whales into two separate endangered species: North Pacific right whales and North Atlantic right whales (73 FR 12024; March 6, 2008). Only the North Pacific right whale occurs in Alaska. Right whales are low frequency cetaceans with an estimated hearing range of 10 Hz to 22 kHz (Parks et al. 2007).

Information on biology and habitat of the North Pacific right whale is available at:
https://www.fisheries.noaa.gov/species/north-pacific-right-whale
http://www.adfg.alaska.gov/index.cfm?adfg=rightwhale.main
https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region

The North Pacific right whale is distributed from Baja California to the Bering Sea with the highest concentrations in the Bering Sea, Gulf of Alaska, Okhotsk Sea, Kuril Islands, and Kamchatka area. They are primarily found in coastal or shelf waters but sometimes travel into deeper waters. In spring through fall their distribution is dictated by the distribution of their prey. In the winter, pregnant females move to shallow waters in low latitudes to calve; the winter habitat of the rest of the population is unknown.

North Pacific right whales detections are very rare in the Gulf of Alaska. From 2004 to 2006, four sightings occurred in the Barnabus Trough region on Albatross Bank, southeast of Kodiak Island, which is important habitat for the North Pacific right whales; a portion of this area was included in the critical habitat designation on April 8, 2008 (73 FR 19000). Acoustic monitoring from May 2000 to July 2001 at seven sites in the Gulf of Alaska detected right whale calls at only two: one off eastern Kodiak and the other in deep water south of the Alaska Peninsula (detection distance 10s of kilometers) (Mellinger et al. 2004b).

North Pacific right whales have been consistently detected in the southeastern Bering Sea around

the localized area of designated critical habitat during spring and summer feeding seasons (Goddard and Rugh. 1998; Moore 2000; Moore et al. 2002; Rone et al. 2012; Rone et al. 2010; Zerbini et al. 2009). Of the 184 recent right whale sightings reported north of the Aleutian Islands, 182 occurred within the area designated as critical habitat in the Bering Sea. Most North Pacific right whales remain in the southeastern Bering Sea from May through December (Munger and Hildebrand 2004; Stafford and Mellinger 2009), although some can be found there year-round (Muto et al. 2018).

There have been no documented ship strikes or entanglements of North Pacific right whales off Alaska.

Critical habitat for the northern right whale was designated in the North Pacific Ocean on July 6, 2006 (71 FR 38277), and the same areas of critical habitat for the North Pacific right whale was re-designated in the eastern Bering Sea and in the Gulf of Alaska on April 8, 2008 (73 FR 19000). The physical or biological features (PBFs) deemed necessary for the conservation of North Pacific right whales include the presence of specific copepods (*Calanus marshallae*, *Neocalanus cristatus*, and *N. plumchris*), and euphausiids (*Thysanoessa Raschii*) that act as primary prey items for the species, and physical and oceanographic forcing that promote high productivity and aggregation of large copepod patches (50 CFR § 226.215).

Project-specific barges may transit around, but not through, North Pacific right whale critical habitat (Figure 3).

Bowhead Whale

The bowhead whale was listed as endangered under the ESCA on June 2, 1970 (35 FR 8491 (baleen whales listing); 35 FR 18319, December 2, 1970 (bowhead whale listing)), and continued to be listed as endangered following passage of the ESA. The only bowhead whale stock found in U.S. waters is the Western Arctic stock. Western Arctic bowhead whales are distributed in seasonally ice-covered waters of the Arctic and near-Arctic, generally north of 60°N and south of 75°N. The bowhead whale is a low frequency cetacean sensitive to frequencies between 20 Hz to 5kHz, with a maximum sensitivity from 100 to 200 Hz (Erbe 2002b). Critical habitat has not been designated for the bowhead whale.

Information on bowhead whale biology and habitat is available at:
https://www.fisheries.noaa.gov/species/bowhead-whale
https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock#cetaceans---large-whales

The 2011 ice-based abundance estimate was 16,820 (Muto et al. 2020). The minimum population estimate for the Western Arctic stock of bowhead whales is 16,100 (Muto et al. 2020). The majority of bowhead whales migrate annually from northern Bering Sea wintering areas (December to March) to the Beaufort Sea, where they spend much of the summer (June through early to mid-October) before returning to Bering Sea wintering areas in fall (September through December) (Muto et al. 2020).

There is only one reported ship strike of bowhead whale. It occurred in Barrow in 2015 (NMFS unpublished data 2020). Muto et al. (2020) reported that 2 percent of the records examined between 1990 and 2012 showed clear evidence of scarring from ship propeller injuries.

Cook Inlet Beluga Whale and their Critical Habitat

The beluga whale is a mid-frequency cetacean with an applied frequency range of 150 Hz to 160 kHz (NMFS 2018). A survey from 1979 provides the best available historical abundance estimate of the Cook Inlet beluga whale population of 1,293 whales (Calkins 1989). NMFS began conducting comprehensive and systematic aerial surveys of the beluga population in 1993. These surveys documented a decline in beluga abundance from 653 whales in 1994 to 347 whales in 1998, a decline of nearly 50%. Abundance data collected since 1999 indicate that the population did not increase, and the lack of population growth led NMFS to list the Cook Inlet beluga whale distinct population segment (DPS) as endangered under the ESA on October 22, 2008 (73 FR 62919).

The best estimate of 2018 abundance for the Cook Inlet beluga whale population from the aerial survey data is 279 whales (95 percent probability interval 250 to 317) (Shelden and Wade 2019). Over the most recent 10-year time period (2008-2018), the estimated trend in abundance is approximately -2.3 (-4.1 to -0.6) percent/year (Shelden and Wade 2019). This is a steeper decline than the previously estimated decline of -0.5 percent/year (Shelden et al. 2017) The methods presented in Shelden and Wade (2019) were developed by incorporating additional data and an improved methodology for analyzing the results of aerial population surveys. NMFS used a new group size estimation method (Boyd et al. 2019) and new criteria to determine whether certain data from aerial surveys could be used reliably. Shelden and Wade (2019) report abundance estimates dating back to 2004 that have been adjusted using the new methodology.

The distribution of Cook Inlet belugas has changed significantly since the 1970s. Fewer sightings of belugas have occurred in the lower Inlet in recent decades (Hansen and Hubbard 1999; Speckman and Piatt 2000; Rugh et al. 2000, 2010) indicating that the summer range has contracted to the mid and upper Inlet, coincident with their decline in population size. The range contraction brings animals in a small range proximal to Anchorage during summer months, where there is increased potential for disturbance from human activities. Information on Cook Inlet beluga whale biology and habitat (including critical habitat) is available at: https://www.fisheries.noaa.gov/species/beluga-whale#overview

NMFS designated critical habitat for the Cook Inlet beluga whale on April 11, 2011 (76 FR 20180; 50 CFR § 226.220).

1. Area 1. All marine waters of Cook Inlet north of a line from the mouth of Threemile Creek (61°08.5' N., 151°04.4' W.) connecting to Point Possession (61°02.1' N., 150°24.3' W.), including waters of the Susitna River south of 61°20.0' N., the Little Susitna River south of 61°18.0' N., and the Chickaloon River north of 60°53.0' N.

2. Area 2. All marine waters of Cook Inlet south of a line from the mouth of Threemile Creek (61°08.5' N., 151°04.4' W.) to Point Possession (61°02.1' N., 150°24.3' W.) and north of 60°15.0'N., including waters within 2 nautical miles seaward of MHW along the western shoreline of Cook Inlet between 60°15.0' N. and the mouth of the Douglas River (59°04.0' N., 153°46.0' W.); all waters of Kachemak Bay east of 151°40.0' W.; and waters of the Kenai River below the Warren Ames bridge at Kenai, Alaska.

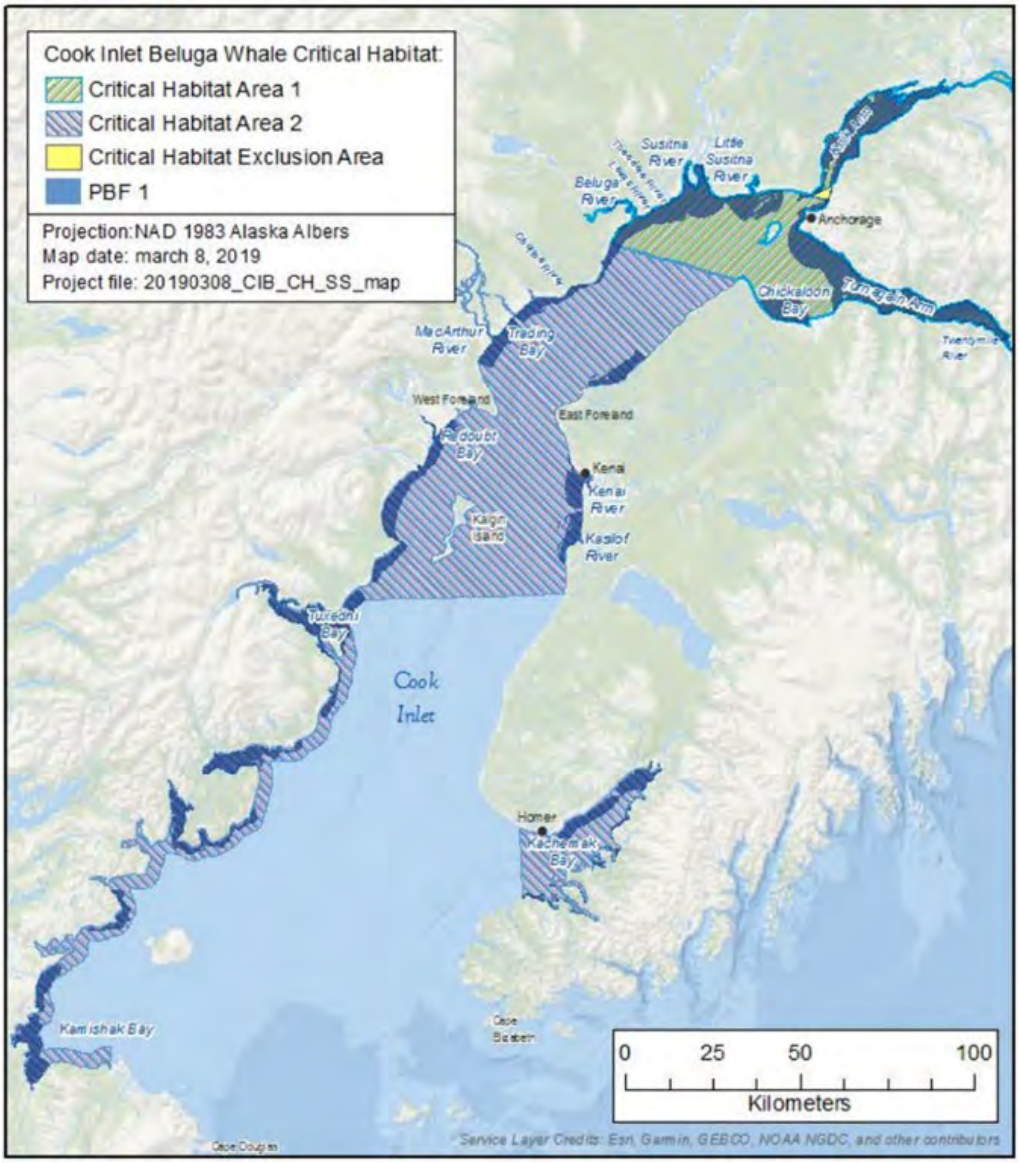


Figure 4. Cook Inlet Beluga Whale Critical Habitat (50 CFR § 226.220).

If project-specific vessels are required for this project, they may transit through Cook Inlet beluga whale critical habitat.

Effects of the Action

For purposes of the ESA, "effects of the action" means all consequences to listed species or critical habitat that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR § 402.02). The applicable standard to find that a proposed action is "not likely to adversely affect" listed species or critical habitat is that all of the effects of the action are expected to be insignificant, extremely unlikely to occur, or completely beneficial. "Insignificant effects" relate to the size of the impact and are those that one would not be able to meaningfully measure, detect, or evaluate; insignificant effects should never reach the scale where take occurs.

This consultation includes NMFS guidance on the term "harass," which means to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering" (Wieting 2016).

NMFS has determined the potential effects of the action include:

1. Acoustic disturbance
2. Vehicle and equipment noise and presence
3. Physical presence
4. Vessel strike
5. Small spill

Acoustic Thresholds

Since 1997, NMFS has used generic sound exposure thresholds to determine whether an activity produces underwater sounds that might result in impacts to marine mammals (70 FR 1871, 1872; January 11, 2005). NMFS utilizes 120 dB_{rms} re 1μPa as the threshold for continuous sound, as would be produced by an engine and propeller, to determine the distance to behavioral disturbance.

NMFS uses the thresholds in Table 4 to determine Level A harassment, which is the level of underwater sounds that cause injury. These acoustic thresholds are presented using dual metrics of weighted cumulative sound exposure level (L_E) and peak sound level (L_{pk}) for impulsive sounds, and weighted L_E for non-impulsive sounds.

Table 4. PTS Onset Acoustic Thresholds for Level A Harassment (NMFS 2018).

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	**Impulsive**	**Non-impulsive**
Low-Frequency (LF) Cetaceans	$L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	$L_{E,LF,24h}$: 199 dB
Mid-Frequency (MF) Cetaceans	$L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	$L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	$L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	$L_{E,HF,24h}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	$L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	$L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	$L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	$L_{E,OW,24h}$: 219 dB

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of $1\mu Pa^2s$. The subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds), and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (i.e., varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Vessel Noise

Vessel noise associated with the proposed action would occur from up to three project-specific barge round trips between Anchorage or Dutch Harbor and Deering, and several barge trips localized between Nome, Kotzebue, and Deering. Underwater noise may disturb or temporarily mask communication between marine mammals.

Vessel noise from commercial shipping traffic is a major source of low frequency (5 to 500 Hz) sound (Simmonds and Hutchinson 1996), with the majority of the sound occurring from 20-300 Hz (Richardson et al. 1995a). This overlaps with the frequency distributions of all listed species along the potential transit route (Table 5). The primary underwater noise associated with vessel

operations due to this action is the continuous cavitation noise produced by the propeller arrangement on the oceanic tugboats, especially when pushing or towing a loaded barge.

Table 5. Sound frequency distributions of listed species and project related activities

Activity	**Minimum Sound Frequency**	**Maximum Sound Frequency**
Vessel traffic	5 Hz	500 Hz
Species	**Minimum Sound Frequency**	**Maximum Sound Frequency**
Bowhead whale*	7 Hz	35 kHz
Fin whale	20 Hz	10 kHz
Humpback whale*	7 Hz	35 kHz
North Pacific Right whale	10 Hz	22 kHz
Sperm whale*	150 Hz	160 kHz
Ringed seal*	50 Hz	86 kHz
Bearded seal*	50 Hz	86 kHz
Steller sea lion*	60 Hz	39 kHz

*Indicates using the applied frequency range for that type of species. Otherwise, the levels listed are from studies of that particular species.

Tug boats may be used in conjunction with barges to deliver materials to the project site. Tugs have higher speed engines and propellers than larger fueling vessels or barges. The smaller vessel noise spectra peak around 300 Hz with a source level ranging from 145-170 dB re 1 µPa depending on if the tug is pulling an empty or loaded barge. Continuous sounds for sea going barges have been measured at a peak sound source level of 170 dB re 1 µPa rms at 1 m (broadband), and they are emitted at dominant frequencies of less than 5 kHz, and generally less than 1 kHz (Miles et al. 1987; Richardson et al. 1995a). Coastal barges and tugs produce a peak sound source level of approximately 164 dB re 1 µPa rms at 1 m (Richardson et al. 1995a). The source level of approximately 170 dB at 1 meter associated with oceanic tug boat noise is anticipated to decline to 120 dB re 1µPa rms within 2.2 km (1.4 mi) of the source. This level of noise may cause a temporary behavioral change because marine mammals are expected to avoid both the sound and the approaching vessel with changes in their direction of travel or breathing pattern for a few minutes until the vessel passes.

It is not clear whether the marine mammal response of avoidance when a surface vessel moves towards it is caused by the physical presence of a surface vessel, the underwater noise generated by the vessel, or an interaction between the two (Goodwin and Cotton 2004; Lusseau 2006). However, several authors suggest that the noise generated during motion is probably an important factor (Blane and Jaakson 1994; Evans et al. 1992; Evans et al. 1994). These studies suggest that the behavioral responses of marine mammals to surface vessels are similar to their behavioral responses to predators.

Increases in ambient noise, however temporary, have the potential to mask communication between seals (Terhune et al. 1979) and some marine mammals have been known to alter their own signals to compensate for increased ambient noise levels (Au et al. 1974; Di Lorio and

Clark. 2010; Parks et al. 2011), incurring energetic costs in the process. However, Funk et al. (2010) noted among vessels operating in the Chukchi Sea where received sound levels were <120 dB, 40% of observed seals showed no response to a vessel's presence, slightly more than 40% swam away from the vessel, 5% swam towards the vessel, and the movements of 13% of the seals were unidentifiable. Richardson et al. (1995a) found vessel noise does not seem to strongly affect seals in the water, concluding that seals on haul outs often respond more strongly to the presence of vessels.

Ambient noise can mask communication between sea lions and affect their ability to detect predators (Richardson and Malme 1993; Weilgart 2007). Potential impacts to Steller sea lions from disturbances, such as anthropogenic noise produced by vessel activity, would generally occur at haul-outs and near rookeries, where in-air vessel noise could cause behavioral responses (avoidance of the sound source, spatial displacement from the immediate surrounding area, trampling, and abandonment of pups) (Calkins and Pitcher 1982; Kucey 2005). However, frequently Steller sea lions are observed hauling out in areas experiencing a high level of vessel traffic and human activity, such as boat marinas and navigation buoys (Fisheries and Oceans Canada 2010; Jeffries et al. 2000). Dutch Harbor has heavy vessel traffic (>62,000 transits in 2018-2019), thus it is likely that Steller sea lions in that area are habituated to anthropogenic noise. Sea lions in the action area are more likely to respond to vessel noise when they are hauled out vs. in the water (NMFS 2019). However, the implementation of mitigation measures, specifically vessels remaining more than 3 nm from major Steller sea lion rookeries and haulouts (listed in regulation at 50 CFR 224.103(d)(1)(iii) & 50 CFR 226.202), will make it unlikely that vessels associated with this action will disturb large numbers of hauled-out Steller sea lions. The effects of vessel presence on sea lions in open water is expected to be transient in nature as the vessel approaches and passes sea lions.

Acoustic masking is of concern for baleen whales (low-frequency cetaceans) that vocalize at low frequencies over long distances, as their communication frequencies overlap with anthropogenic sounds such as shipping traffic. Some baleen whales have adjusted their communication frequencies, intensity, and call rate to limit masking effects. For example, fin whales have reduced their calling rate in response to boat noise (Watkins 1986) and right whales have been observed changing vocal behavior due to shipping sound that caused an increase in overall background noise (Parks et al. 2007). Noises from ships and other activities in Cook Inlet area may cause a decrease or cessation of beluga vocalizations, or mask their vocalizations (Castellote et al. 2015). Vessel noise could result in physical injury if a whale were exposed to sound source levels if they exceed TTS onset thresholds, which occurs within 1.85 km at 170 dB. However, such a scenario is unlikely because the TTS onset threshold for low-frequency cetaceans is 199 dB and for mid-frequency cetaceans is 198 dB, and the barges associated with this proposed action create sound levels of 170 dB or less. Additionally, the sound generated by barges is transitory in nature, so the exposure is short in duration. Vessel noise and presence more likely will elicit short-term behavioral responses.

While listed marine mammals will likely be exposed to acoustic stressors from vessel transit, the majority of acoustic energy they will be exposed to will be low-frequency, with much of the

acoustic energy emitted by the vessels at frequencies below the best hearing ranges of the marine mammals expected to occur within the action area. In addition, because vessels will be in transit, the duration of the exposure will be very brief. At 10 knots, vessels with a sound source level of 170 dB will ensonify a given point in space to levels above 120 dB for less than 7 minutes. Because vessels will be emitting continuous sound as they transit through the area, vessel activities will alert marine mammals of their presence before the received level of sound exceeds 120 dB (Level B take threshold). Therefore, a startle response is not expected. Rather deflection and avoidance are expected to be common responses in those instances where there is any response at all. The implementation of mitigation measures is expected to further reduce the significance of marine mammal reaction to transiting vessels. In addition, based on the extremely low density of North Pacific right whales in the Bering Sea, and limited number of vessel transits associated with the project, we do not anticipate spatial overlap between this species and vessel transit, thus the probability of being affected by barge sound is low.

While marine mammals are likely to be exposed to vessel noise, the effects are anticipated to be too small to detect or measure and are not likely to significantly disrupt normal whale or pinniped behavioral patterns. Therefore, NMFS concludes that the effects of vessel noise on the ESA-listed whales and pinnipeds in the action area are insignificant.

Vehicle and Equipment Noise and Presence

At the Deering barge landing, seals may be exposed to noise from construction vehicles and out of water equipment during barge landing activities. Ringed seals have acute in-air hearing (Sills et al. 2014; Sills et al. 2015). In-air hearing of bearded seals has not been studied, but due to the wide frequency range of their vocalizations (Risch et al. 2007), similar in-air hearing capabilities to ringed seals may be assumed. Vehicular noise would be audible to species present and may result in changes in behavior, although behavioral responses can vary widely depending on context and novelty of the noise source (Ellison et al. 2012; Richardson et al. 1995; Southall et al. 2007). Harwood et al. (2007) reported no avoidance of an ice road by ringed seals in the Beaufort Sea, suggesting they were not displaced by in-air noise from the vehicular traffic. A contrasting study concluded that in-air noise from snow machines, when within 2.8 km, resulted in most ringed seals leaving their lairs (Kelly et al. 1988). Given the current presence of boat traffic in the open water season and the presence of snow machines during the winter, seals in the action area may be accustomed to such noise. Seals would be expected to habituate to this noise regime (Moulton et al. 2005), and no long-term changes of seal presence and behavior due to vehicle noise are expected.

Effects from in-air vehicle and out of water equipment noise are expected to be minimal given the current human presence in and near the community of Deering. Therefore, acoustic disturbance from project specific vehicles and equipment is expected to be insignificant.

Physical Presence

Project-specific barging could result in a temporary disturbance that alters an animal's natural behavior. The mere presence and movements of ships in the vicinity of seals and sea lions can cause disturbance to their normal behaviors (Calkins and Pitcher 1982; Jansen et al. 2006; Jansen

et al. 2010; Kucey 2005). Numerous studies of interactions between surface vessels and marine mammals have demonstrated that free-ranging marine mammals engage in avoidance behavior when surface vessels move toward them. It is not clear whether these responses are caused by the physical presence of a surface vessel, the underwater noise generated by the vessel, or an interaction between the two (Goodwin and Cotton 2004; Lusseau 2006).

Disturbances from vessels may motivate seals and sea lions to leave haulout locations and enter the water (Kucey 2005), but they are expected to return to their normal activities when the vessel passes (BLM 2019). Seals in the Chukchi Sea during the 2012 open-water season responded to a moving vessel by looking at the vessel (42%) or doing nothing (38%) (Bisson et al. 2013). Greene and Moore (1995) concluded that the effects of vessel traffic on seals are generally negligible to non-existent when they are in the water. Frequently Steller sea lions are observed hauling out in areas experiencing a high level of vessel traffic and human activity, such as boat marinas and navigation buoys (Fisheries and Oceans Canada 2010; Jeffries et al. 2000). Dutch Harbor has heavy vessel traffic (>62,000 transits in 2018-2019), thus it is likely that Steller sea lions in that area are habituated to vessel presence. Additionally, harassment of sea lions on haulouts or rookeries is unlikely because mitigation measures require that unauthorized vessels come no closer than three nautical miles from identified haulouts or rookeries (50 CFR 224.103(d)(1)(iii) & 50 CFR 226.202).

Based on a suite of studies of cetacean behavior to vessel approaches (Au and Green 2000; Bain et al. 2006; Bauer and Herman 1986; Goodwin and Cotton 2004; Lusseau and Bejder 2007; Magalhaes et al. 2002; Nowacek et al. 2001; Williams et al. 2002), the set of variables that help determine whether marine mammals are likely to be disturbed by surface vessels include 1) the number of vessels, 2) distance between the animal and the vessel, 3) vessel speed and vector, and 4) behavioral state of the animal(s). Most animals tended to reduce their visibility at the water's surface and move horizontally away from the source of disturbance or adopt erratic swimming strategies (Lusseau 2003; Lusseau 2006; Williams et al. 2002). In the process, their dive times increased, vocalizations and breaching were reduced, individuals in groups moved closer together, swimming speeds increased, and their direction of travel took them away from the source of disturbance (Evans et al. 1994; Kruse 1991). Some individuals also dove and remained motionless, waiting until the vessel moved past their location. According to Richardson and Malme (1993), most bowheads will swim away quickly in response to vessels that approach them rapidly and directly. Avoidance usually begins when the vessel is 1–4 km (0.6–2.5 mi) away. Vessels can also temporarily disrupt whale activity and social groups (Richardson and Malme 1993). Retreating from a vessel generally stopped within minutes after the vessel passed, but scattering of whales may persist (Koski and Johnson 1987), while some bowheads return to their original locations (Richardson and Malme 1993).

Humpback whale reactions to approaching boats are variable, ranging from approach to avoidance (Payne 1978; Salden 1993). However, humpbacks showed no reaction at distances beyond 800 m when the whales were feeding (Krieger and Wing 1986; Watkins 1981). Humpback whales are especially responsive to fast moving vessels (Richardson et al. 1995a), exhibiting aerial behaviors such as breaching or tail/flipper slapping (Jurasz and Jurasz 1979).

However, temporarily disturbed whales often remain in the area despite the presence of vessels (Baker et al. 1988; Baker et al. 1992). Fin whales responded to vessels at distances of about 1 km (Edds and Macfarlane 1987). Watkins (1981) found that fin and humpback whales appeared startled and increased their swimming speed to avoid approaching vessels.

Shipping may affect Cook Inlet beluga whale habitat through physical disturbance. The physical disturbance and noise associated with shipping and transportation activities could displace beluga prey species from preferred habitat areas that contain the features essential for this species, or that alter the quantity and/or quality of these essential features (NMFS 2016b). Vessel traffic and tourism encroachment in critical habitat areas could disturb and displace Cook Inlet belugas and/or their prey species, resulting in reduced conservation value of the critical habitat.

Sperm whales may be affected by vessel presence along the vessel transit route. Sperm whales exhibit a strong preference for waters greater than 1000 m and are rarely found in waters less than 300 m. During fisheries research in the Gulf of Alaska and Bering Sea, no sightings of sperm whales occurred in the Bering Sea while several occurred in the Gulf of Alaska (Hill et al. 1999). Sperm whales did not elicit changes in their feeding or socializing behavior in the presence of whale watching boats, although they changed their heading, spatial arrangement, diving patterns and frequency of aerial displays (Magalhaes et al. 2002). When vessels exhibited inappropriate maneuvering, including violating angle approach rules, the sperm whales changed their swim speed and aerial displays (Magalhaes et al. 2002). Sperm whale behavior has been shown to change with vessel presence, but these were whale watching vessels that positioned themselves near the sperm whales, not the transitory shipping vessel as in this proposed action. Project vessels will emit continuous sound while in transit, which will alert sperm whales to their presence. We anticipate the reaction of the sperm whale to a transiting vessel to be minimal and restricted to avoidance behavior based on observations of the degree of intrusion it took for encroaching vessels to elicit a response from sperm whales. Lastly, based on the extremely low density of North Pacific right whales in the Bering Sea, and limited number of vessel transits associated with the project, we do not anticipate spatial overlap between the North Pacific right whale and vessel operations.

Project vessels will emit continuous sound while in transit, which will alert marine mammals to their presence. Therefore, a startle response is not expected. Rather, deflection and avoidance are expected to be common responses in those instances where there is any response at all. As mentioned above, seals and sea lions are anticipated to avoid or ignore vessels as they transit. The adherence to mitigation measures are expected to further reduce the potential for ESA-listed whales or pinnipeds to react discernibly to the transiting project-specific barge. We expect any effects of the project-specific barge presence to these ESA-listed species to be too small to detect or measure and therefore conclude the effect of vessel presence would be insignificant.

Vessel Strike

The project-related barges in this action have the potential to strike a marine mammal. To date, no bearded or ringed seal carcasses have been found with propeller marks and there is no record of bearded or ringed seal stranding due to vessel strike (Delean et al. 2020). However, Sternfeld

(2004) documented a single spotted seal stranding in Bristol Bay, Alaska, that may have resulted from a propeller strike. A ship strike of a seal is highly unlikely due to the maneuverability of seals and their general avoidance of ships (NMFS internal data). The probability of a ship strike occurring is very small and thus adverse effects to bearded or ringed seals are extremely unlikely to occur.

Although risk of vessel strike has not been identified as a significant concern for Steller sea lions, the recovery plan for this species states that Steller sea lions may be more susceptible to ship strike mortality or injury in harbors or in areas where animals are concentrated, e.g., near rookeries or haulouts (NMFS 2008b). In 2007, a Steller sea lion was found in Kachemak Bay that may have been struck by a watercraft; one was struck in Sitka, AK (NMFS internal data); and one was struck on the West Coast (Delean et al. 2020). For this action, no vessel strikes of Steller sea lions are anticipated. Despite all the vessel traffic around Dutch Harbor and Anchorage, there are no reported ship strikes of any Steller sea lions in this location or in the probable path the barges will take to Deering, Alaska (Delean et al. 2020; Muto et al. 2020).

Vessel strikes of humpback whales are far more likely than strikes of pinnipeds and other whales (Neilson et al. 2012). An examination of all known ship strikes for large (baleen and sperm) whales from all shipping sources indicates vessel speed is a principal factor in whether a vessel strike results in death (Laist et al. 2001; Vanderlaan and Taggart 2007). In assessing records with known vessel speeds, Laist et al. (2001) found a direct relationship between the occurrence of a whale strike and the speed of the vessel involved in the collision. The authors concluded that most deaths occurred when a vessel was traveling in excess of 24.1 km/hour (14.9 miles per hour; 13 knots), which is slightly less than the maximum speed for shipping vessels associated with this action (14 knots, 16 mph). Humpback whales are the most frequent victims of ship strikes in Alaska, accounting for 86 percent of all reported collisions (Neilson et al. 2012). Vessel strikes are a concern given the increasing humpback whale populations and increasing vessel traffic. Small vessel strikes were most common (<15 m, 60 percent), but medium (15–79 m, 27 percent) and large (≥80 m, 13 percent) vessels also struck humpback whales. Most strikes (91%) occurred in May through September, and there were no reports from December or January. The majority of strikes (76 percent) were reported in southeastern Alaska. From 2013 to 2017, 29 humpbacks incurred mortality or serious injury from vessel strikes (Delean et al. 2020); from 2012 through 2020, there have been 44 recorded vessel strikes of humpback whales (NMFS unpublished data), all of which ranged from the Gulf of Alaska to Southeast Alaska. These strikes occurred while vessels were traveling up to 22 knots, although some occurred while anchored (i.e. the humpback whale struck the boat). Vessels ranged from small 20-foot pleasure craft to a 950-foot cruise ship. Approximately 86-89% of the humpback whales in the Gulf of Alaska and Bering Sea area are from the non-listed Hawaii DPS. Therefore, if a humpback whale were struck by a vessel, the likelihood of it being from an ESA-listed DPS is low; about 1 in 10. The mitigation measures included in the proposed action make vessel strikes of humpback whales extremely unlikely to occur.

There has been one reported ship strike of a bowhead whale in the Arctic and it occurred in 2015 (NMFS internal data). Muto et al. (2020) reported that 2 percent of the records examined

between 1990 and 2012 showed clear evidence of scarring from ship propeller injuries on bowhead whales. There have been no documented injuries to blue or North Pacific right whales by ship strike in waters off Alaska. From 2012-2020, there were two documented injuries by ship strikes of fin whales and two ship strikes of a sperm whale (Delean et al. 2020)(NMFS unpublished data). One vessel strike of a fin whale occurred while the commercial vessel was traveling over 18 knots (NMFS unpublished data), which is faster than the vessels associated with this action. One sperm whale was struck by a vessel traveling at 24 knots; the other is by an unknown vessel (NMFS unpublished data).

Ship strikes of smaller cetaceans such as beluga whales are much less common, possibly due to their smaller size, more agile nature, and the habitat they occupy. However, while likely rare, vessel strikes of belugas have been documented in the St. Lawrence River Estuary (Lair et al. 2015). In addition, in Cook Inlet, a dead beluga whale washed ashore in 2007 with "wide blunt trauma along the right side of the thorax" (NMFS 2008a), suggesting a ship strike was the cause of the injury. In October 2012, a necropsy of another Cook Inlet beluga carcass indicated the most likely cause of death was "blunt trauma such as would occur with a strike with the hull of the boat" (NMFS AKR, unpub. data). Scarring consistent with propeller injuries has also been documented among Cook Inlet belugas (McGuire et al. 2011).

Given the mitigation measures associated with this action, including reduced vessel speed and vessel approach distances, the low number of documented ship strikes to date in the action area, and extremely small incremental increase in vessel traffic due to this project (maximum of three round trips), vessel strikes on ESA-listed cetaceans and pinnipeds are extremely unlikely to occur.

Spills

A small spill of petroleum-based product, such as a quart of lubricant or motor oil associated with the tug or barge engine or up to 5,000 gallons of diesel[2] could occur from the transit to and from Deering. Alternatively, the tug or barge could ground and, if its hull is ripped open, could release up to 250,000 gallons of diesel depending on the storage capacity of the tug[3] or barge. However, the probability of a spill occurring as a result of this project is very small. From 2010 to 2021, 822 diesel spills have occurred in marine waters of Alaska (ADEC unpublished data) predominantly from fishing vessels and passenger vessels (459 spills). 146 spills are associated with marinas, harbors and ports, not vessels specifically. Only 39 are specifically from barge and cargo vessels, and of those, only four are associated with groundings. Those four spills are responsible for the release of 6,801 gallons of diesel (or 2.7%) of the roughly 245,000 gallons of diesel spilled into the marine environment in the last ten years. There have been no barge and tug groundings since 2013.

The impact of any small spills of petroleum-based products that do occur likely will be very minor due to the volatility of refined petroleum products, or in the case of heavier molecular

[2] https://response.restoration.noaa.gov/sites/default/files/Small-Diesel-Spills.pdf

[3] https://www.professionalmariner.com/fuel-management-for-tugs-becoming-an-increasing-challenge/

weight lubricants, effects will be very minor due to very small volumes. Commercial vessels are required to abide by USCG regulations, which mandate spill response equipment on board; additionally, the USCG would be engaged should the vessel ground or be in danger of sinking.

Individual whales or their prey could come into contact with small amounts of petroleum-based products, but the ensuing effects would most likely be sub-lethal due to the very small quantity. If an individual whale came in direct contact with spilled light molecular weight petroleum products from project vessels in offshore waters, it could experience inhalation and respiratory distress from hydrocarbon vapors, and less likely skin and conjunctive tissue irritation. Substantial injury and mortality due to physical contact, inhalation and ingestion is possible; however, this is not likely in the vessel transit route due to the expected small spill size, and rapid wind-driven dispersion, as well as the propensity for oil to not adhere to cetacean skin (BOEM 2017, BLM 2019). Depending on the spill location and timing, a small refined spill in offshore waters could evaporate and disperse in 24-36 hours (BOEM 2017). Should a larger spill occur if the tug or barge grounded or sank, whales and Steller sea lions may experience the effects stated above; however the probability of this occurring is highly unlikely.

A small spill would be localized and would not permanently affect whale prey populations (e.g., forage fish and zooplankton). The amount of zooplankton and other prey lost in such a spill would likely be undetectable compared to what is available on the whales' summer feeding grounds (BOEM 2017). Consumption of highly localized contaminated prey would be unlikely. If a tug or barge were to spill all its diesel, the diesel is highly volatile and expected to evaporate as well as disperse quickly[4]. In addition, the vessel is required to have spill response equipment on board as mandated by the USCG. Therefore, we expect the spill will be localized.

Should seals come into contact with spilled oil, they may experience a range of effects, from temporary behavioral impacts to injury and death (Geraci 2012). Seals can potentially ingest spilled product while feeding, inhale their volatile components, or experience problems from direct contact. Surface contact with petroleum hydrocarbons, particularly the low-molecular-weight fractions, to seals can cause temporary damage of the mucous membranes and eyes (Davis et al. 1960) or epidermis (Walsh et al. 1974, Hansen 1985, Geraci and St. Aubin 1990).

A small oil spill would be localized and would not permanently affect fish and invertebrate populations that are ringed and bearded seal prey. The amount of fish and other prey lost in such a spill likely would be undetectable compared to what is broadly available throughout the range of the two seal species, which both forage over large areas and do not rely on local prey abundance (NMFS 2018b).

Steller sea lions could experience inhalation and respiratory distress from hydrocarbon vapors or ingest the spill directly or indirectly by consuming contaminated prey or cleaning themselves. It may also cause skin and conjunctive tissue irritation. In addition, a small spill could contaminate prey for Steller sea lions, but contamination would also be temporary.

[4] https://response.restoration.noaa.gov/sites/default/files/Small-Diesel-Spills.pdf

Due to the fast dissipation of a small spill, it is unlikely that injury or mortality of any individuals would occur. The noise and human activity expected from a spill clean-up would also elicit avoidance behavior by whales, further reducing their exposure to the spill. Any small spill that happens along the vessel transit route is expected to dissipate rapidly as well. Thus we expect any impact of an accidental spill associated with this action to be very minor and adverse effects to listed cetaceans and pinnipeds will be immeasurably small and thus insignificant. We have determined that it is extremely unlikely that a medium sized spill would occur as a result of these few project-related vessel transits. We therefore conclude that adverse effects due to spilled petroleum products from project vessels would be insignificant and highly improbable.

Effects on Steller Sea Lion Critical Habitat

Western DPS Steller sea lion critical habitat includes aquatic zones that extend 20 nm seaward from the baseline or basepoint of each major rookery and major haulout (Figure 3). Designated critical habitat for the Western DPS of Steller sea lion, including haulouts and rookeries, occurs along the potential vessel transit route in the Aleutian Islands and the Bogoslof special aquatic foraging area. The transit route may also overlap with the critical habitat designated on and around the Pribilof Islands, St. Matthew Island, or St. Lawrence Island. A diesel spill associated with a tug or barge grounding could alter the quality of critical habitat at a local scale. The most likely spills from the proposed action along the transit route would be a small spill of refined fuel oil (diesel) within Dutch Harbor (e.g. during refueling, less than 5 gallons), or very small quantities of heavier molecular weight petroleum based products such as lubricants, in offshore waters. This type of spill would be expected to evaporate and disperse quickly, but may contact Steller sea lion critical habitat. Localized prey populations could be contaminated if a small spill were to occur. However, if a small spill were to reach the critical habitat, impacts would most likely be localized and temporary. The quality and availability of important habitat would not likely be impacted after a short recovery period, during which Steller sea lions would continue to have access to other areas of unaffected critical habitat nearby.

Steller sea lion critical habitat includes five PBFs including: 1) terrestrial zones that extend 3,000 feet (0.9 km) landward from each major haulout and major rookery in Alaska; 2) air zones that extend 3,000 feet (0.9 km) above the terrestrial zone of each major haulout and major rookery in Alaska; 3) aquatic zones that extend 3,000 feet (0.9 km) seaward of each major haulout and major rookery in Alaska that is east of 144º W longitude; 4) aquatic zones that extend 20 nm (37 km) seaward of each major haulout and major rookery in Alaska that is west of 144ºW longitude; and 5) three special aquatic foraging areas (Shelikof Strait area, the Bogoslof area, and the Seguam Pass area) (50 CFR §226.202). Along the vessel transit route, terrestrial and aquatic zones and the Bogoslof and Shelikof Strait special aquatic foraging areas may be impacted by the project associated barge through diesel or refined petroleum product contamination.

<u>Terrestrial zones</u>

The terrestrial zones extend 3,000 feet landward from each major haulout and major rookery. Vessel traffic will not impact the land. Small spills associated with this project may occur, but

are expected to evaporate or dissipate quickly in the ocean, minimizing impact to the coast to the point where it will have no measurable impact upon shoreline habitat near rookeries or haulouts.

Air zones
There are no anticipated impacts to the air zone above Steller sea lion critical habitat.

Aquatic Zones east of 144°W
The action area does not include Steller sea lion aquatic zones east of 144°W.

Aquatic Zones west of 144°W
Aquatic zones west of 144°W may experience small spills associated with vessel traffic from this action. However, there are only up to three round trip transits anticipated for the entire project. These three round trips will likely traverse the aquatic zones along the Aleutian Islands, but not aquatic zones in the Bering Sea; there are no aquatic zones in Cook Inlet where the barge(s) will originate. In assessing the most likely transit, going between Kodiak Island and the Alaska Peninsula, the barge would transit approximately 1,288 km in aquatic zones of the 3,141 km total transit. While the risk of spill occurring during one of these three barge trips is already extremely low. Having a spill occur within or adjacent to the aquatic zones is even less likely, given that the vessels will only be in or near the aquatic zone of Steller sea lion critical habitat for about one third of their trip. Thus, the risk of small spills is very low, and any spills are expected to dissipate quickly.

Special aquatic foraging areas
The Bogoslof and Shelikof Strait special aquatic foraging areas are along the vessel transit route. This area may experience small spills associated with vessel traffic from this action. However, there are a maximum of only three round trip transits that may occur for the entire project. Therefore thus the risk of a small or medium size spill is very low, and any spills are expected to dissipate quickly. Diesel stays on the surface, dissipating or evaporating within hours to a few days. Additional material may be entrained in the water column by wind and tidal action, and dissipate quickly to unharmful concentrations. Additionally, tugs and barges are required to abide by USCG regulations with respect to spill containment equipment. Steller sea lions would be expected to avoid the area of any spilled material and seek prey elsewhere.

Due to the limited number of transits potentially occurring (none to three) for this project and the ability of a small spill associated with the vessel in transit to dissipate quickly, the impacts of a small spill are very minor, and thus any adverse effects to Steller sea lion critical habitat will be immeasurably small. Furthermore, the probability of a small spill occurring is very small, and thus adverse effects to Steller sea lion critical habitat are extremely unlikely to occur. Therefore we conclude that the adverse effects from a small spill on Steller sea lion critical habitat are inconsequential and improbable. Because the probability of a medium size spill from the tugs and barges associated with this action is very low, NMFS also concludes that adverse effects from a medium size spill on special aquatic foraging areas are highly improbable.

Effects on North Pacific Right Whale Critical Habitat

The project-specific barges and tugs associated with this action may transit near North Pacific right whale critical habitat, but mitigation measures prohibit transiting through it. Prey resources (copepods and euphausiids) are an essential feature of critical habitat for right whales, and the nearby habitat could be subject to an accidental release of diesel or other petroleum-based products. If a small spill were to occur originating from a project vessel, we expect that the released product will evaporate (if diesel) and disperse quickly in offshore waters. The impact of any small spills of heavier molecular weight lubricants will be very minor due to very small volumes. The probability of a small spill occurring during the course of these few (0-3) round trips is very small and the probability of a medium size spill occurring is extremely unlikely, and thus adverse effects to North Pacific right whale critical habitat are extremely unlikely to occur. Therefore we conclude that the adverse effects from a small or medium spill on North Pacific right whale critical habitat are highly improbable.

Effects on Cook Inlet Belugas Critical Habitat

The barges and tugs associated with this action may transit through Cook Inlet beluga critical habitat while en route from Anchorage to Deering. Potential effects to critical habitat include small spills, and vessel presence and noise. The following are potential impacts to the physical and biological features (PBFs) associated with beluga critical habitat:

1. **Intertidal and subtidal waters of Cook Inlet with depths <30 feet and within 5 miles of high and medium flow anadromous fish streams.**
   There are several anadromous streams in Cook Inlet beluga critical habitat. The primary concern with respect to anadromous streams is a potential spill and its resulting effects on beluga prey. However, the probability of a small project-related spill occurring is highly unlikely due to the very small number of vessel round trips (up to three), and thus adverse effects to PBF1 from a small spill are extremely unlikely to occur. Another potential effect could be the disturbance in prey availability due to sound generated by the barge and the presence of the barge itself. However, the barge noise is transitory. Prey may scatter as a barge approaches, but return shortly after the barge passes. Thus the impact of barge noise is very minor, so adverse effects from it will be immeasurably small.

2. **Primary prey species consisting of four species of Pacific salmon (chinook, sockeye, chum, and coho), Pacific eulachon, Pacific cod, walleye pollock, saffron cod, and yellowfin sole.**
   Fish may respond to noise associated with barge traffic by avoiding the immediate area. However, the impact of transitory vessel noise and the presence of vessel traffic associated with this project is very minor and thus adverse effects from vessel noise and presence to PBF2 will be immeasurably small.

   Spills may affect prey species. However, the likelihood of a small or medium spill associated with up to three project-specific barge round trips transiting through beluga critical habitat is extremely low, and thus potential effects on primary prey species of beluga whales are unlikely to occur.

3. **Waters free of toxins or other agents of a type and amount harmful to Cook Inlet beluga whales.**
   Unauthorized small spills could occur while up to three barges transit round trip from Anchorage to Deering for this project. The likelihood of a small spill occurring is very low and small spills are expected to rapidly disperse in the highly turbulent waters of Cook Inlet. Thus the potential effects of small spills to Cook Inlet beluga whales are immeasurably small and unlikely to occur.

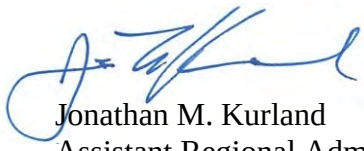
4. **Unrestricted passage between the critical habitat areas.**
   Cook Inlet belugas will not be restricted from travel within critical habitat due to the three round trip barge trips associated with this project. At most, we may expect ephemeral exclusion from, or deflection around, small portions of critical habitat should the barge occur in proximity to beluga whales. Such effects would cease as soon as the barge moved on. Thus adverse effects of the three project-related barge trips is expected to be insignificant.

Conclusion

Based on this analysis, NMFS concurs with your determination that the proposed action may affect, but is not likely to adversely affect, bearded seal (*Erignathus barbatus*), ringed seal (*Phoca hispida*), western DPS Steller sea lion (*Eumetopias jubatus*), North Pacific right whale (*Eubalaena japonica*), Mexico DPS humpback whale (*Megaptera novaeangliae*), Western North Pacific DPS humpback whale, fin whale (*Balaenoptera physalus*), sperm whale (*Physeter macrocephalus*), Cook Inlet beluga whale (*Delphinapterus leucas*), or bowhead whale (*Balaena mysticetus*), or designated Steller sea lion, Cook Inlet beluga, or North Pacific right whale critical habitat. Reinitiation of consultation is required where discretionary federal involvement or control over the action has been retained or is authorized by law and if (1) take of listed species occurs, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter, or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR § 402.16).

Please direct any questions regarding this letter to Sarah Pautzke at Sarah.Pautzke@noaa.gov.

Sincerely,



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References

Au, W. W. L. 2000. Hearing in whales and dolphins: An overview. Pages 1-42 *in* W. W. L. Au, A. N. Popper, and R. R. Fay, editors. Hearing by Whales and Dolphins. Springer-Verlag, New York.

Au, W. W. L., R. W. Floyd, R. H. Penner, and Murchiso.Ae. 1974. Measurement of echolocation signals of the Atlantic bottlenose dolphin, *Tursiops truncatus* Montagu, in open waters. Journal of the Acoustical Society of America 56(4):1280-1290.

Au, W. W. L., and M. Green. 2000. Acoustic interaction of humpback whales and whale-watching boats. Marine Environmental Research 49:469-481.

Au, W. W. L., A. A. Pack, M. O. Lammers, L. M. Herman, M. H. Deakos, and K. Andrews. 2006. Acoustic properties of humpback whale songs. Journal of the Acoustical Society of America 120(August 2006):1103-1110.

Bain, D. E., J. C. Smith, R. Williams, and D. Lusseau. 2006. Effects of vessels on behavior of Southern Resident killer whales (*Orcinus* spp.), NMFS Contract Report No. AB133F-03-SE-0959 and AB133F-04-CN-00040.

Baker, C. S., A. Perry, and G. Vequist. 1988. Humpback whales of Glacier Bay, Alaska. Whalewatcher 22:13-17.

Baker, C. S., J. M. Straley, and A. Perry. 1992. Population characteristics of individually identified humpback whales in southeastern Alaska: summer and fall 1986. Fishery Bulletin 90:429-437.

Bauer, G., and L. M. Herman. 1986. Effects of vessel traffic on the behavior of humpback whales in Hawaii, Final report to the National Marine Fisheries Service, Honolulu, Hawaii.

Bisson, L. N., H.J. Reider, H.M. Patterson, M. Austin, J.R. Brandon, T. Thomas, and M. L. Bourdon. 2013. Marine mammal monitoring and mitigation during exploratory drilling by Shell in the Alaskan Chukchi and Beaufort seas, July–November 2012: Draft 90-Day Report. Report from LGL Alaska Research Associates Inc., Anchorage, AK, and JASCO Applied Sciences, Victoria, BC, for Shell Offshore Inc, Houston, TX, NMFS, Silver Spring, MD, and U.S. Fish and Wild. Serv., Anchorage, AK, LGL Rep. P1272D–1.

Blane, J. M., and R. Jaakson. 1994. The impact of ecotourism boats on the St Lawrence beluga whales. Environmental Conservation 21(3):267-269.

BLM. 2019. Biological Evaluation for the Implementation of the Oil and Gas Lease Sales for the Arctic Wildlife Refuge Coastal Plain.

Boyd, C., R. C. Hobbs, A. E. Punt, K. E. W. Shelden, C. L. Sims, and P. R. Wade. 2019. Bayesian estimation of group sizes for a coastal cetacean using aerial survey data. Marine Mammal Science.

Brower, A. A., J. T. Clarke, and M. C. Ferguson. 2018. Increased sightings of subArctic cetaceans in the eastern Chukchi Sea, 2008–2016: population recovery, response to climate change, or increased survey effort? Polar Biology 41(5):1033-1039.

Calkins, D. G., and K. W. Pitcher. 1982. Population assessment, ecology, and trophic relationships of Steller sea lion in the Gulf of Alaska. Pages 447-546 *in* Environmental assessment of the Alaska continental shelf. U.S. Department of Commerce and U.S. Department of Interior, Juneau, AK.

Delean, B. J., V. T. Helker, M. M. Muto, K. Savage, S. Teerlink, L. A. Jemison, K. Wilkinson, J. Jannot, and N. C. Young. 2020. Human-caused mortality and injury of NMFS-managed Alaska marine mammal stocks 2013-2017. NOAA Tech. Memo. NMFS-AFSC-401

Di Lorio, L., and C. W. Clark. 2010. Exposure to seismic survey alters blue whale acoustic communication. Biology Letters 6(1):51-54.

Edds, P., and J. Macfarlane. 1987. Occurrence and general behavior of balaenopterid cetaceans summering in the St. Lawrence Estuary, Canada. Canadian Journal of Zoology 65(6):1363-1376.

Edds, P. L. 1988. Characteristics of finback Balaenoptera physalus vocalizations in the St. Lawrence Estuary. Bioacoustics 1:131-149.

Erbe, C. 2002a. Hearing abilities of baleen whales. Defense Research and Development Canada.

Erbe, C. 2002b. Hearing abilities of baleen whales. Defence R&D Canada – Atlantic report CR 2002-065. Contract Number: W7707-01-0828. 40pp.

Evans, P. G. H., P. J. Canwell, and E. Lewis. 1992. An experimental study of the effects of pleasure craft noise upon bottle-nosed dolphins in Cardigan Bay, West Wales. Pages 43-46 *in* Proceedings of the Sixth Annual Conference of the European Cetacean Society, 20-22 February 1992, San Remo, Italy.

Evans, P. G. H., Q. Carson, P. Fisher, W. Jordan, R. Limer, and I. Rees. 1994. A study of the reactions of harbour porpoises to various boats in the coastal waters of southeast Shetland. European Research on Cetaceans 8:60-64.

Fisheries and Oceans Canada. 2010. Management plan for the Steller sea lion (*Eumetopias jubatus*) in Canada [Final].

Frazer, L. N., and E. Mercado III. 2000. A sonar model for humpback whale song. Ieee Journal of Oceanic Engineering 25(1):160-182.

Funk, D. W., D. S. Ireland, R. Rodrigues, and W. R. Koski. 2010. Joint monitoring program in the Chukchi and Beaufort Seas, open water seasons, 2006-2008. Draft final report prepared by LGL Alaska Research Associates Inc., Greenridge Sciences, and JASCO Applied Sciences for the National Marine Fisheries Service and U.S. Fish and Wildlife Service, LGL Draft Final Report P1050-2.

Goddard, P. D., and D. J. Rugh. 1998. A group of right whales seen in the Bering Sea in July 1996. Marine Mammal Science 14(2):344-349.

Goodwin, L., and P. A. Cotton. 2004. Effects of boat traffic on the behaviour of bottlenose dolphins (*Tursiops truncatus*). Aquatic Mammals 30(2):279-283.

Goold, J. C., and S. E. Jones. 1995. Time and frequency domain characteristics of sperm whale clicks. Journal of the Acoustical Society of America 98(3):1279-1291.

Greene, C. R. J., and S. E. Moore. 1995. Man-made noise. Pages 101-158 *in* W. J. Richardson, C. R. Greene, C. I. Malme, and D. H. Thomson, editors. Marine Mammals and Noise. Academic Press, San Diego, CA.

Heptner, L. V. G., K. K. Chapskii, V. A. Arsenev, and V. T. Sokolov. 1976. Bearded seal. *Erignathus barbatus* (Erxleben, 1777). Pages 166-217 *in* L. V. G. Heptner, N. P. Naumov, and J. Mead, editors. Mammals of the Soviet Union. Volume II, Part 3--Pinnipeds and Toothed Whales, Pinnipedia and Odontoceti, volume 2, Part 3. Vysshaya Shkola Publishers, Moscow, Russia.

Hill, P. S., J. L. Laake, and E. Mitchell. 1999. Results of a pilot program to document interactions between sperm whales and longline vessels in Alaska waters. NOAA Technical Memorandum NMFS-AFSC-108

Jansen, J., J. Bengtson, P. Boveng, S. Dahle, and J. Ver Hoef. 2006. Disturbance of harbor seals by cruise ships in Disenchantment Bay, Alaska: an investigation at three spatial and temporal scales. AFSC Processed Report 2006-02

Jansen, J. K., P. L. Boveng, S. P. Dahle, and J. L. Bengtson. 2010. Reaction of harbor seals to cruise ships. Journal of Wildlife Management 74(6):1186-1194.

Jeffries, S. J., P. J. Gearin, H. R. Huber, D. L. Saul, and D. A. Pruett. 2000. Atlas of seal and sea lion haulout sites in Washington.

Jurasz, C. M., and V. P. Jurasz. 1979. Feeding modes of the humpback whale, *Megaptera novaeangliae*, in Southeast Alaska. Scientific Reports of the Whales Research Institute 31:69-83.

Koski, W. R., and S. R. Johnson. 1987. Responses of bowhead whales to an offshore drilling operation in the Alaskan Beaufort Sea, Autumn 1986: behavioral studies and aerial photogrammetry. Report prepared by LGL Limited for Shell Western E&P, Inc., Anchorage, AK.

Krieger, K. J., and B. L. Wing. 1986. Hydroacoustic monitoring of prey to determine humpback whale movements. NOAA Technical Memorandum NMFS F/NWC-98

Kruse, S. 1991. The interactions between killer whales and boats in Johnstone Strait, B.C. K. Pryor, and K. Norris, editors. Dolphin Societies - Discoveries and Puzzles. University of California Press, Berkeley, California.

Kucey, L. 2005. Human disturbance and the hauling out behaviour of Steller sea lions (*Eumetopias jubatus*). University of British Columbia, Vancouver, B.C.

Lair, S., L. N. Measures, and D. Martineau. 2015. Pathologic Findings and Trends in Mortality in the Beluga (*Delphinapterus leucas*) Population of the St Lawrence Estuary, Quebec, Canada, From 1983 to 2012. Veterinary Pathology 53(1):22-36.

Laist, D. W., A. R. Knowlton, J. G. Mead, A. S. Collet, and M. Podesta. 2001. Collisions between ships and whales. Marine Mammal Science 17(1):35-75.

Lusseau, D. 2003. Effects of tour boats on the behavior of bottlenose dolphins: Using Markov chains to model anthropogenic impacts. Conservation Biology 17(6):1785-1793.

Lusseau, D. 2006. The short-term behavioral reactions of bottlenose dolphins to interactions with boats in Doubtful Sound, New Zealand. Marine Mammal Science 22(4):802-818.

Lusseau, D., and L. Bejder. 2007. The long-term consequences of short-term responses to disturbance: experiences from whalewatching impact assessment. International Journal of Comparative Psychology 20(2):228-236.

Magalhaes, S., R. Prieto, M. A. Silva, J. Goncalves, M. Afonso-Dias, and R. S. Santos. 2002. Short-term reactions of sperm whales (*Physeter macrocephalus*) to whale-watching vessels in the Azores. Aquatic Mammals 28(3):267-274.

Manning, T. H. 1974. Variation in the skull of the bearded seal, Erignathus barbatus (Erxleben). Biological Papers of the University of Alaska 16:1-21.

McGuire, T., M. Blees, and M. Bourdon. 2011. Photo-identification of beluga whales in upper Cook Inlet, Alaska. Final report of field activities and belugas resighted in 2009. Report

prepared by LGL Alaska Research Associates, Inc., Anchorage, AK, for National Fish and Wildlife Foundation, Chevron, and ConocoPhillips Alaska. Inc.
Mellinger, D. K., K. M. Stafford, and C. G. Fox. 2004a. Seasonal occurrence of sperm whale (*Physeter macrocephalus*) sounds in the Gulf of Alaska, 1999–2001. Marine Mammal Science 20(1):48-62.
Mellinger, D. K., K. M. Stafford, S. E. Moore, U. Munger, and C. G. Fox. 2004b. Detection of North Pacific right whale (*Eubalaena japonica*) calls in the Gulf of Alaska. Marine Mammal Science 20(4):872-879.
Miles, P. R., C. I. Malme, and W. J. Richardson. 1987. Prediction of drilling site-specific interaction of industrial acoustic stimuli and endangered whales in the Alaskan Beaufort Sea.
Mizroch, S. A., and D. W. Rice. 2013. Ocean nomads: Distribution and movements of sperm whales in the North Pacific shown by whaling data and Discovery marks. Marine Mammal Science 29(2):E136-E165.
Møhl, B., M. Wahlberg, P. T. Madsen, A. Heerfordt, and A. Lund. 2003. The monopulsed nature of sperm whale clicks. Journal of the Acoustical Society of America 114(2):1143-1154.
Moore, S. 2000. Detecting right whales using passive acoustics in SE Bering Sea.
Moore, S. E., J. M. Waite, N. A. Friday, and T. Honkalehto. 2002. Cetacean distribution and relative abundance on the central-eastern and the southeastern Bering Sea shelf with reference to oceanographic domains. Progress in Oceanography 55(1-2):249-261.
Munger, L., and J. Hildebrand. 2004. Final Report: Bering Sea Right Whales: Acoustic recordings and public outreach. NPRB Grant T-2100.
Muto, M. M., V. T. Helker, B. J. Delean, R. P. Angliss, P. L. Boveng, J. M. Breiwick, B. M. Brost, M. F. Cameron, P. J. Clapham, S. P. Dahle, M. E. Dahlheim, B. S. Fadely, M. C. Ferguson, L. W. Fritz, R. C. Hobbs, Y. V. Ivaschenko, A. S. Kennedy, J. M. London, S. A. Mizroch, R. R. Ream, E. L. Richmond, K. E. W. Shelden, K. L. Sweeney, R. G. Towell, P. R. Wade, J. M. Waite, and A. N. Zerbini. 2020. Alaska marine mammal stock assessments, 2019. NOAA Tech. Memo. NMFS-AFSC-404
Muto, M. M., V. T. Helker, R. P. Angliss, B. A. Allen, P. L. Boveng, J. M. Breiwick, M. F. Cameron, P. J. Clapham, S. P. Dahle, M. E. Dahlheim, B. S. Fadely, M. C. Ferguson, L. W. Fritz, R. C. Hobbs, Y. V. Ivashchenko, A. S. Kennedy, J. M. London, S. A. Mizroch, R. R. Ream, E. L. Richmond, K. E. W. Shelden, R. G. Towell, P. R. Wade, J. M. Waite, and A. N. Zerbini. 2018. Alaska marine mammal stock assessments, 2017. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-378, 382 p.
Neilson, J. L., C. M. Gabriele, A. S. Jensen, K. Jackson, and J. M. Straley. 2012. Summary of reported whale-vessel collisions in Alaskan waters. Journal of Marine Biology:106282.
NMFS. 2008a. Final Conservation Plan for the Cook Inlet beluga whale (*Delphinapterus leucas*). N. Department of Commerce.
NMFS. 2008b. Recovery plan for the Steller sea lion (*Eumetopias jubatus*). Revision.
NMFS. 2016a. Occurrence of Distinct Population Segments (DPSs) of Humpback Whales off Alaska. National Marine Fisheries Service, Alaska Region. Revised December 12, 2016.
NMFS. 2016b. Recovery Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*). National Marine Fisheries Service, Alaska Region, Protected Resources Division, Juneau, AK.

NMFS. 2018. Revision to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Acoustic Thresholds for Onset of Permanent and Temporary Threshold Shifts. U.S. Dept. of Commer., NOAA. NOAA Technical Memorandum NMFS-OPR-55, 178 p.

NMFS. 2019. Endangered Species Act Section 7(a)(2) Biological Opinion for Hilcorp Alaska and Harvest Alaska oil and gas activities, Cook Inlet, Alaska. Consultation number: AKRO-2018-00381

Nowacek, S. M., R. S. Wells, and A. R. Solow. 2001. Short-term effects of boat traffic on bottlenose dolphins, *Tursiops truncatus*, in Sarasota Bay, Florida. Marine Mammal Science 17(4):673-688.

Ognev, S. I. 1935. Mammals of U.S.S.R. and adjacent countries. Volume 3. Carnivora, volume 3. Glavpushnina NKVT, Moscow, Russia.

Parks, S. E., M. Johnson, D. Nowacek, and P. L. Tyack. 2011. Individual right whales call louder in increased environmental noise. Biology Letters 7(1):33-35.

Parks, S. E., D. R. Ketten, J. T. O'Malley, and J. Arruda. 2007. Anatomical predictions of hearing in the North Atlantic right whale. The Anatomical Record: Advances in Integrative Anatomy and Evolutionary Biology 290(6):734-744.

Payne, K., and R. Payne. 1985. Large scale changes over 19 years in songs of humpback whales in Bermuda. Zeitschrift fur Tierpsychologie 68(2):89-114.

Payne, R. 1978. A note on harassment. Pages 89-90 *in* K. S. Norris, and R. R. Reeves, editors. Report on a workshop on problems related to humpback whals (*Megaptera novaeangliae*) in Hawaii. Sea Life Inc., Makapuu Pt., HI.

Rice, D. W. 1998. Marine mammals of the world: Systematics and distribution. The Society for Marine Mammology, Lawrence, Kansas.

Richardson, W. J., C. R. Greene Jr, C. I. Malme, and D. H. Thomson. 1995a. Marine mammals and noise. Academic Press, Inc., San Diego, CA.

Richardson, W. J., C. R. Greene Jr., C. I. Malme, and D. H. Thomson. 1995b. Marine Mammals and Noise. Academic Press, San Diego, California.

Richardson, W. J., and C. I. Malme. 1993. Man-made noise and behavioral responses. Pages 631-700 *in* J. J. Burns, J. J. Montague, and C. J. Cowles, editors. The Bowhead Whale, volume Special Publication Number 2. Society for Marine Mammology, Allen Press, Inc., Lawrence, KS.

Rone, B. K., C. L. Berchok, J. L. Crance, and P. J. Clapham. 2012. Using air-deployed passive sonobuoys to detect and locate critically endangered North Pacific right whales. Marine Mammal Science 28(4):E528-E538.

Rone, B. K., A. Zerbini, A. S. Kennedy, and P. J. Clapham. 2010. Aerial surveys in the southeastern Bering Sea: Occurrence of the endangered North Pacific right whale (Eubalaena japonica) and other marine mammals during the summers of 2008 and 2009. Pages 149 *in* Alaska Marine Science Symposium, Anchorage, Alaska.

Salden, D. R. 1993. Effects of research boat approaches on humpback whale behavior off Maui, Hawaii, 1989-1993. Pages 94 *in* Tenth Biennial Conference on the Biology of Marine Mammals, Galveston, Texas.

Scheffer, V. B. 1958. Seals, sea lions and walruses: a review of the Pinnipedia. Stanford University Press, Palo Alto, CA.

Shelden, K. E. W., R. C. Hobbs, C. L. Sims, L. Vate Brattstrom, J. A. Mocklin, C. Boyd, and B. A. Mahoney. 2017. Aerial surveys, abundance, and distribution of beluga whales (Delphinapterus leucas) in Cook Inlet, Alaska, June 2016. NOAA National Marine Fisheries Service, Seattle, WA.

Shelden, K. E. W., and P. R. e. Wade. 2019. Aerial surveys, distribution, abundance, and trend of belugas (Delphinapterus leucas) in Cook Inlet, Alaska, June 2018. AFSC Processed Rep. 2019-09, 93 p. Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle WA 98115.

Silber, G. K. 1986. The relationship of social vocalizations to surface behavior and aggression in the Hawaiian humpback whales (*Megaptera novaeangliae*). Canadian Journal of Zoology 64(10):2075-2080.

Simmonds, M. P., and J. D. Hutchinson. 1996. The Conservation of Whales and Dolphins - Science and Practice. John Wiley & Sons.

Stafford, K. M., and D. K. Mellinger. 2009. Analysis of acoustic and oceanographic data from the Bering Sea, May 2006 – April 2007. North Pacific Research Board Final Report, NPRB Project #719, 24 pp.

Sternfeld, M. 2004. Ice Seals in the National Marine Fisheries Service Alaska Region (NMFS AKR) Stranding Records: 1982-2004.

Stewart, B. S., S. A. Karl, P. K. Yochem, S. Leatherwood, and J. L. Laake. 1987. Aerial surveys for cetaceans in the former Akutan, Alaska, whaling grounds. Arctic 40(1):33-42.

Terhune, J. M., R. E. A. Stewart, and K. Ronald. 1979. Influence of vessel noises on underwater vocal activity of harp seals. Canadian Journal of Zoology 57(6):1337-1338.

Thompson, P. O., W. C. Cummings, and S. J. Ha. 1986. Sounds, source levels, and associated behavior of humpback whales, Southeast Alaska. Journal of the Acoustical Society of America 80(3):735-740.

Thompson, P. O., L. T. Findley, and O. Vidal. 1992. 20-Hz pulses and other vocalizations of fin whales, *Balaenoptera physalus*, in the Gulf of California, Mexico. Journal of the Acoustical Society of America 92(6):3051-3057.

Tyack, P., and H. Whitehead. 1983. Male competition in large groups of wintering humpback whales. Behaviour 83(1/2):132-154.

Vanderlaan, A. S. M., and C. T. Taggart. 2007. Vessel collisions with whales: the probability of lethal injury based on vessel speed. Marine Mammal Science 23(1):144-156.

Vu, E. T., D. Risch, C. W. Clark, S. Gaylord, L. T. Hatch, M. A. Thompson, D. N. Wiley, and S. M. Van Parijs. 2012. Humpback whale song occurs extensively on feeding grounds in the western North Atlantic Ocean. Aquatic Biology 14(2):175-183.

Wade, P. R., T. J. Quinn II, J. Barlow, C. S. Baker, A. M. Burdin, J. Calambokidis, P. J. Clapham, E. Falcone, J. K. B. Ford, C. M. Gabriele, R. Leduc, D. K. Mattila, L. Rojas-Bracho, J. Straley, B. L. Taylor, J. Urbán R., D. Weller, B. H. Witteveen, and M. Yamaguchi. 2016. Estimates of abundance and migratory destination for North Pacific humpback whales in both summer feeding areas and winter mating and calving areas. Paper SC/66b/IA21 submitted to the Scientific Committee of the International Whaling Commission, June 2016, Bled, Slovenia.

Watkins, W. A. 1981. Activities and underwater sounds of fin whales. Scientific Reports of the Whales Research Institute 33:83-117.

Watkins, W. A. 1986. Whale reactions to human activities in Cape Cod waters. Marine Mammal Science 2(4):251-262.

Watkins, W. A., P. Tyack, K. E. Moore, and J. E. Bird. 1987. The 20-Hz signals of finback whales (*Balaenoptera physalus*). Journal of the Acoustical Society of America 82(6):1901-1912.

Weilgart, L. S. 2007. A brief review of known effects of noise on marine mammals. International Journal of Comparative Psychology 20(2):159-168.

Weilgart, L. S., and H. Whitehead. 1993. Coda communication by sperm whales (*Physeter macrocephalus*) off the Galápagos Islands. Canadian Journal of Zoology 71(4):744-752.

Weir, C. R., A. Frantzis, P. Alexiadou, and J. C. Goold. 2007. The burst-pulse nature of 'squeal' sounds emitted by sperm whales (*Physeter macrocephalus*). Journal of the Marine Biological Association of the United Kingdom 87(1):39-46.

Wieting, D. S. 2016. Interim Guidance on the Endangered Species Act Term "Harass". Memorandum from the Director of the NMFS Office of Protected Resources to NMFS Regional Administrators

Williams, R., D. E. Bain, J. K. B. Ford, and A. W. Trites. 2002. Behavioural responses of male killer whales to a 'leapfrogging' vessel. Journal of Cetacean Research and Management 4(3):305-310.

Winn, H. E., P. J. Perkins, and T. C. Poulter. 1970. Sounds of the humpback whale. Pages 39-52 *in* Seventh Annual Conference on Biological Sonar and Diving Mammals, Stanford Research Institute, Menlo Park, California.

Zerbini, A. N., A. S. Kennedy, B. K. Rone, C. Berchok, P. J. Clapham, and S. E. Moore. 2009. Occurrence of the critically endangered North Pacific right whale (*Eubalaena japonica*) in the Bering Sea (Abstract). Pages 285-286 *in* 18th Bienn. Conf. Biol. Mar. Mamm, Québec, Canada.

Zerbini, A. N., J. M. Waite, J. L. Laake, and P. R. Wade. 2006. Abundance, trends and distribution of baleen whales off Western Alaska and the central Aleutian Islands. Deep Sea Research Part I: Oceanographic Research Papers 53(11):1772-1790.

NMFS Conclusion: FAA Determination

From: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Sent: Monday, June 14, 2021 8:32 AM
To: Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Lindberg, Sara E (DOT sponsored) <sara.lindberg@stantec.com>
Subject: RE: Effect Analysis for Deering Airport and Access Road Improvements. NMFS ESA Section 7 Impacts to Designated Humpback Whale Critical Habitats (86 FR 21082)

Paul,

Yes, concur. Please update the env doc and send it to me.

Thanks

Keith Gordon
Environmental Protection Specialist
Federal Aviation Administration
Alaska Region
222 West 7th Avenue, #14
Anchorage, AK 99513-7587
Desk – 907-271-5030
Fax – 907-271-2851

From: Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>
Sent: Monday, June 7, 2021 5:59 PM
To: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Lindberg, Sara E (DOT sponsored) <sara.lindberg@stantec.com>
Subject: Effect Analysis for Deering Airport and Access Road Improvements. NMFS ESA Section 7 Impacts to Designated Humpback Whale Critical Habitats (86 FR 21082)

Good evening Mr. Gordon:

On 12/10/2021, the Alaska Department of Transportation and Public Facilities (DOT&PF) initiated by letter, on behalf of the Federal Aviation Administration (FAA), an informal consultation with the National Marine Fisheries Service (NMFS) for potential Section 7 ESA impacts by the subject project (Attachment 1).

On 2/22/2021, a concurrence on the 12/10/2021 informal consultation finding was provided by NMFS (Attachment 2).

On 4/21/2021, new Critical Habitat (CH) designations for Central America DPS, Mexico DPS, and Western North Pacific DPS humpback whales were published by NMFS in the federal register (86 FR 21082), thereby adding two new areas of potential project ESA impacts.

Subsequent to the 4/21/2021 CH designations, DOT&PF has undertaken a detailed review of the *Final Rule to Designate Critical Habitat for the Central America, Mexico, and Western North Pacific Distinct Population Segments of Humpback Whales* (Rule) (https://www.fisheries.noaa.gov/action/final-rule-designate-critical-habitat-central-america-mexico-

and-western-north-pacific) and titles of the cited literature supporting its promulgation (https://media.fisheries.noaa.gov/2021-04/List%20of%20References.pdf?null=). Of 440+ citations, only 25 literature titles were suggestive of being pertinent to either of:

a) humpback whale prey species' life histories, distribution, population dynamics or environmental conditions driving those parameters; or,

b) ship or vessel impacts of any kind to marine mammals and/or their prey species, with these almost exclusively focused on impacts of hydroacoustic noise or pile driving.

Of those 25 references, only two provided data or information on direct or indirect effects of underway vessels or shipping practices on marine and/or freshwater fish and invertebrates:

1) Popper, A.N. and M.C. Hastings. 2009. The effects of anthropogenic sources of sound on fishes. *Journal of Fish Biology* 75: 455–489.

2) Weilgart, L. 2017. The impact of ocean noise pollution on fish and invertebrates. Oceancare and Dalhousie University. 24 pp.

Popper and Hastings (2009) focuses entirely on the adverse effects to fish by impulsive hydroacoustic noise such as piledriving and ship-based underwater seismic sampling. While important, these are not applicable to potential project-specific barging activities for the subject project. Alternatively, Weilgart (2017) does provide information on generalized vessel-related impacts to fish and invertebrates, the only directly applicable citation found in the Rule. However, that information also focuses on noise impacts caused by powered vessels' engines, hull movement and other anthropogenic 'ship noise' outputs while underway and, in most cases, general impacts resulting from repeated exposure of fishes and invertebrates to such noises in localized areas and over extended periods of time. Weilgart (2017) does provide several recommendations on general vessel management and noise mitigation: technological innovation, quieter operation, and avoiding routes immediately parallel to continental shelves to prevent noise entering deep sound channels. However the implementation of these recommendations is not reasonably anticipated to additionally reduce impacts on CH constituent elements that DOT&PF expects to occur over a potential 1-2 project-related barge trips for the subject project.

In summary, and based on additional discovery, review and analyses of available relevant information**, DOT&PF on behalf of FAA finds that project-specific barge use for the Deering Airport and Access Road Improvements Project would have No Effect on Designated Mexico DPS and Western North Pacific DPS humpback whale Critical Habitats (86 FR 21082)**, and recommends this finding be added to project environmental documentation with the 2/22/2021 concurrence by NMFS on potential project impacts to listed species and Critical Habitats as evaluated in the consultation submitted on 12/10/2021.

If you have any questions or need any additional information please contact me as noted below.

Thank you,

Paul Karczmarczyk, CWB®
Environmental Impact Analyst
DOT&PF
2301 Peger Road
Fairbanks, AK 99709
(907) 451-2288

"Keep Alaska Moving through service and infrastructure."

Appendix F: Essential Fish Habitat Consultation

EFH Initiation Letter

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

NORTHERN REGION
Design & Engineering Services

2301 Peger Road
Fairbanks, AK 99709-5316
Main: 907-451-2273
TTY: 711 or 1-800-770-8973
dot.alaska.gov

January 25, 2021

Mr. Matt Eagleton, Deputy Director and Regional Essential Fish Habitat Coordinator
NOAA-NMFS Alaska Region
Habitat Conservation Division
P.O. Box 21668
Juneau, AK 99802

Re: Deering Airport and Access Road Improvement
NFAPT00249/AIP TBA
Request for Initiation of Consultation on Essential Fish Habitat (EFH) under the Magnuson-Steven Fishery Conservation and Management Act (MSA)

Dear Deputy Director Eagleton:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), is proposing to carry out the project as described below and is requesting consultation under Section 305(b)(2)-(4) of the MSA for the Deering Airport and Access Road Improvements Project.

The proposed project would remedy Deering Airport deficiencies, bring the airport to current FAA design standards, and meet criteria identified in the Alaska Statewide Transportation Plan and Alaska Aviation System Plan. We expect work to commence in the winter of 2022/2023 and continue over a 1.5-2-year period, and to include the following actions:

- Rehabilitate and resurface the airport.
- Repair the runway embankments.
- Construct a new airport access road and new bridge over Smith Creek.
- Apply dust palliative to airport traffic surfaces.
- Replace the airport lighting system.
- Improve or re-establish sufficient airport drainage.
- Construct a snow fence.
- Use existing gravel bars of the Inmachuk River floodplain as material sources, and mobilize these materials and construction equipment to the airport construction area using the combined existing community barge landing and developed roads.

As described and summarized in the attached Essential Fish Habitat (EFH)Assessment, the proposed action Deering Airport and Access Road Project may generate short- and long-term adverse effects on fish habitat

and resources. However in conjunction with proposed Best Management Practices and conservation recommendations, DOT&PF, on behalf of FAA, has determined that the proposed action is Unlikely to Adversely Affect, or result in only de minimis, temporary, localized adverse effects, to EFH or EFH species. We respectfully request your review of the project and Assessment and, if in agreement, a written concurrence at your earliest convenience.

Thank you for your attention to this request, and if you have any questions regarding the proposed project you may contact Paul Karczmarczyk at (907) 451-2288 or paul.karczmarczyk@alaska.gov.

Sincerely,

Brett D Nelson

Brett Nelson
Regional Environmental Manager

Enclosure: Essential Fish Habitat Assessment; Deering Airport and Access Road Improvements, Deering, Alaska
pk/lmc
Copy to: Preconstruction\Projects\Deering Airport & Access Road Improvements
cc: Jonathan Hutchinson, P.E., Engineering Manager
Paul Karczmarczyk, Environmental Impact Analyst

Essential Fish Habitat Assessment

Deering Airport and Access Road Improvements
Deering, Alaska

January 2021

State Project Number: NFAPT00249

Prepared by:

Stantec Consulting Services Inc
725 East Fireweed Lane, Suite 200
Anchorage, AK 99503-2245
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TABLE OF CONTENTS

1.0 INTRODUCTION AND BACKGROUND

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes airport and access road improvements at Deering Airport, Deering, Alaska. The Deering Airport and Access Road Improvements Project is FAA funded through the Airport Improvement Program (AIP). The Deering Airport is located on the Seward Peninsula about 4,000 feet inland from the south shore of Kotzebue Sound near the mouth of the Inmachuk River and approximately 55 miles south of Kotzebue, Alaska (Figure 1).

The project purpose is to remedy Deering Airport deficiencies (Figure 2), bring the airport to current FAA design standards, and meet criteria identified in the Alaska Statewide Transportation Plan (ASTP) and Alaska Aviation System Plan (AASP). We expect work to commence in the winter of 2022/2023 and continue over a 1.5-2-year period.
Deering Airport has two gravel surfaced, perpendicular runways designated as Runway (RW) 3-21 and RW 12-30. Over time, winter snow removal operations have graded most surfacing off both runways' surfaces, resulting in persistent rutting and water ponding on the underlying runway embankment. Additionally, drifting snow collects west of the runways' intersection, requiring a substantial snow removal effort and creating springtime meltwater ponding adjacent the runway embankments. These conditions keep airport maintenance costs high. Additionally, the airfield's surface course and lighting system are beyond their useful life and need rehabilitation or replacement.

The Deering Airport and its access road are also subject to flooding due both to spring ice jams in the Inmachuk River and strong, periodic storm surges from Kotzebue Sound. For example, in 2015 and 2016, ice jams at the Inmachuk River mouth submerged portions of the airport access road (Deering-Inmachuk Road), which provides access between the Deering community and the airport (and also lies mostly off airport property). The ice jam also extended to one runway threshold embankment. In 2016, these conditions caused the State of Alaska to declare a community disaster at Deering. There are no documented flood events overtopping the airport surfaces.

The Proposed Action would include the following elements:

- Rehabilitate and resurface the airport.
- Repair the runway embankments.
- Construct a new airport access road and new bridge over Smith Creek.
- Apply dust palliative to airport traffic surfaces.
- Replace the airport lighting system.
- Improve or re-establish sufficient airport drainage.
- Construct a snow fence.
- Use existing gravel bars of the Inmachuk River floodplain as material sources, and mobilize these materials and construction equipment to the airport construction area using the combined existing community barge landing and developed roads.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that federal action agencies consult with the National Marine Fisheries Service (NMFS) when taking action that may impact the quality and/or quantity of Essential Fish Habitat (EFH). The proposed project would mine any of several identified gravel bars within the Inmachuk River upstream from the community to provide material for construction. (Figures 3-3d). Material source development would involve surface excavation of gravels and sand from existing, unvegetated alluvial deposits while avoiding excavation in vegetated portions of riverbank along riparian corridor. Material sourcing could occur at any time of year, however ice bridges and/or culverts would be required to cross braids of the Inmachuk River during any potential winter operations. Adequate setbacks, as determined through permitting, would be maintained to avoid breeching river channels.

The proposed project would also use the established community Kotzebue Sound barge landing zone adjacent to the community to import a portion of required material needs. The Inmachuk River is listed in the Anadromous Waters Catalog (AWC) by the Alaska Department of Fish and Game (ADF&G) as Stream No. 331-00-10750 (ADF&G 2020), providing anadromous fish habitats for:

- Chum Salmon (*Oncorhynchus keta*) (spawning),
- Pink Salmon (*O. gorbuscha*) (spawning), and
- Dolly Varden (*Salvelinus malma*) (present).

As the Inmachuk River is listed in the AWC for providing Pacific salmon habitat, it is considered EFH under the Fisheries Management Plan for Pacific Salmon (North Pacific Fishery Management Council, 2018).

The portion of Kotzebue Sound adjacent to Deering is listed as EFH by NMFS (2018) for:

- Arctic Cod (*Boreogadus saida*) (egg, larva, early juvenile, late juvenile, adult)
- Saffron Cod (*Eleginus gracilis*) (late juvenile, adult)
- Snow Crab (*Chionoecetes opilio*) (egg, adult, late juvenile)
- Chinook Salmon (*O. tshawytscha*) (immature)
- Chum Salmon (immature, juvenile, mature)
- Coho Salmon (*O. kisutch*) (juvenile, mature)
- Pink Salmon (juvenile, mature)
- Sockeye Salmon (*O. nerka*) (juvenile, immature, mature)

Additionally, Smith Creek, which flows through the community, is not listed in the AWC and has not been surveyed by ADF&G. Smith Creek is not known EFH or anadromous fish habitat, however, due to its direct connection to Inmachuk river, it is presumed to contain resident fish (M. Wessel, ADF&G, personal communication, Jan. 4, 2021).

2.0 PROPOSED ACTION

While multiple alternatives have been examined to address existing deficiencies and bring Deering Airport to current ASTP, AASP, and FAA design standards, DOT&PF has

determined the Proposed Action will fulfill the project purpose and need with the fewest environmental impacts of alternatives considered and dismissed.
The Proposed Action would include the following elements:

1) Rehabilitate and resurface the airport surfaces.
2) Repair runway embankments.
3) Construct a new airport access road, including a new bridge over Smith Creek.
4) Apply dust palliative to airport ground traffic surfaces.
5) Replace the airport lighting system.
6) Improve or re-establish sufficient airport drainage.
7) Construct a snow fence.
8) Utilize existing gravel bar(s) within the Inmachuk River floodplain, as well as remote commercial sources, for a project materials, and mobilize these materials and other equipment to the airport construction area using a combination of existing, developed community roads as well as the existing community barge landing on Kotzebue Sound.

Proposed Action elements potentially affecting EFH include: development of material source(s) within the Inmachuk River, hauling of materials from river bars within areas below ordinary high water, and use of the barge landing on Kotzebue Sound adjacent to Deering.

The selected contractor would determine the methods and means used to develop the material source(s). For purposes of this evaluation, the following assumptions are made:

- Temporary bridge(s), fill, or temporary culvert(s) may be required to cross Inmachuk River braids or divert water. Culverts would be sized and managed to maintain stream flows and fish passage.
- Adequate setbacks, as determined through permitting, would be maintained to avoid breeching the river channels.
- If required by the ADF&G Fish Habitat Permit, fish escapement channels would be constructed to prevent the trapping of fish in excavation areas.

3.0 ESSENTIAL FISH HABITAT

The 1996 Sustainable Fisheries Act reauthorized the MSA (MSA; 16 USC.1801, et seq.), introducing new requirements for the description and identification of EFH in fishery management plans. EFH is defined as waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (50 C.F.R. Part 600). Further, EFH is designated based on best available scientific information and the levels defined by the MSA (NMFS 2005):

- Level 1 information corresponds to distribution;
- Level 2 information corresponds to density or relative abundance;
- Level 3 information corresponds to growth, reproduction, or survival rates; and
- Level 4 information corresponds to production rates.

The Proposed Action falls within the Salmon Fisheries in the Exclusive Economic Zone (EEZ) off the Coast of Alaska (Salmon Fisheries Management Plans [FMP]). The Salmon FMP designated all waters offshore Alaska as EFH for all five species of Pacific salmon. In addition, the FMP designates all waters identified in the ADF&G Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes (familiarly the AWC) (ADF&G 2020) as important for Pacific salmon, as EFH. All EFH for Pacific salmon within the Proposed Action is based on Level 1 distribution information. Construction and operation of the material sources and barge landing would occur within designated EFH for Pacific salmon.

The Proposed Action also fall within the Arctic Fisheries in the EEZ off the Arctic Management Area (NMFS 2009). This FMP governs all impacts to Arctic Cod, Saffron Cod, and Snow Crab. All EFH descriptions are based on Level 1 distribution information. EFH text descriptions for all three marine species include nearshore waters from 0 to 50 meters. Use of the Deering barge landing would occur within designated EFH for Arctic Cod, Saffron Cod, and Snow Crab.

3.1 *Inmachuk River*

The Inmachuk River is a major drainage of the Seward Peninsula, flowing from rolling hills northward to the coastal community of Deering, and emptying into Kotzebue Sound. There is little published research available describing the river's ecology. The river has been extensively placer mined by dredging for gold (USGS 1999). It has produced a significant portion of the regional Fairhaven Districts total gold and silver production.

Inmachuk River salmon have been utilized as a subsistence resource in Deering. An ADF&G (1984) report provides that residents recognize three major salmon runs: pink salmon in July, followed by chum salmon, followed by coho salmon in mid-August to mid-September. A commercial salmon fishery was tested in 1974-75, but was discontinued due to ADF&G concerns about sustainability in salmon stocks. Most fishermen who participated in that study, and another in 1984, did not think that the potential impact to salmon stocks from a commercial fishery was large enough to be relevant (ADF&G 1984).

The latest community subsistence data available for Deering (2013) describe that the majority of subsistence foods harvest are caribou (65%) and bearded seal (10%) (ADF&G 2013). The next most frequently gathered foods are Chum Salmon (8%), Pink Salmon (3%), Coho Salmon (2%), Dolly Varden (2%), and Sheefish (*Stenodus leucichthys*) (1%) (ADF&G
2013).

4.0 ANALYSIS OF EFFECTS TO ESSENTIAL FISH HABITAT

4.1 *Material Source Development*

Construction of material sources within floodplains could have a variety of effects on EFH and EFH species (Limpinsel et al. 2017). Material extraction sources studied in Alaska's

Arctic and Subarctic floodplains have shown a variety of adverse and some beneficial effects on fish and fish habitat (Joyce et al. 1980; Ott et al. 2014). Direct effects could include creating turbidity, change of habitat, and alteration of channel morphology (Limpinsel et al. 2017). Fish entrapment potential was also documented at some sources where extraction sources left depressions in floodplains that were later flooded at high water and then became isolated as water dropped. Project planning and mitigation measures can reduce the potential for construction related impacts, through avoidance of active channels, implementation of best management practices (BMPs) to reduce turbidity, and reclamation practices that avoid fish entrapment.

Development of Inmachuk River material sources could affect EFH and EFH species as described above. A variety of mitigation measures would be implemented to mitigate impacts to EFH and EFH species. Adequate setbacks would be maintained to avoid breeching the river channels and creating areas that may entrap fish. These may also limit the amount of sediment laden stormwater exiting the source(s). If required by the ADF&G Fish Habitat permit, reclaimed excavation areas would be appropriately sloped and a connection channel would be constructed to provide a continuous drainage gradient and an exit to flowing waters for fish should they enter the excavation area after reclamation is complete.

Access to material sources from the bank would require crossing braids of the Inmachuk River. This may be accomplished by constructing temporary culverts, bridges, and/or winter ice bridges. Culverts would be sized and managed to maintain stream flows and fish passage.

4.2 *Barge Landing*

Direct effects to Kotzebue Sound would be limited to the use of existing barge landing facilities along the shoreline at Deering. While the barges are moored along the shoreline, they would occupy space which fish could consequently not occupy. Fish would be able to swim under or around the moored barges, allowing continued use of the surrounding natural habitat.

Indirect effects to Kotzebue Sound would be associated with short term increases in turbidity and suspended solids during barge movement. Barges, or their tugs, may cause increases in sediment as the barges are being maneuvered and/or landed. These are anticipated to be minimized by using existing barge landings.

4.3 *Fuel Spills*

There is potential for accidental release of fuel used in heavy equipment associated with material extraction. Fuel operations would be conducted under a Spill Prevention and Control Countermeasure (SPCC) plan to prevent impacts to surface water quality. These plans specify that refueling of heavy equipment takes place a minimum distance from surface waters.

5.0 AVOIDANCE AND MINIMIZATION

The following measures are identified to avoid, minimize or mitigate potential effects to fishes and fish habitats.

General:

- Compliance with the Alaska Pollutant Discharge Elimination System (APDES), Construction General Permit (CGP), and implementation of the required Stormwater Pollution Prevention Plan (SWPPP) and BMPs during construction, would reduce the potential for sediment laden storm water runoff during construction. Stabilization of side slopes with vegetation or non-erodible material would also be implemented as part of CGP compliance to further reduce the potential for sedimentation of nearby streams.
- Construction of all crossing structures would adhere to appropriate BMPs for in-stream work to minimize potential effects to fishes and fish habitats from sediment mobilization and transport, and accidental contaminant spills.

Material Source Development:

- Impacts to Inmachuk River would be minimized through temporary bridge(s) or temporary culvert(s). Culverts would be sized and managed to maintain stream flows and fish passage.
- Adequate setbacks, as determined through permitting, would be maintained to avoid breeching the river channels.

Barge Landing:

- Existing barge landings would be used, and expansion of existing barge landings or construction of new barge landings would be avoided.

Fueling:

- Fuel operations would be conducted under a SPCC plan to prevent impacts to surface water quality.
-

6.0 CONSERVATION RECOMMENDATIONS

The Proposed Action contains features designed to reduce the potential for effects on EFH species. Conservation measures include:

Material Source Development:

- If required by the ADF&G Fish Habitat Permit, reclaimed excavation areas would be appropriately sloped and a fish escapement channel would be excavated to prevent the trapping of fish in the excavation area.

Fueling:

- SPCC plans would recommend fueling equipment take place a minimum distance from flowing waters.

7.0 CONCLUSIONS

Development of the Deering Airport and Access Road Project may have short- and long-term adverse effects on EFH. However, as described throughout this evaluation and summarized below for each component of the Proposed Action, and in conjunction with proposed conservation recommendations and BMPs, is Unlikely to Adversely Affect, or result in only de minimis, temporary, localized adverse effects to EFH or EFH species.

7.1 *Material Sources*

Development of the material sources could have long-term adverse effects on EFH and EFH species without implementation of proposed mitigation measures.

7.1.1 *Determination*

May Adversely Affect/Adverse Effects Minor to Moderate: The material sources are located within EFH and their development could have adverse effects on EFH. The material source locations are dynamic, with seasonal flooding, and surrounded by the active channel of a meandering river. The source would be sized and placed adequately distant from the active channel to reduce the potential for river capture. Access to this source would be designed to minimize adverse impacts to side channels. Despite the potential adverse effects, population level effects to salmon would not be expected as this section of the Inmachuk River is not listed as supporting rearing or spawning habitat.

7.2 *Barge Landing*

Use of the barge landing could lead to localized increases in turbidity and moored barges would physically occupy potential fish habitat. These effects are anticipated to be temporary and localized, given the surrounding, ubiquitous availability of substitute habitats.

7.2.1 *Determination*

No Adverse Effects: The primary potential to adversely affect EFH would be from material source development. No population level effects would be anticipated for use of the barge landing.

8.0 REFERENCES

ADF&G. 1984. Background paper on subsistence salmon fishery, Inmachuk River, Deering. Technical Paper #110. Prepared by Sandra Sobelman. Retrieved December 18, 2020 from https://www.adfg.alaska.gov/techpap/tp110.pdf

ADF&G. 2013. Community Subsistence Information System. Deering. Retrieved December 18, 2020 from https://www.adfg.alaska.gov/sb/CSIS/index.cfm?ADFG=main.home

ADF&G. 2020. Anadromous Waters Catalog. Accessed online December 17, 2020 at https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.interactive

Joyce, M.R., Rundquist, L.A., Moulton, L.L. 1980. Gravel removal guidelines manual for Arctic and Subarctic floodplains. US Dept. of Interior. U.S. Fish and Wildlife Service. Water Resource Analysis Project, Office of Biological Services. 169 pp.

Limpinsel, D. E., Eagleton, M. P., and Hanson, J. L. 2017. Impacts to Essential Fish Habitat from Non-Fishing Activities in Alaska. EFH 5 Year Review: 2010 through 2015. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-F/AKR-14, 229p. Accessed online December 17, 2020 at ftp://ftp.library.noaa.gov/noaa_documents.lib/NMFS/TM_NMFS_AFKR/TM_NMFS_FAKR_14.pdf

National Marine Fisheries Service (NMFS). 2005. Final Environmental Impact Statement for Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska. Volume 2, Appendix D. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Alaska Region.

NMFS. 2009. Fishery Management Plan for Fish Resources of the Arctic Management Area. Retrieved December 17, 2020 from https://www.npfmc.org/wp-content/PDFdocuments/fmp/Arctic/ArcticFMP.pdf

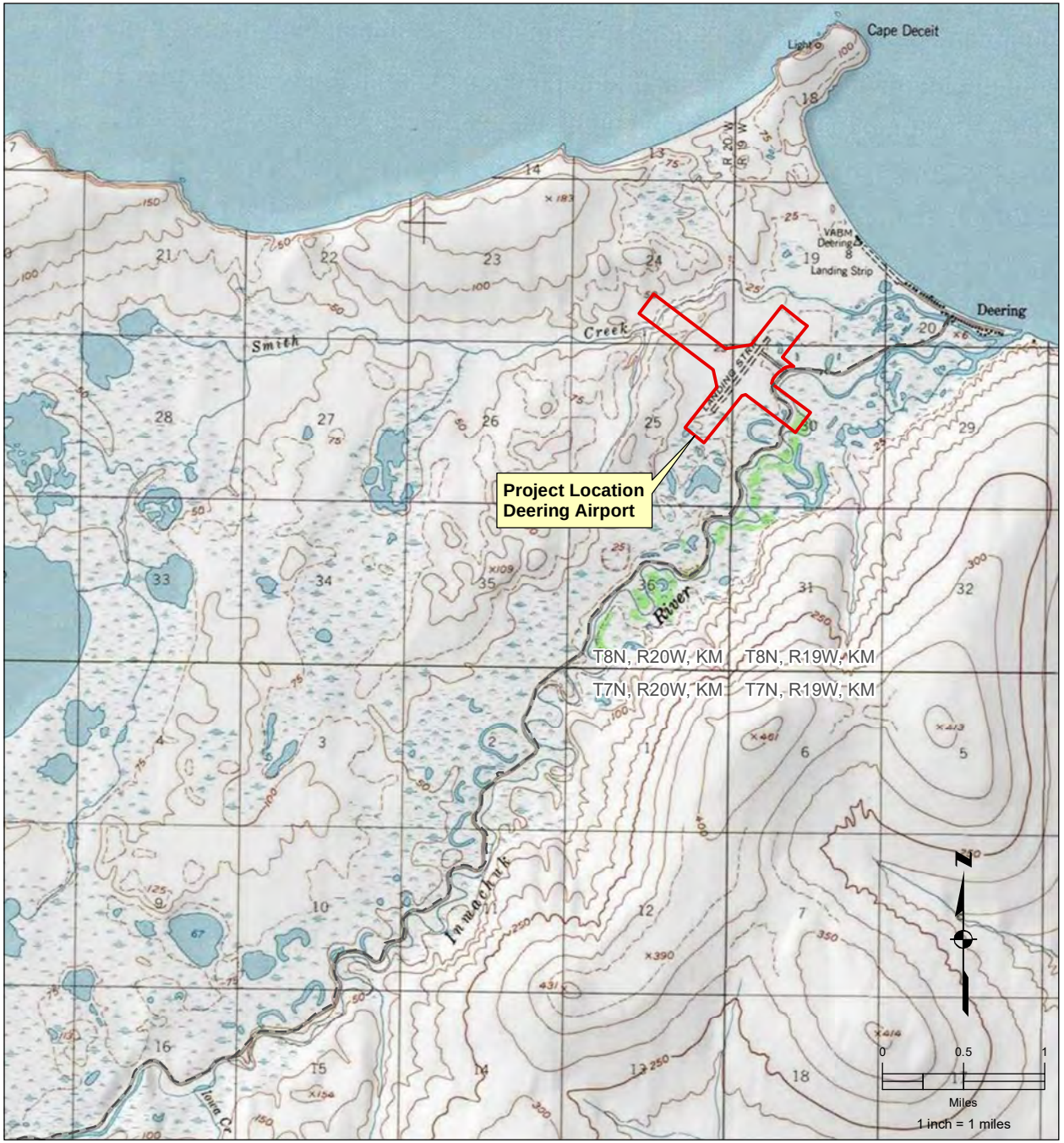
NMFS. 2018. Alaska Essential Fish Habitat (EFH) Species Shapefiles. Retrieved December 17, 2020 from https://www.fisheries.noaa.gov/resource/data/alaska-essential-fish-habitat-efh-species-shapefiles

North Pacific Fishery Management Council. 2018. Fisheries Management Plan for the Salmon Fisheries in the EEZ Off Alaska. Accessed January 4, 2021 at https://www.npfmc.org/wp-content/PDFdocuments/fmp/Salmon/SalmonFMP.pdf

Ott, A.G., J.F. Winters, W.A. Morris, and P.T. Bradley. 2014. North Slope flooded gravel mine sites, case histories. Alaska Dept. of Fish and Game. Juneau, AK. 76 pp.

USGS. 1999. Alaska Resource Data File. Inmachuk River. Retrieved December 18, 2020 from https://mrdata.usgs.gov/ardf/show-ardf.php?ardf_num=BN067

9.0 FIGURES



Project Origin: City of Deering
Cape Nome Recording District,
Township 08N, Range 20W, Section: 25
Township 08N, Range 19W, Section: 19 & 30
Kateel River Meridian
USGS: KOTZEBUE (A-2) ALASKA
Deering Airport
Latitude: 66.0691 N
Longitude: -162.7670 W

Legend

– – Deering Road (Existing)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Pager Road Fairbanks, AK 99709

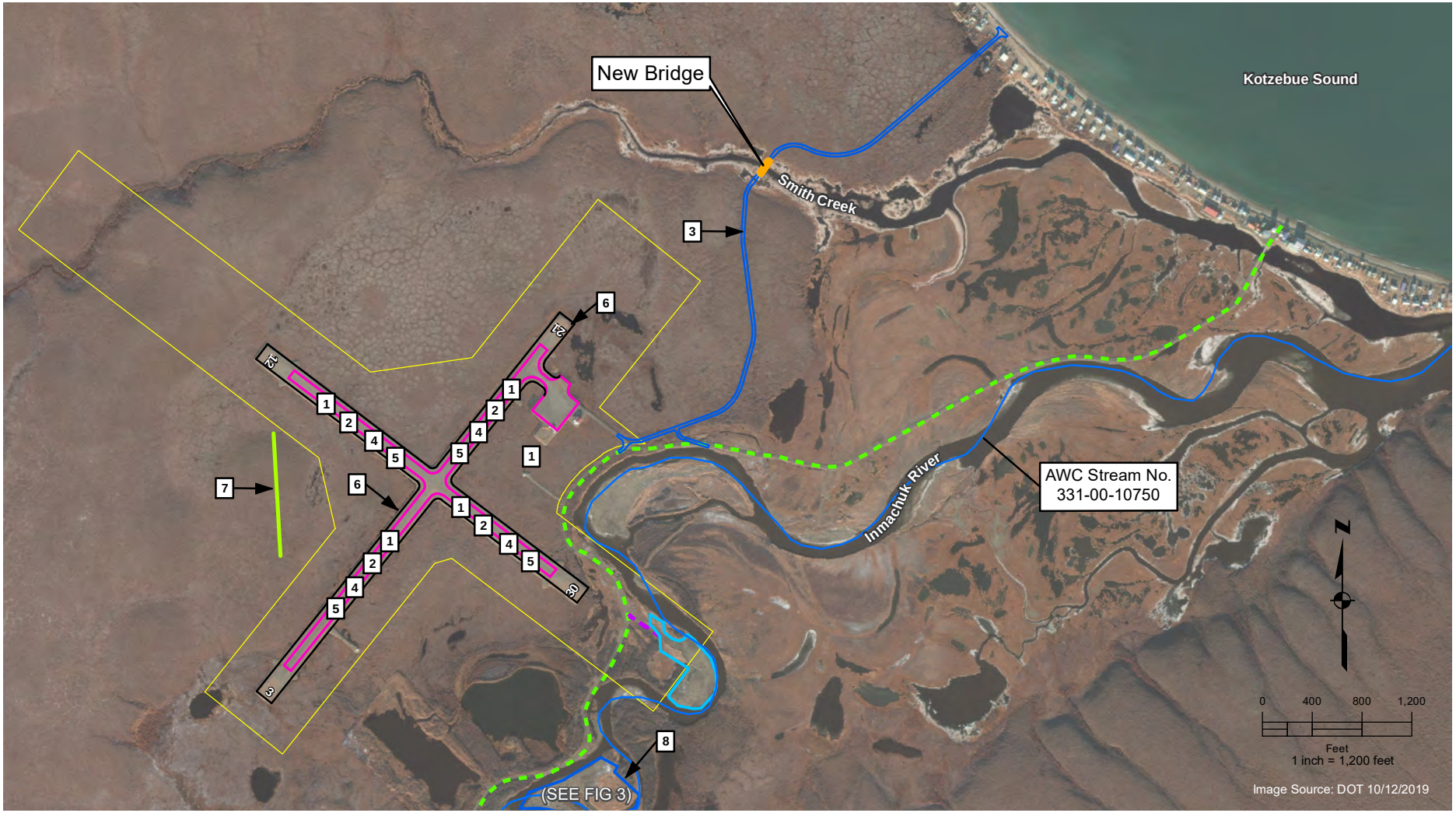
Deering Airport and Access Road Improvements

Location & Vicinity Map

Essential Fish Habitat Consultation

DATE: January, 2021 | FIG. 1

Document Path: U:\2047062400\gis\mxd\essential_fish_habitat\2047062400_EFH_Fig01_Loc_Vic.mxd



Proposed Action Items:

1. Rehabilitate and Resurface Airport Surfaces
2. Repair Runway Embankments
3. Construct a New Airport Access Road and New Bridge
4. Apply Dust Palliative to Airport Ground Traffic Surfaces
5. Replace Airport Lighting System
6. Improve or Re-Establish Airport Drainage
7. Construct New Snow Fence
8. Utilize Existing Gravel Bar(s) for Material Source (See Figure3). Haul Material to Airport using Existing Barge Landing and Developed Roads

- Edge of Runway/Apron Pavement Area
- New Airport Access Road
- Runway/Taxiway Safety Area
- Snow Fence
- Proposed Bridge
- Existing Airport Boundary
- Potential Material Sites
- Potential Staging Area
- Deering Road
- Existing Access
- Anadromous Waters Catalog (AWC) Streams

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Pager Road Fairbanks, AK 99709

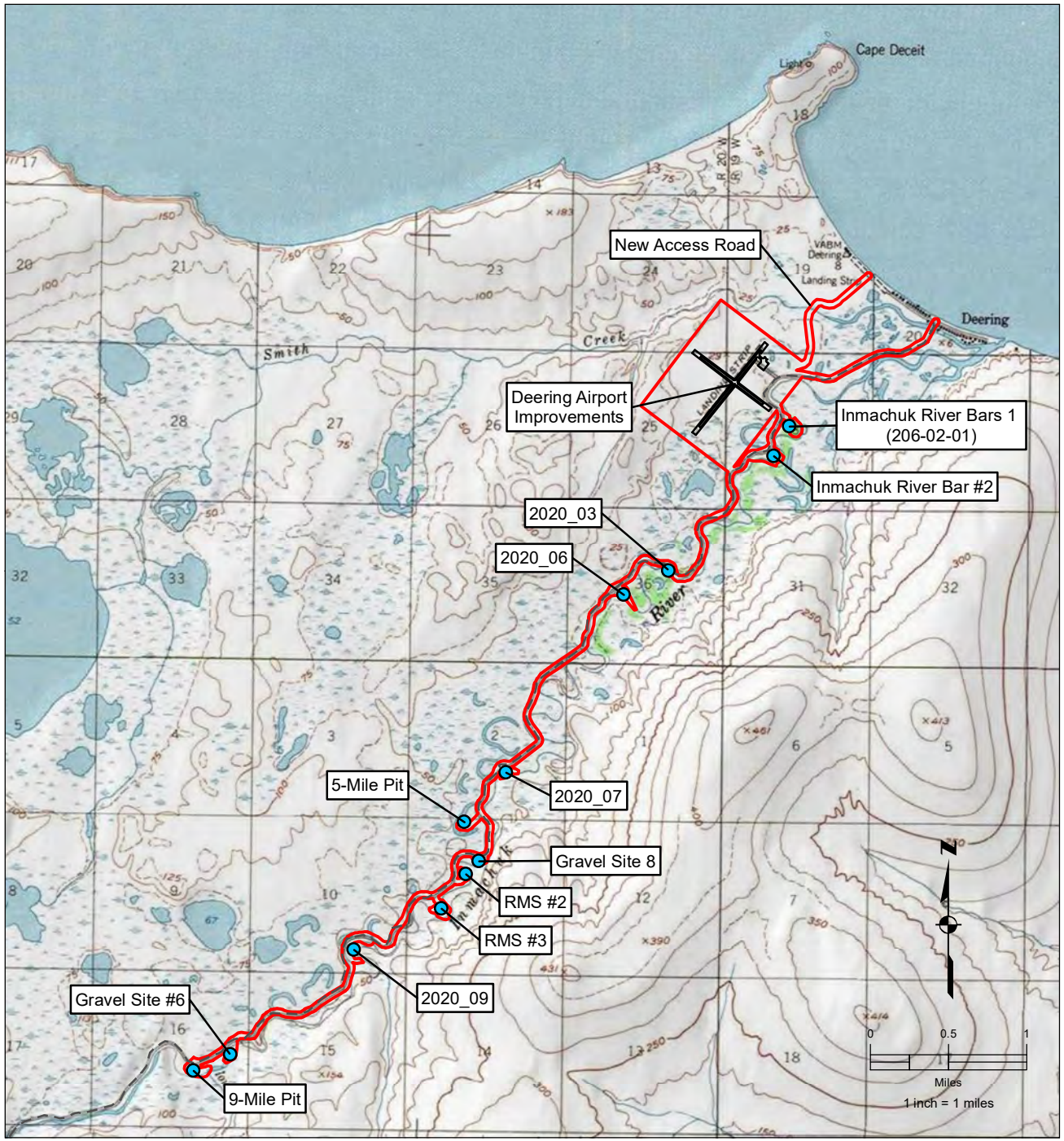
Deering Airport and Access Road Improvements

Proposed Action Site Plan

Essential Fish Habitat Consultation

DATE: January, 2021 | FIG. 2

Document Path: U:\2047062400\gis\mxd\essential_fish_habitat\2047062400_EFH_Fig02_Site_Plan.mxd



Legend

- Deering Road (Existing)
- Study Area
- Potential Material Sites/Staging

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
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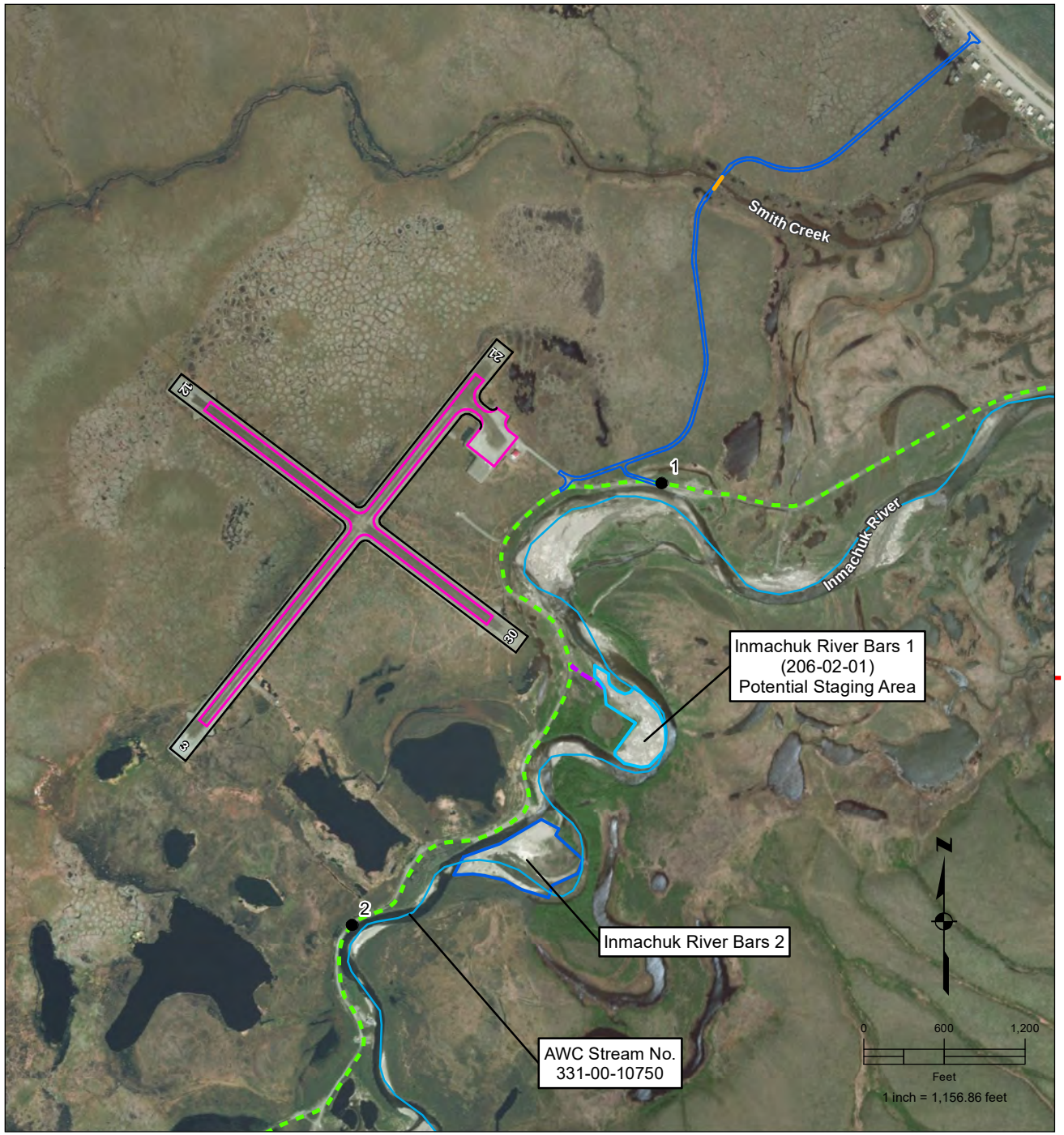
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas Overview

Essential Fish Habitat Consultation

DATE: January, 2021 | FIG. 3

Document Path: U:\2047062400\gis\mxd\essential_fish_habitat\2047062400_EFH_Fig03_Mat_Source.mxd



Legend

- Potential Material Sites
- Potential Staging Area
- Runway/Taxiway Safety Area
- Edge of Runway/Apron Pavement Area
- Proposed West Airport Access Road
- Proposed Bridge
- Anadromous Waters Catalog (AWC) Streams
- Deering Road
- Existing Material Site/Staging Access
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
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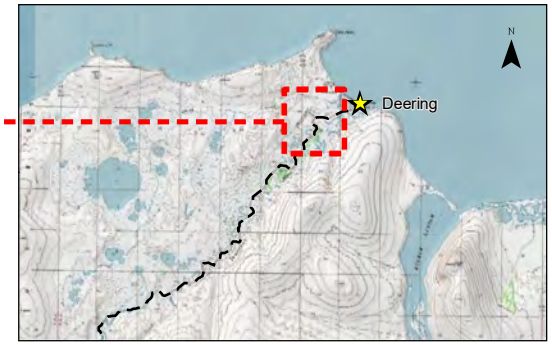

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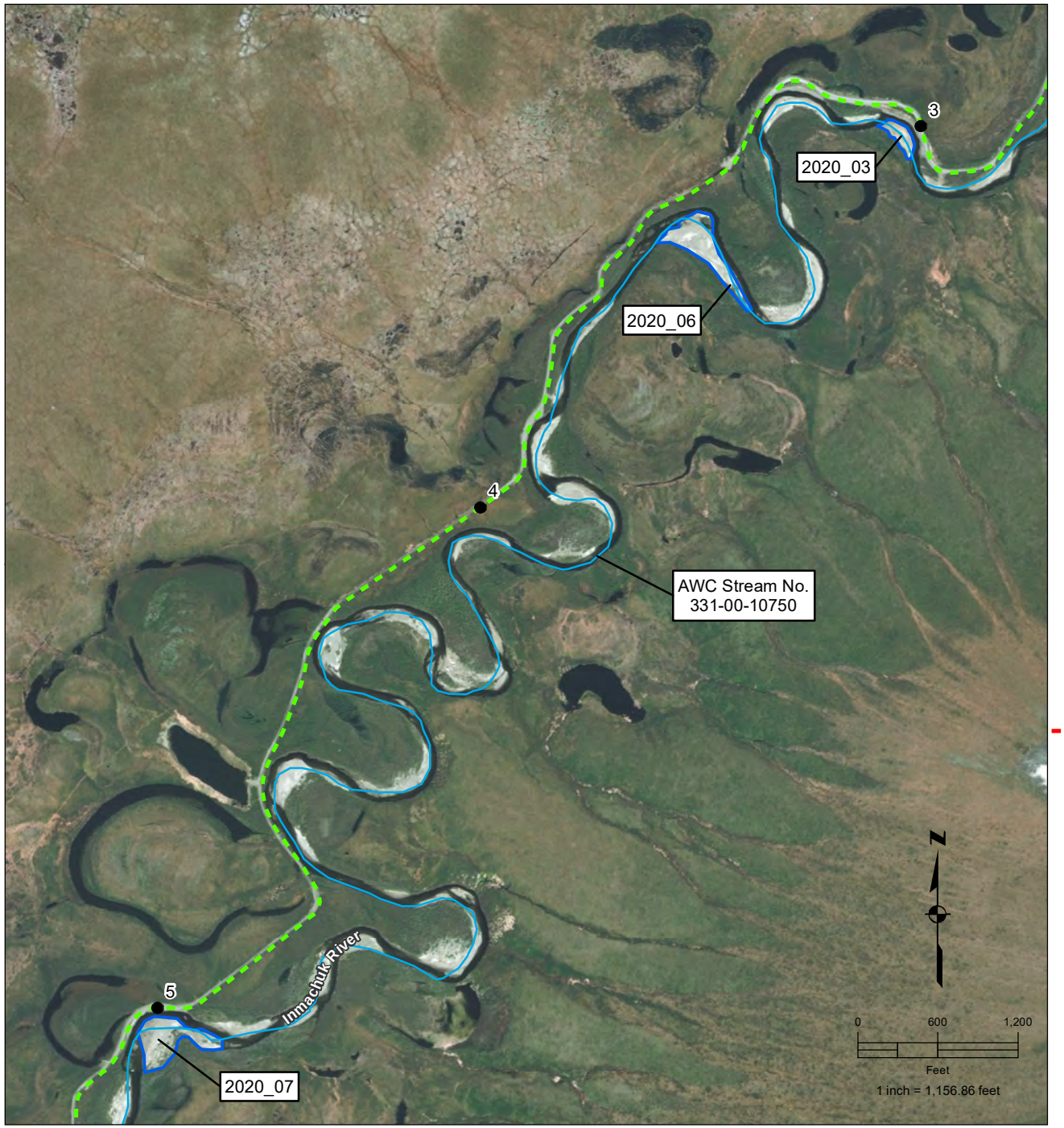
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Essential Fish Habitat Consultation

DATE: January, 2021 | FIG. 3a

Document Path: U:\2047062400\gis\mxd\essential_fish_habitat\2047062400_EFH_Fig03a_Mat_Source_Detail.mxd



Legend

- Potential Material Sites
- Anadromous Waters Catalog (AWC) Streams
- Deering Road
- Existing Material Site/Staging Access
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
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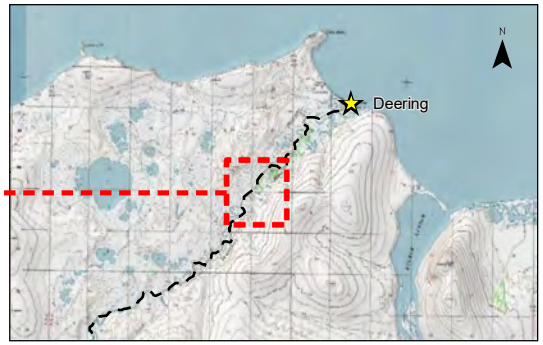

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Department of Transportation and Public Facilities
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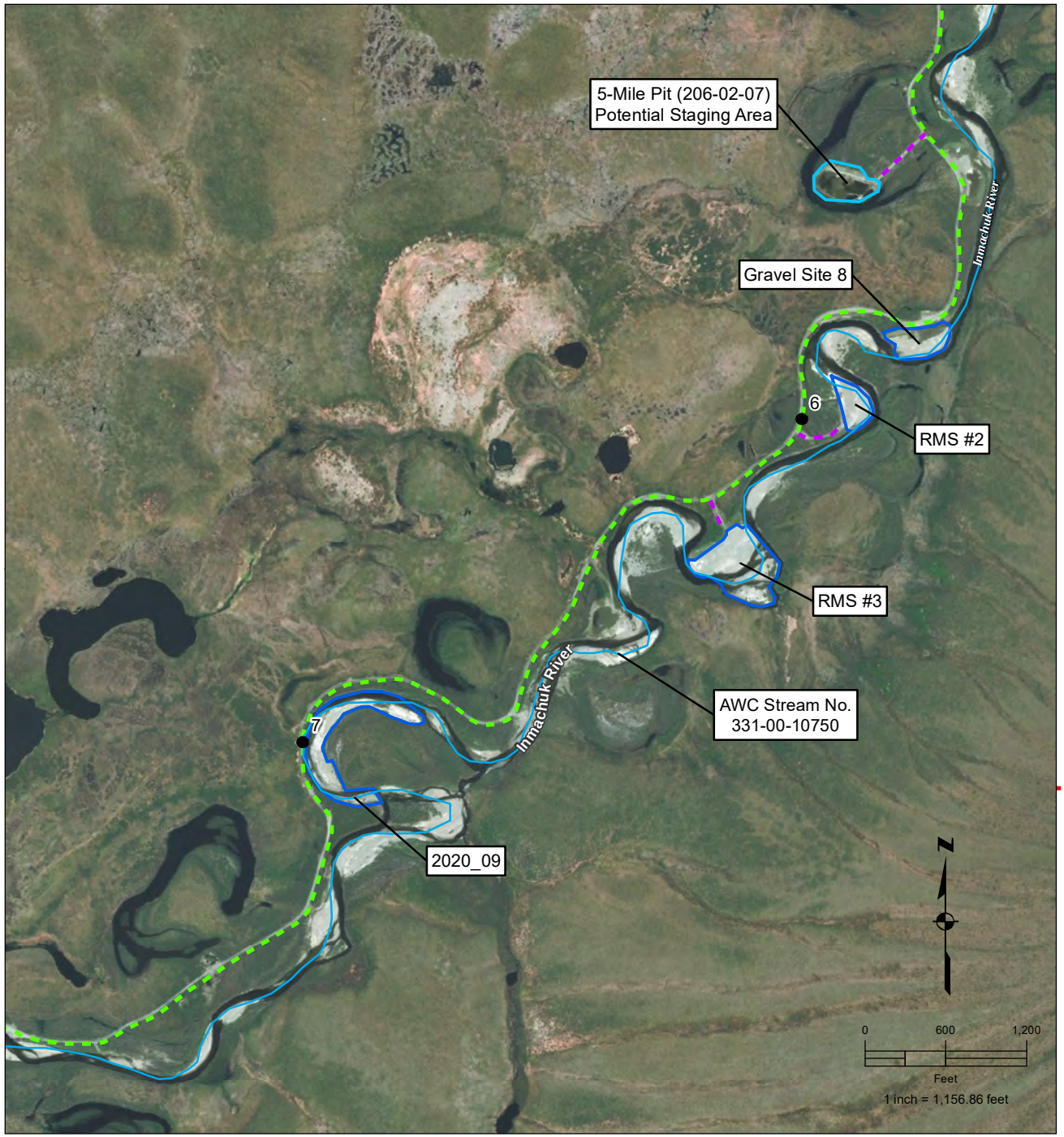
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Essential Fish Habitat Consultation

DATE: January, 2021 | FIG. 3b

Document Path: U:\2047062400\gis\mxd\essential_fish_habitat\2047062400_EFH_Fig03a_Mat_Source_Detail.mxd



Legend

- Potential Material Sites
- Potential Staging Area
- Anadromous Waters Catalog (AWC) Streams
- Deering Road
- Existing Material Site/Staging Access
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
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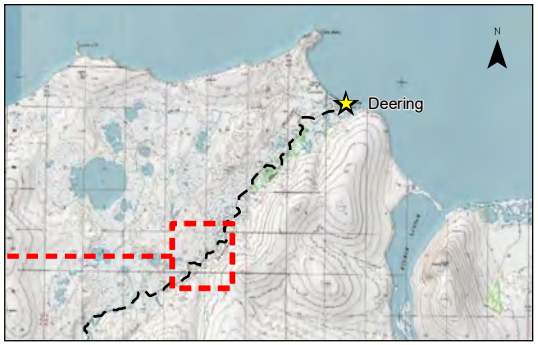

STATE OF ALASKA
Department of Transportation and Public Facilities
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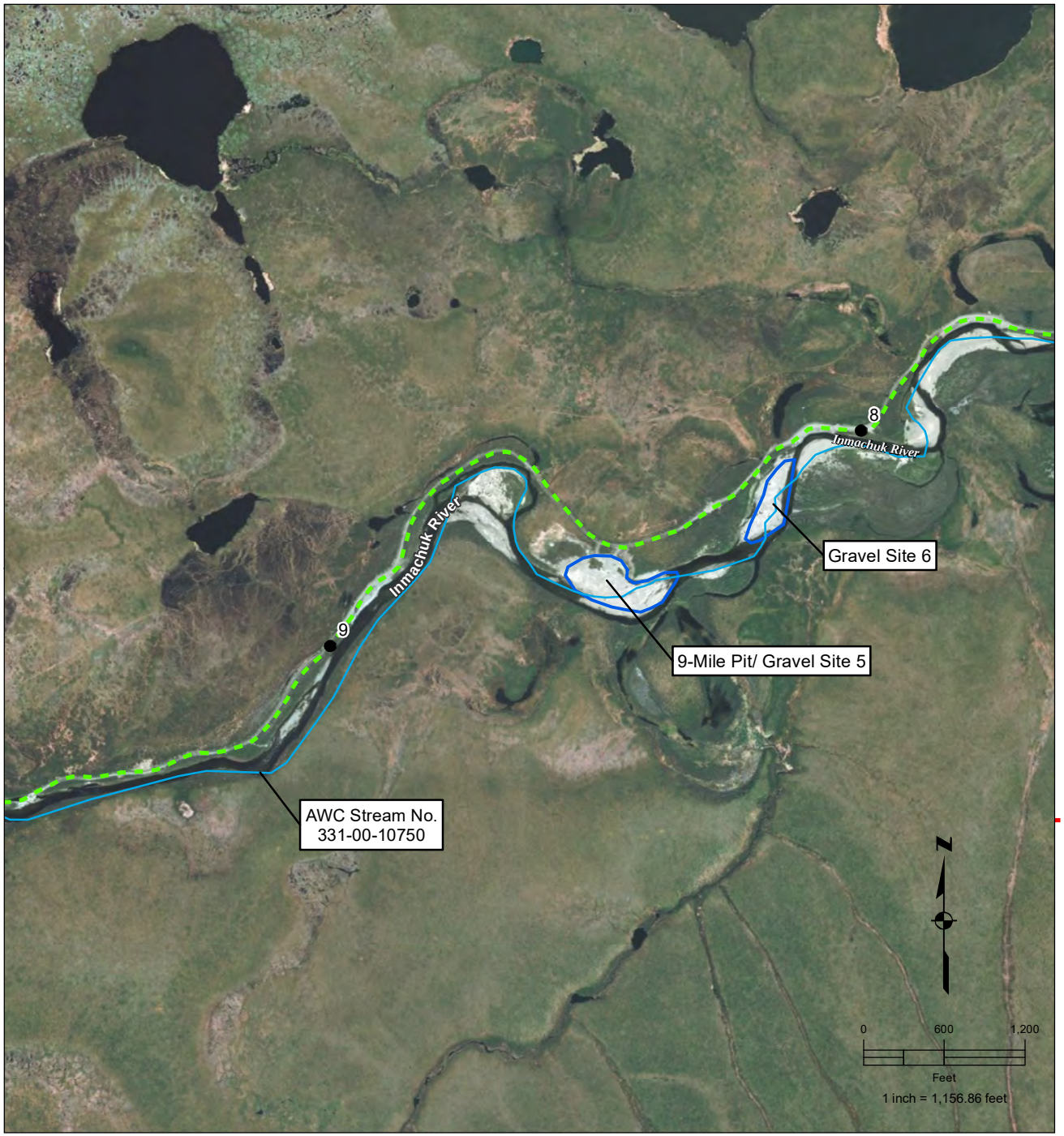
Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Essential Fish Habitat Consultation

DATE: January, 2021 | FIG. 3c

Document Path: U:\2047062400\gis\mxd\essential_fish_habitat\2047062400_EFH_Fig03a_Mat_Source_Detail.mxd

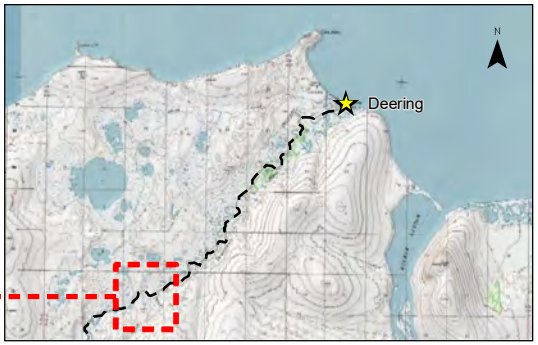


Legend

- Potential Material Sites
- Anadromous Waters Catalog (AWC) Streams
- Deering Road
- Existing Material Site/Staging Access
- Mileposts

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 7 FIPS 5007 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Key Map Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed



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Deering Airport and Access Road Improvements

Potential Material Sites/Staging Areas

Essential Fish Habitat Consultation

DATE: January, 2021 | FIG. 3d

Document Path: U:\2047062400\gis\mxd\essential_fish_habitat\2047062400_EFH_Fig03a_Mat_Source_Detail.mxd

EFH Response

From:	Charlene Felkley - NOAA Federal
To:	Karczmarczyk, Paul F (DOT)
Cc:	Matthew Eagleton - NOAA Federal
Subject:	Fwd: DOT&PF Deering Airport and Access Road Improvement EFH Consultation
Date:	Friday, January 29, 2021 8:22:26 AM
Attachments:	Deering Airport and Access Road Improvements EFH Consultation 012521.pdf AKR EFH Fact Sheet.pdf EFH Non-Fishing Final Report 5_16_2017.docx

---

Hi Paul,

Thank you again for taking my call and discussing some of the details of the DOT&PF Deering Airport and Access Road Improvement project. NMFS agrees with the determination that this project may have short- and long- term adverse effects on EFH. However, with the conservation measures and recommendations you have offered in our phone conversation and below, these affects will remain localized and temporary.

Below are some of the Conservation Recommendations NMFS would offer to ease adverse impacts to EFH (most you are aware of and already implementing). These are listed as **Action**: Conservation Recommendation.

- **New Airport Access Road**: Road construction should take place when salmon populations are not present (fall, winter or spring).
- **New Bridge (Smith Creek)**: Design bridge abutments to minimize disturbances to stream banks, and place abutments outside of the floodplain whenever possible.You have indicated the bridge will be free standing with supports on the abutment. NMFS supports this decision. If possible, avoid culverts. If not possible, "they should be sized, constructed, and maintained to match the gradient and width of the stream to accommodate design flood flows, and they should be large enough to provide for migratory passage of adult and juvenile fishes".
- **Inmachuk River Floodplain Materials Source (gravel beds)**: Conservation recommendations include conducting this activity outside of spawning seasons (winter).

NMFS will not be offering further EFH Conservation Recommendations at this time. Therefore, EFH consultation is satisfied and complete. Should your project significantly change, please contact NMFS; so we may re-assess effects on EFH.

*Attached is an informational brochure on Essential Fish Habitat consultations and assessments.
Other Conservation Recommendations regarding **Access Road and Bridge Design can be found on page 60 of the attached document (3.4.5.2); **Sand and Gravel Mining** Conservation Recommendations can be found on page 73 (4.4.3.2).

---------- Forwarded message ---------
From: **Matthew Eagleton - NOAA Federal** <matthew.eagleton@noaa.gov>
Date: Wed, Jan 27, 2021 at 8:15 AM
Subject: Fwd: DOT&PF Deering Airport and Access Road Improvement EFH Consultation
To: Charlene Felkley - NOAA Federal <charlene.felkley@noaa.gov>
...

---------- Forwarded message ---------
From: **Karczmarczyk, Paul F (DOT)** <paul.karczmarczyk@alaska.gov>
Date: Tue, Jan 26, 2021 at 4:06 PM
Subject: DOT&PF Deering Airport and Access Road Improvement EFH Consultation
To: nmfs.akr.habitat@noaa.gov <nmfs.akr.habitat@noaa.gov>
Cc: Sean Eagan - NOAA Federal (sean.eagan@noaa.gov) <sean.eagan@noaa.gov>, matthew.eagleton@noaa.gov <matthew.eagleton@noaa.gov>, Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>, Nelson, Brett D (DOT) <brett.nelson@alaska.gov>, keith.gordon@faa.gov <keith.gordon@faa.gov>

Good afternoon:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), is proposing airport improvements at the Deering Airport in Deering Alaska. DOT&PF is in the process of developing an Environmental Assessment (EA) for the proposed project, and respectfully requests your review and consideration of the attached Essential Fish Habitat (EFH) Assessment for inclusion in that documentation. We welcome your comments, any additional recommendations on conservation strategies and, should NMFS agree with the Assessment, a written concurrence on its stated findings.

Thank you,

Paul Karczmarczyk, CWB®

Environmental Impact Analyst

DOT&PF

2301 Peger Road

Fairbanks, AK 99709

(907) 451-2288

"Keep Alaska Moving through service and infrastructure."

"A human being should be able to change a diaper, plan an invasion, butcher a hog, conn a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight

efficiently, die gallantly. Specialization is for insects."

-Robert A. Heinlein

--

Matthew Eagleton
Deputy, Habitat Conservation Division / Alaska Region
NOAA Fisheries | U.S. Department of Commerce
Office: (907) 271-6354
Mobile: (907) 351-0410
www.fisheries.noaa.gov

--

Charlene Felkley

Alaska Region Habitat Division

NOAA Fisheries | U.S. Department of Commerce

Office: (907)271-5006

https://www.fisheries.noaa.gov/

Appendix G: Desktop Wetland Mapping Memo

Stantec

Memo

To:	Jonathan Hutchinson, P.E. Alaska Department of Transportation & Public Facilities, Northern Region	From:	Zach Baer, PWS Anchorage, AK
File:	Deering Airport and Access Road Improvements (NFAPT00249)	Date:	March 8, 2021

Reference: Deering Airport and Access Road Desktop Wetland Mapping

As part of the Environmental Assessment (EA) for the proposed Deering Airport and Access Road Improvements project in Deering, Alaska, the Department of Transportation and Public Facilities (DOT&PF) requested Stantec to conduct a desktop delineation of the Deering airport area. There is no publicly available source of wetland and waters mapping in the Deering area. The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) has not published mapping covering the area.

MAPPING METHODS

Stantec Professional Wetland Scientist Zach Baer created an approximately 1,361-acre study area encompassing the airport, proposed access road, proposed snow fence location, and proposed material sites and staging areas (Figure 1). The desktop wetland delineation for the project was completed using the following sources: aerial imagery from 2008, 2015, 2017 and 2019, 1-ft LiDAR-derived elevation data collected in 2015, and ground photographs from a 2013 land survey.

Aerial imagery was used to digitize polygons around wetlands, uplands, fill areas, and waters. By using imagery acquired from multiple years, and at different times during the growing season, vegetation boundaries were better determined. Wetland, upland, and fill polygons were digitized at scales between 1:1,200 and 1:1,500. Waters polygons were digitized at scales between 1:400 and 1:800. Where stream widths were too small to be accurately digitized, polylines were drawn to represent stream location. Mapping polygons were attributed by wetland type, Hydrogeomorphic (HGM) classification (Brinson 1993), Cowardin (NWI) classification (Cowardin et al. 1979) and vegetation, based on the Alaska Vegetation Classification (Viereck et al. 1992).

MAPPING RESULTS

Deering is located on the north side of the Seward Peninsula along Kotzebue Sound (Figure 1). The community is next to the outlets of the Inmachuk River and Smith Creek (Figure 1). This is in an area of continuous permafrost. These factors contribute to a landscape that is dominated by wetlands; 93.4 percent of the study area was mapped as wetlands or waters (Table 1). Uplands in the study area consist of bermed areas next to the ocean that contain the village of Deering, filled areas including a road and the Deering airport, steep banks and berms next to Smith Creek and the Inmachuk River, and existing material sites.

Hydrogeomorphic Classification

Study area wetlands were characterized by hydrogeomorphic (HGM) classification, a system which separates wetlands based on the source of the water supporting them (Figure 1). The majority of the wetlands in the study area are Flat HGM wetlands (62.7 percent). Flat HGM wetlands are maintained primarily by precipitation. These wetlands are underlain by permafrost, allowing precipitation to perch on them for long periods during the growing season. The next largest class of wetlands in the study area are Riverine HGM wetlands (14.9 percent). These are supported by water from streams and rivers. Depressional HGM wetlands

are located in topographic depressions and make up 7.8 percent of wetlands and waters in the study area. Finally, Slope HGM wetlands make up 4.2 percent of wetlands and waters and are supported by groundwater.

Table 1: Wetlands and Waters Mapping Results by HGM

HGM	Acres	Percent Wetlands and Waters	Percent Study Area
Wetlands			
Depressional	99.2	7.8	7.3
Flat	796.9	62.7	58.5
Riverine	189.3	14.9	13.9
Slope	54.0	4.2	4.0
Total Wetlands	**1139.5**	**89.6**	**83.7**
Waters			
Depressional Ponds	36.9	2.9	2.7
Riverine Ponds	0.3	0.0	0.0
Rivers and Streams**	76.0	6.0	5.6
Marine Waters**	18.8	1.5	1.4
Total Waters	**132.0**	**10.4**	**9.7**
Totals			
Total Wetlands and Waters	**1271.5**	**100.0**	**93.4**
Total Uplands	**89.8**	**-**	**6.6**
Study Area Total	**1361.3**	**-**	**100.0**

*Apparent inconsistencies in sums are the results of rounding.
** Non-HGM classification

Reference: Deering Airport and Access Road Desktop Wetland Mapping

Cowardin Classification

Study area wetlands were also characterized using the Cowardin Classification system (Figures 1-2 – 1-5), which was developed for the NWI. Nearly a third (31.3 percent) of the study area was classified as emergent (herbaceous dominated) wetlands, while just over half (51.2 percent) of the study area was classified as shrub-dominated wetlands. The remainder was made up of ponds, rivers, streams, marine habitat, and uplands (Table 2).

Table 2: Wetlands and Waters Mapping Results by Cowardin Classification

Type	Cowardin Classification	Acres	Percent Study Area
Emergent Wetlands	PEM1	425.8	31.3
Shrub Wetlands	PSS1	17.1	1.3
	PSS1/EM1	696.5	51.2
Ponds	PUB	37.2	2.7
Rivers and Streams	R1	17.1	1.3
	R3	30.3	2.2
	PUS	28.7	2.1
Marine	M1	11.0	0.8
	M2	7.8	0.6
Total Wetlands and Waters		**1271.5**	**93.4**
Uplands		**89.8**	**6.6**
Study Area Total		**1361.3**	**100.0**

*Apparent inconsistencies in sums are the results of rounding.

Reference: Deering Airport and Access Road Desktop Wetland Mapping

Vegetation Classification

The study area also characterized vegetation by using a modification of the Viereck Classification system (Figure 2). Shrub-dominated vegetation types are the most common in the study area (52.8 percent), followed by herbaceous (32.2 percent), and Other Types (15.0 percent) (Table 3).

"Other Types" include Partially Vegetated classification habitats with 10 percent or greater vegetation cover but less than 25 percent, while Barren habitats have less than 10 percent cover and include gravel bars that are below OHW. The only vegetation types mapped as upland are Barren and Partially Vegetated disturbed areas, and Open Willow Shrub, Low Shrub Tundra, and Mesic Herbaceous on steep banks and berms next to Smith Creek and the Inmachuk River, and existing material sites.

Table 3: Vegetation Mapping Results

Vegetation Class	Vegetation Type	Upland	Wetland	Water	Total	Percent Study Area
Shrub Types	Closed Willow Shrub	-	16.9	-	16.9	1.2
	Open Willow Shrub	14.3	77.0	-	91.3	6.7
	Low Shrub Tundra	1.6	135.4	-	137.0	10.1
	Open Mixed Shrub-Sedge Tundra	-	473.2	-	473.2	34.8
	Shrub Total	**15.8**	**702.5**	**-**	**718.3**	**52.8**
Herbaceous Types	Tussock Sedge	-	349.9	-	349.9	25.7
	Mesic Herbaceous	1.4	-	-	1.4	0.1
	Wet Herbaceous	-	85.1	-	85.1	6.2
	Emergent Aquatic	-	2.1	-	2.1	0.2
	Herbaceous Total	**1.4**	**437.0**	**-**	**438.4**	**32.2**
Other Types	Partially Vegetated	0.6	-	-	0.6	0.0
	Barren	71.9	-	28.7	100.6	7.4
	Open Water	-	-	103.3	103.3	7.6
	Other Total	**72.6**	**-**	**132.0**	**204.6**	**15.0**
Study Area Total		**89.8**	**1139.5**	**132.0**	**1361.3**	**100.0**

*Apparent inconsistencies in sums are the results of rounding.

CONCLUSION

These results can be used to inform impact analysis for preferred and alternative routes and material sites for the Deering Airport and Access Road Environmental Assessment. The mapping shows that all wetlands and waters are considered jurisdictional; they are directly connected to Smith Creek and the Inmachuk River, which flow to Kotzebue Sound, a traditional navigable water. These results will inform avoidance and minimization of impacts to aquatic resources during project design and will inform impact analysis for project permitting.

Reference: Deering Airport and Access Road Desktop Wetland Mapping

References

Brinson, M.M. 1993. A Hydrogeomorphic Classification for Wetlands. US Army Corps of Engineers Waterways Experiment Station, WRP-DE-4.

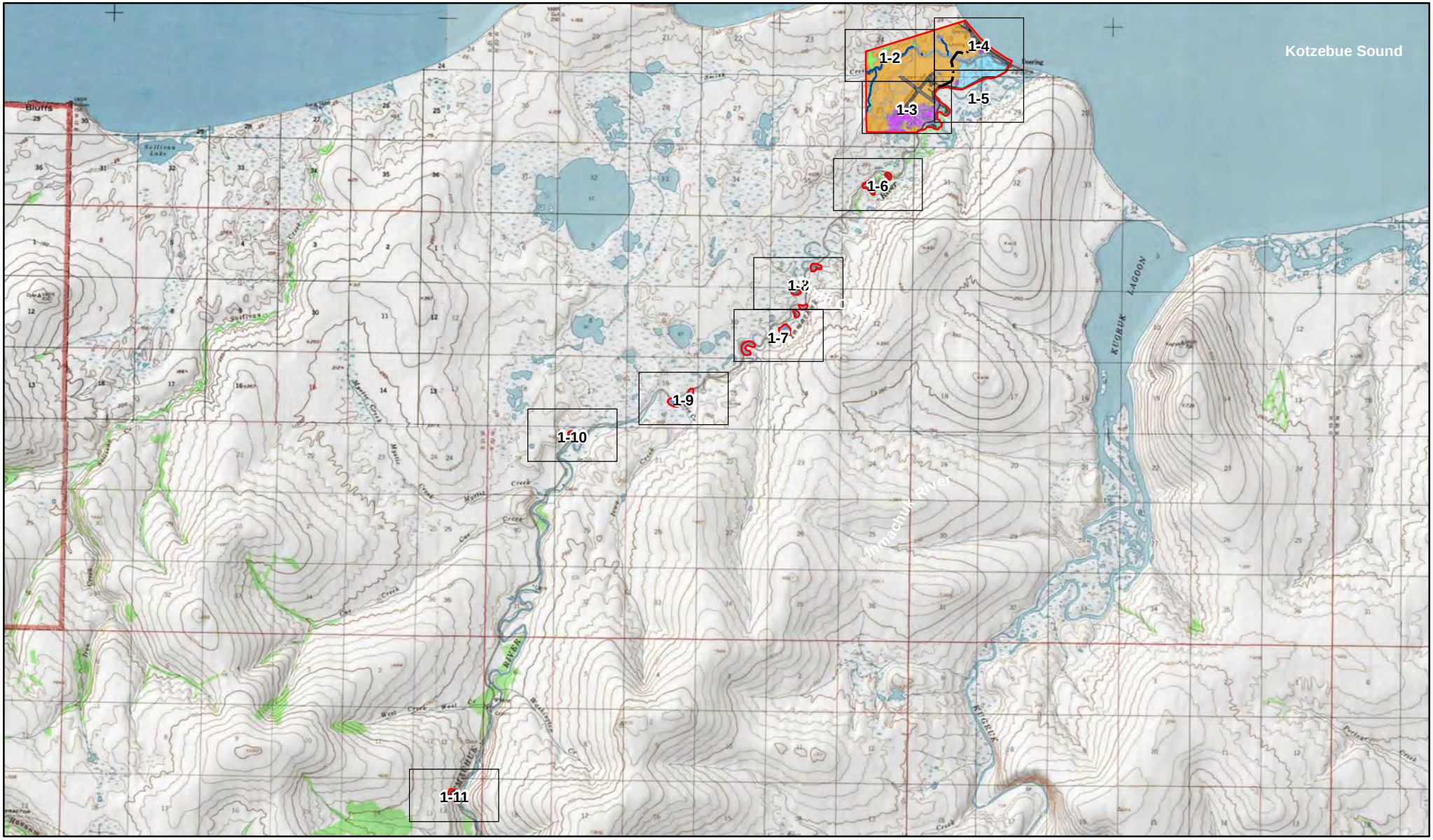
Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior Fish and Wildlife Service.

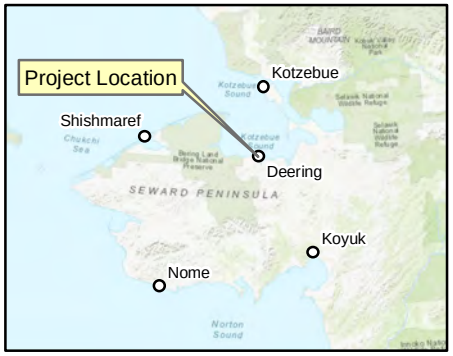
Vierick, L.A., C.T. Dyrness, A.R. Batten, K.J. Wenzlick. 1992. The Alaska Vegetation Classification. US Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-286.

Stantec Consulting Services Inc.

Zach Baer PWS
Environmental Scientist

Phone: 907-343-5256
Fax: 907-258-4653
zach.baer@stantec.com





Study Area

Detail Map Grid #

Stream

Proposed Access Road

Wetlands and Waters by Hydrogeomorphic Classification (HGM)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 0.5 1 1.5 2 Miles

(At original document size of 8.5x11)

1:120,000 1 in = 10,000 ft

N

Project Deering Airport

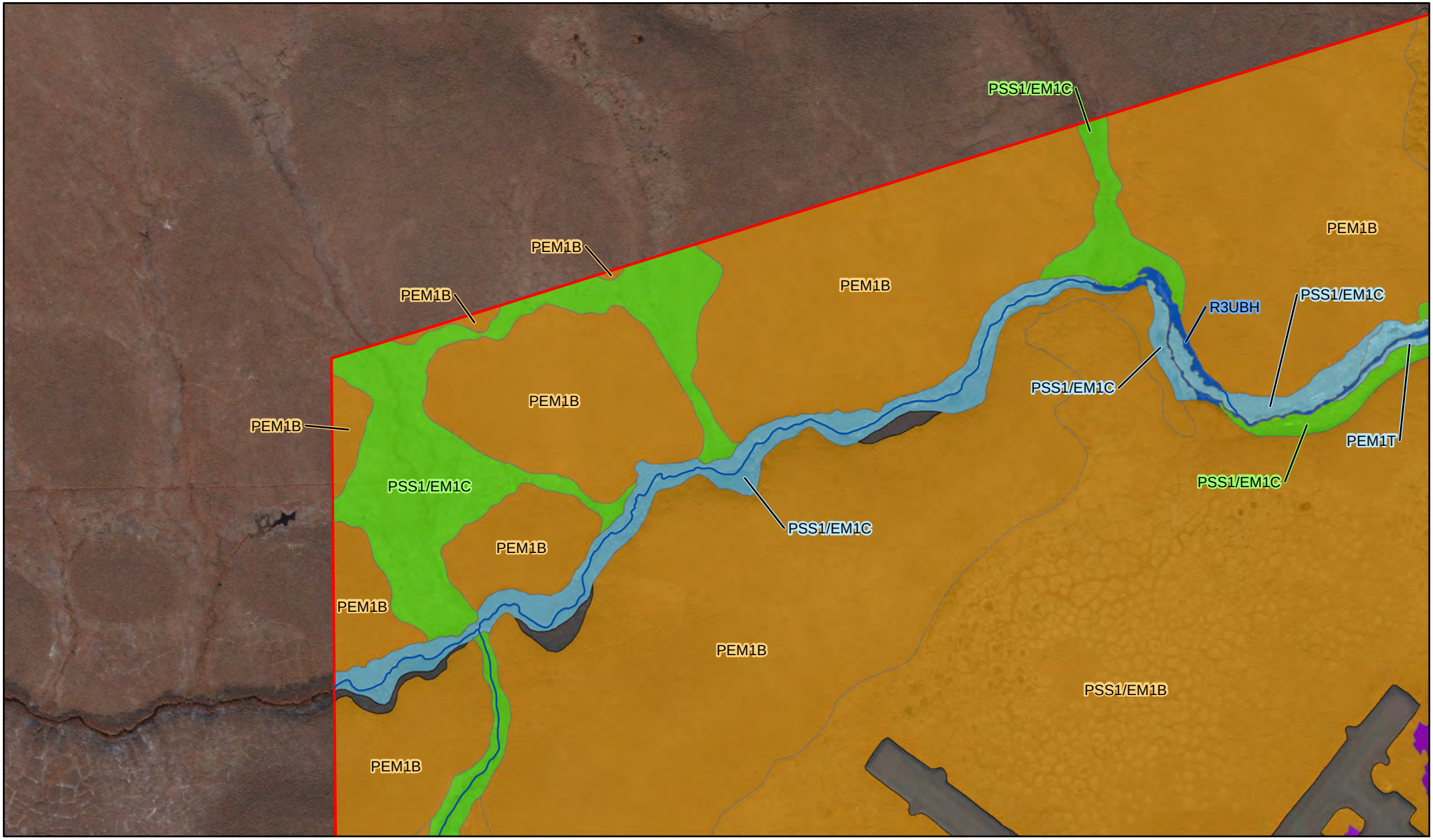
Figure **Desktop Wetland Mapping by HGM**

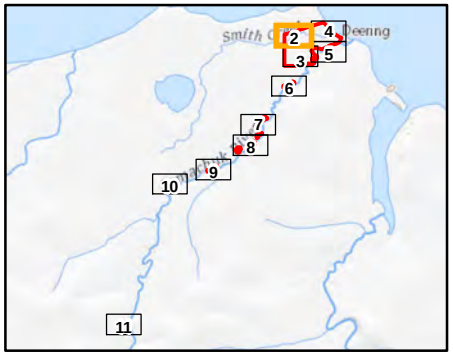
Drawn By ZLB

Date 3/4/2021

Figure # 1-1

Stantec





Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

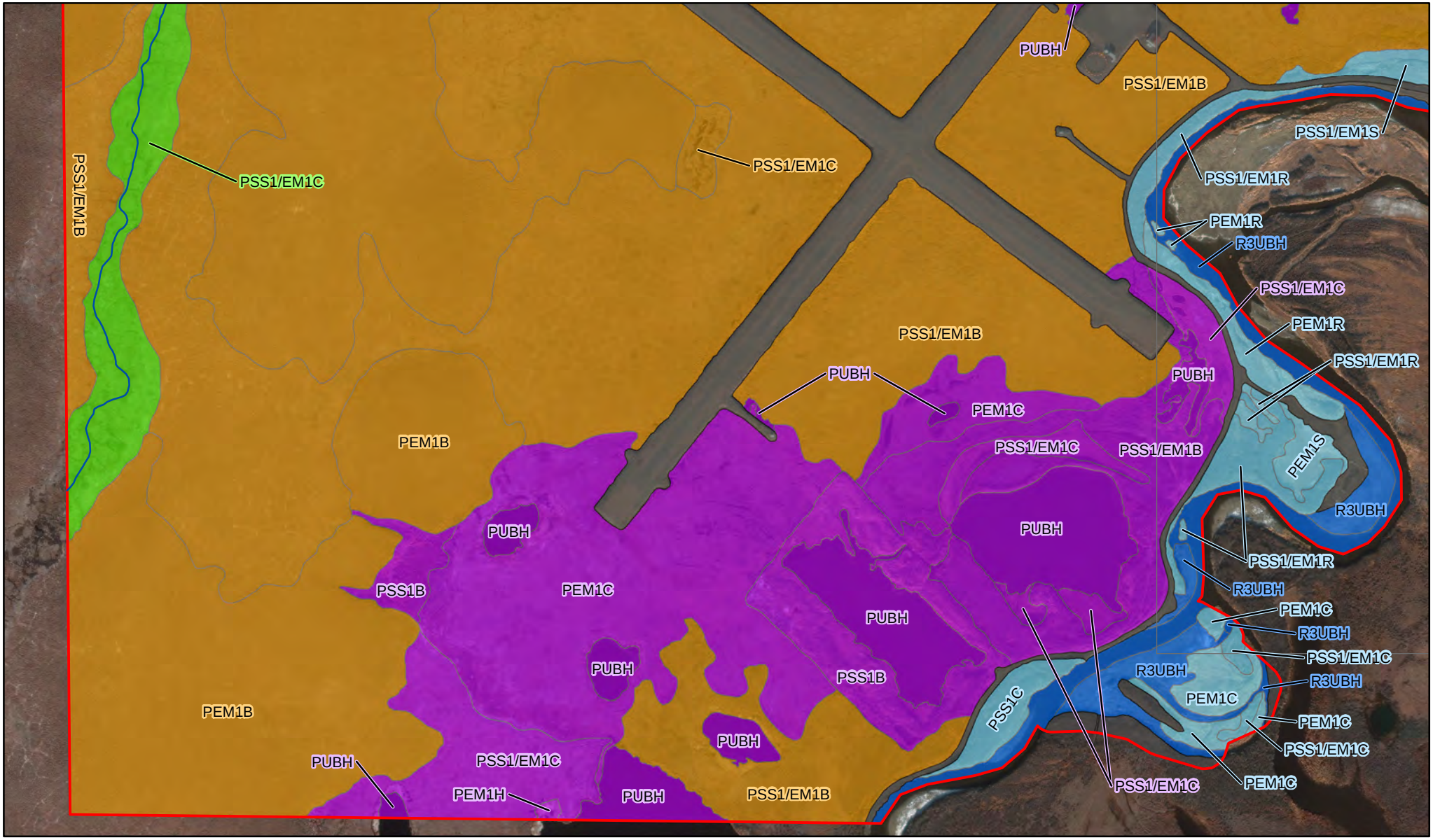
Figure **Desktop Wetland Mapping by HGM**

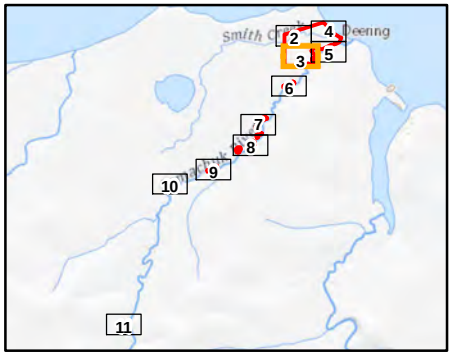
Drawn By ZLB

Date 3/4/2021

Figure # 1-2

Stantec





Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

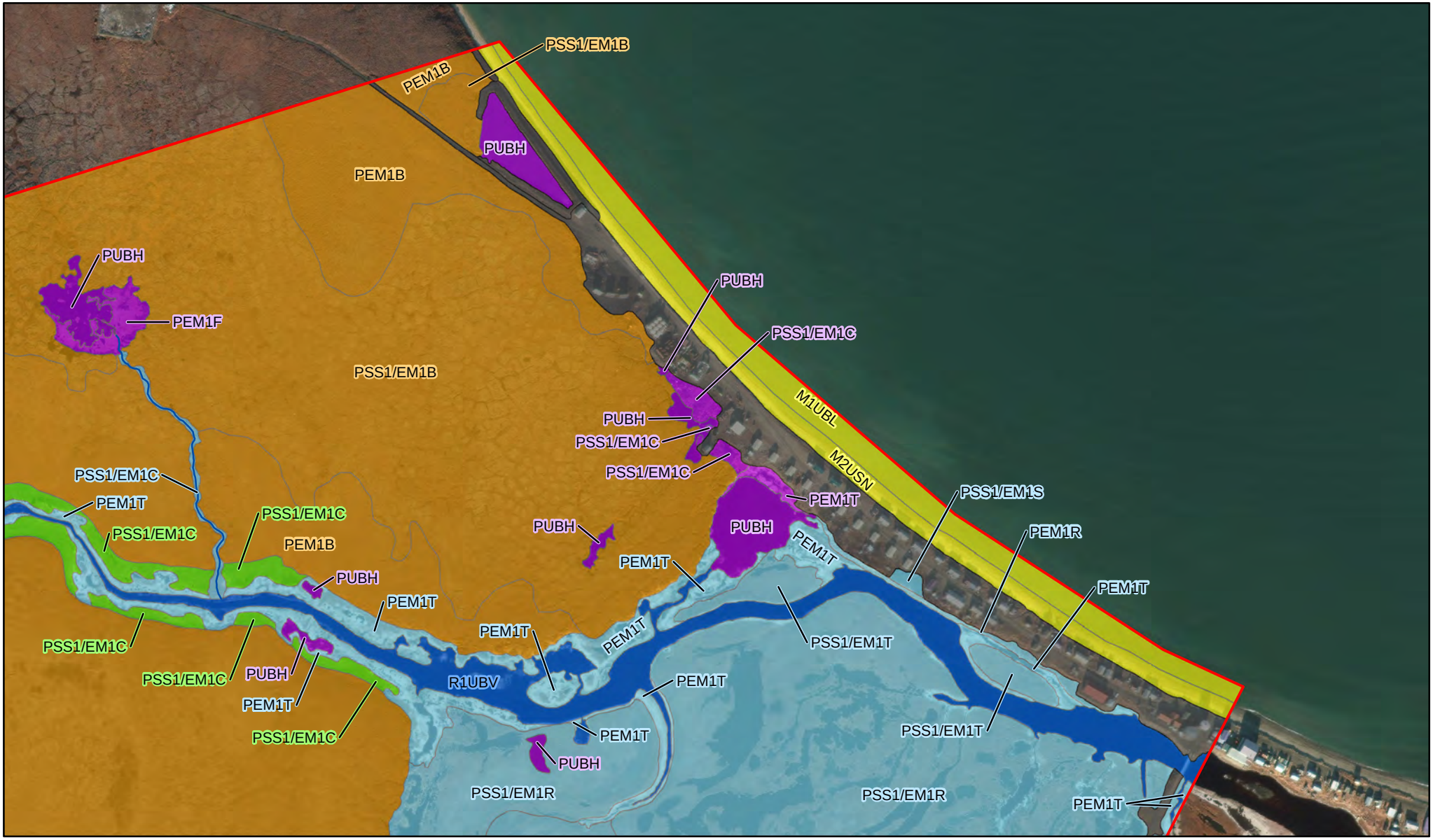
Project Deering Airport

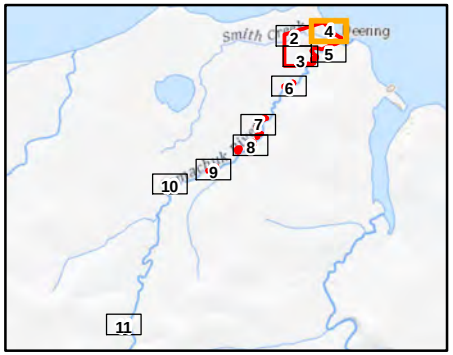
Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB *Date* 3/4/2021

Figure # 1-3

Stantec





Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

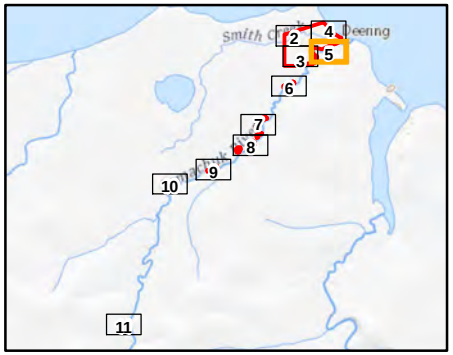
Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB

Date 3/4/2021

Figure # 1-4

Stantec



Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

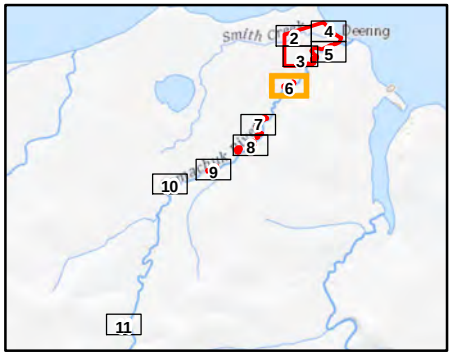
Project Deering Airport

Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB *Date* 3/4/2021

Figure # 1-5

Stantec



Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

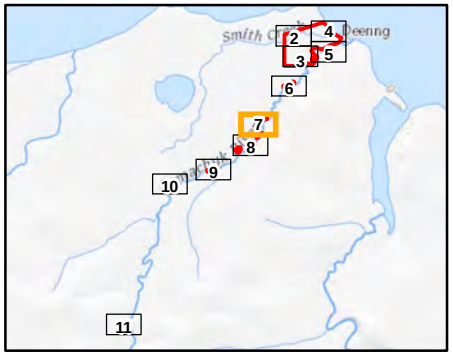
Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB

Date 3/4/2021

Figure # 1-6

Stantec



Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

Upland*

Depressional

Flat

*Non-HGM classification

Riverine

Slope

Marine Water*

River/Stream*

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

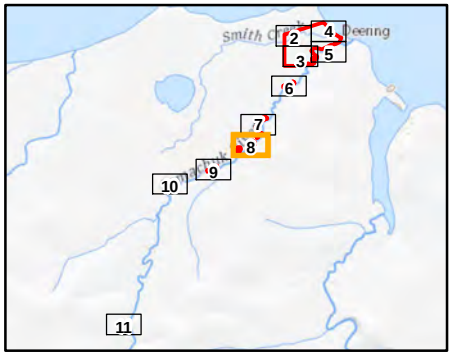
Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB

Date 3/4/2021

Figure # 1-7

Stantec



Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

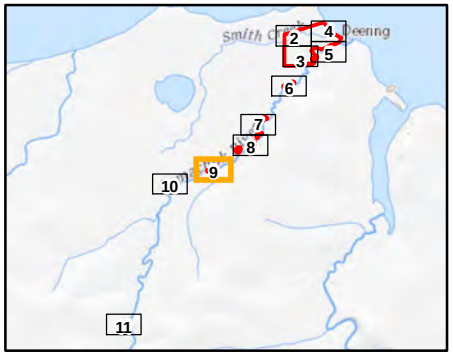
Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB

Date 3/4/2021

Figure # 1-8

Stantec



Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

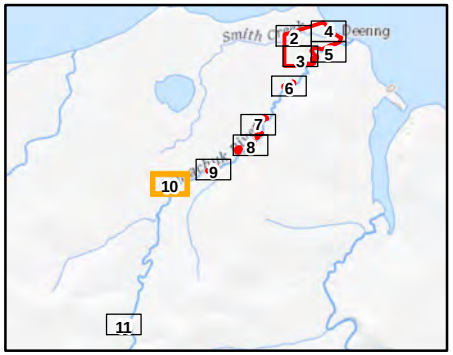
Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB

Date 3/4/2021

Figure # 1-9

Stantec



Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

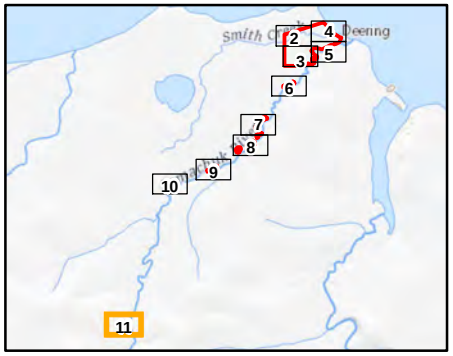
Figure **Desktop Wetland Mapping by HGM**

Drawn By ZLB

Date 3/4/2021

Figure # 1-10

Stantec



Stream

Study Area

Wetlands and Waters by Hydrogeomorphic Classification (HGM) (Labeled by Cowardin)

- Upland*
- Depressional
- Flat
- Riverine
- Slope
- Marine Water*
- River/Stream*

*Non-HGM classification

0 200 400 600 800 Feet

(At original document size of 8.5x11)

1:7,500 1 in = 625 ft

N

Project Deering Airport

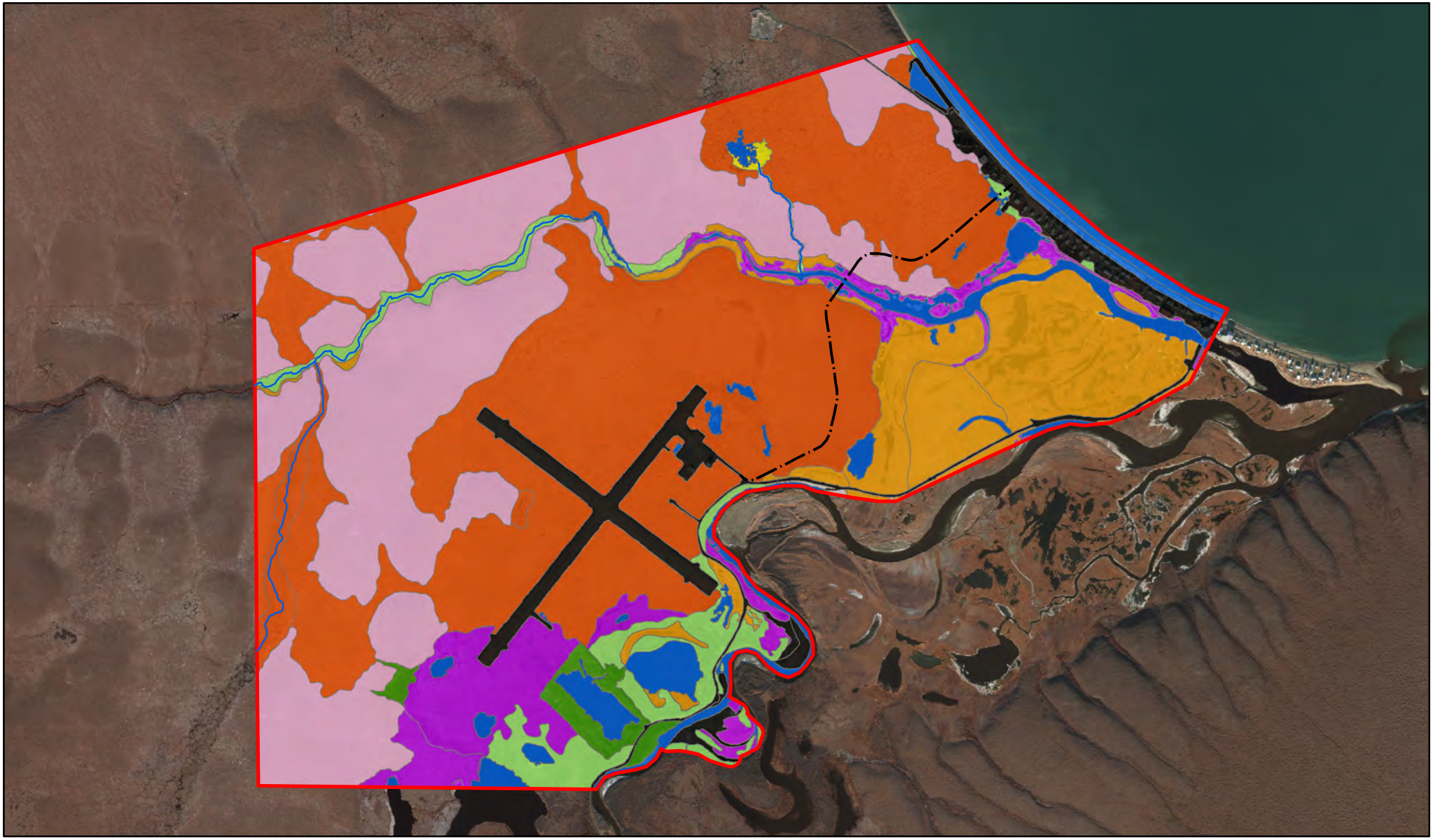
Figure **Desktop Wetland Mapping by HGM**

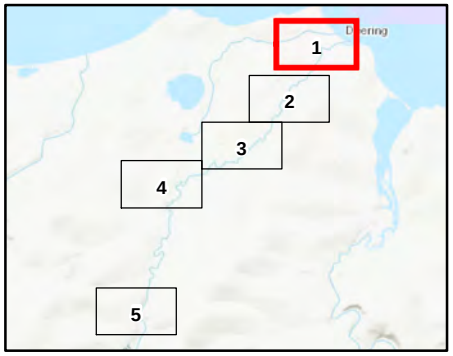
Drawn By ZLB

Date 3/4/2021

Figure # 1-11

Stantec





Study Area

Proposed Access Road

Stream

Vegetation Type

- Closed Willow Shrub
- Open Willow Shrub
- Low Shrub Tundra
- Open Mixed Shrub-Sedge Tundra
- Tussock Sedge
- Wet Herbaceous
- Emergent Aquatic
- Barren
- Partially Vegetated
- Open Water

0 500 1,000 1,500 2,000 Feet

(At original document size of 8.5x11)

1:18,000 1 in = 1,500 ft

N

Project Deering Airport

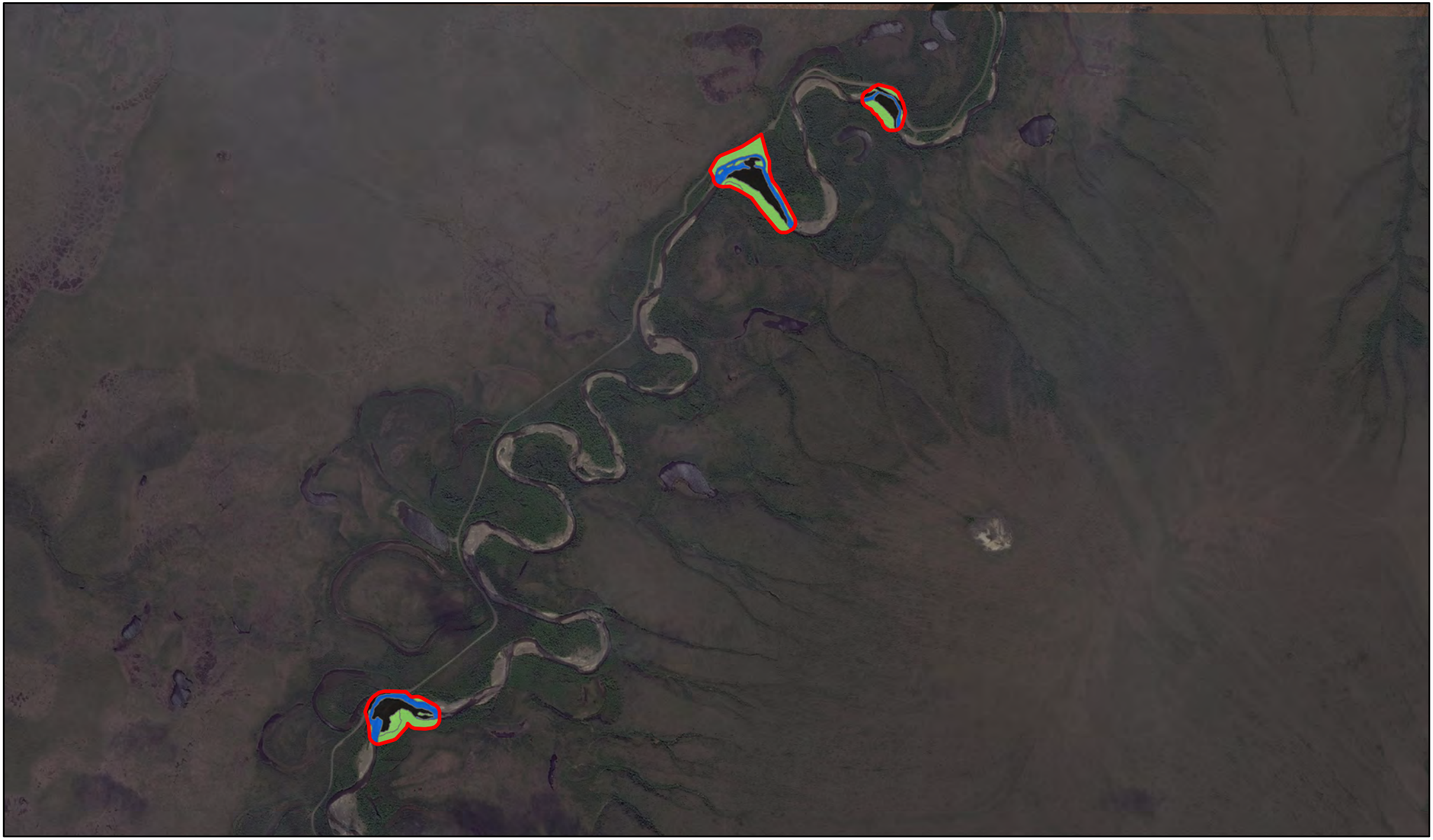
Figure **Desktop Wetland Mapping by Vegetation Type**

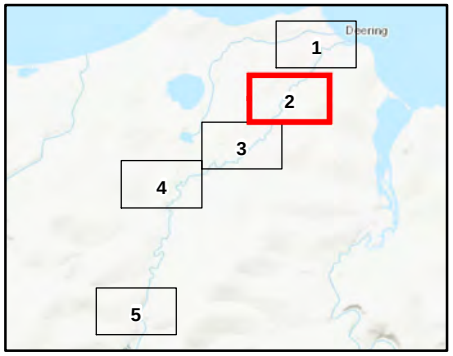
Drawn By ZLB

Date 3/8/2020

Figure # 2 - 1

Stantec





Study Area

Proposed Access Road

Stream

Vegetation Type

- Closed Willow Shrub
- Open Willow Shrub
- Low Shrub Tundra
- Open Mixed Shrub-Sedge Tundra
- Tussock Sedge
- Wet Herbaceous
- Emergent Aquatic
- Barren
- Partially Vegetated
- Open Water

0 500 1,000 1,500 2,000 Feet

(At original document size of 8.5x11)

1:18,000 1 in = 1,500 ft

N

Project Deering Airport

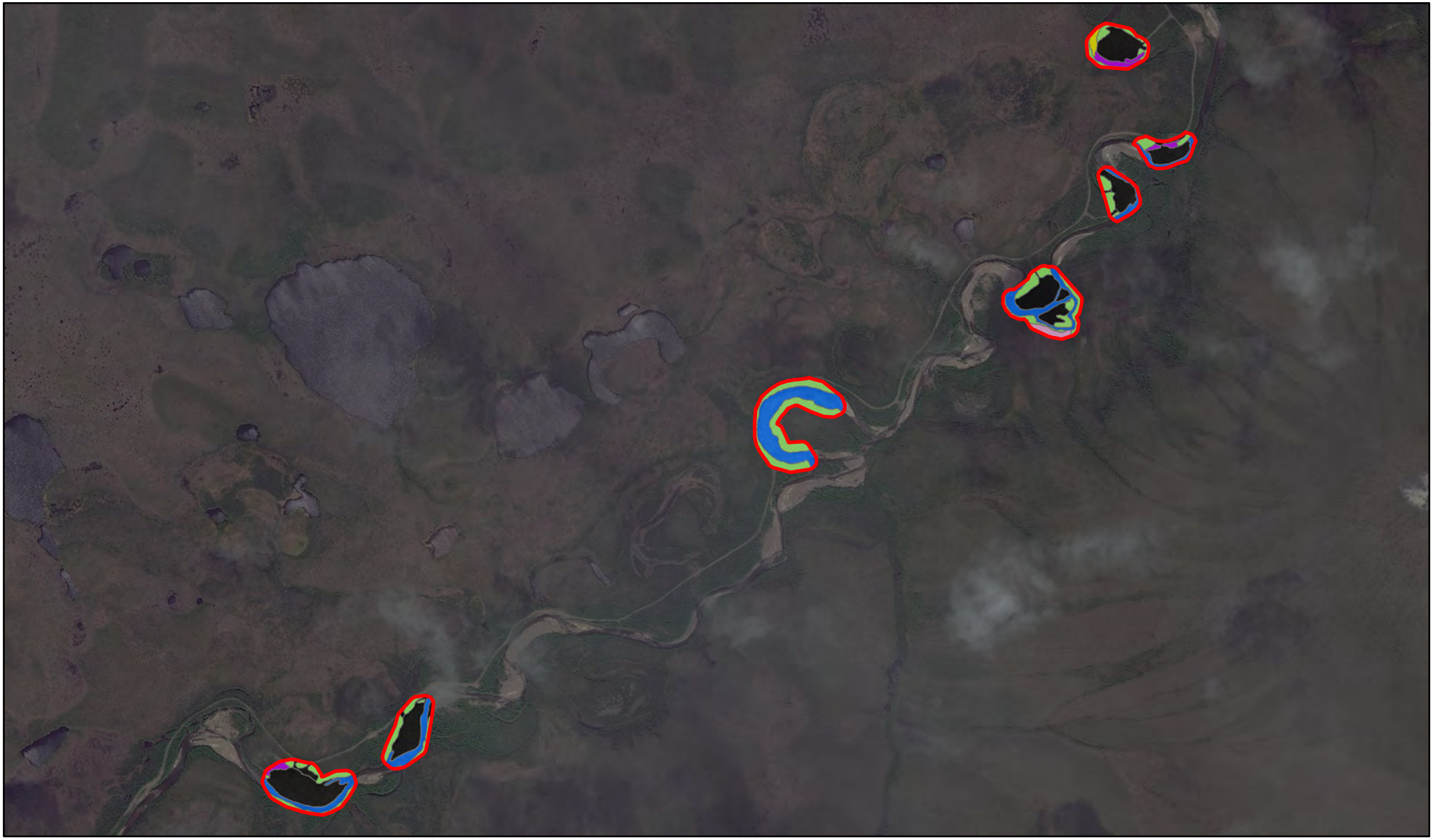
Figure **Desktop Wetland Mapping by Vegetation Type**

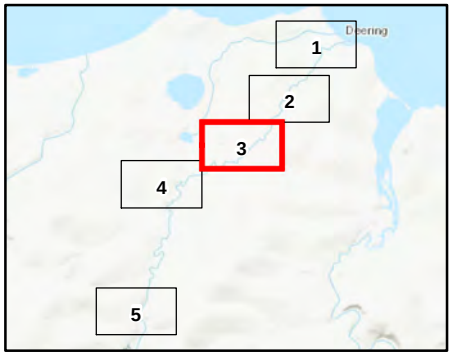
Drawn By ZLB

Date 3/8/2020

Figure # 2 - 2

Stantec





Study Area

Proposed Access Road

Stream

Vegetation Type

- Closed Willow Shrub
- Open Willow Shrub
- Low Shrub Tundra
- Open Mixed Shrub-Sedge Tundra
- Tussock Sedge
- Wet Herbaceous
- Emergent Aquatic
- Barren
- Partially Vegetated
- Open Water

0 500 1,000 1,500 2,000 Feet

(At original document size of 8.5x11)

1:18,000 1 in = 1,500 ft

N

Project Deering Airport

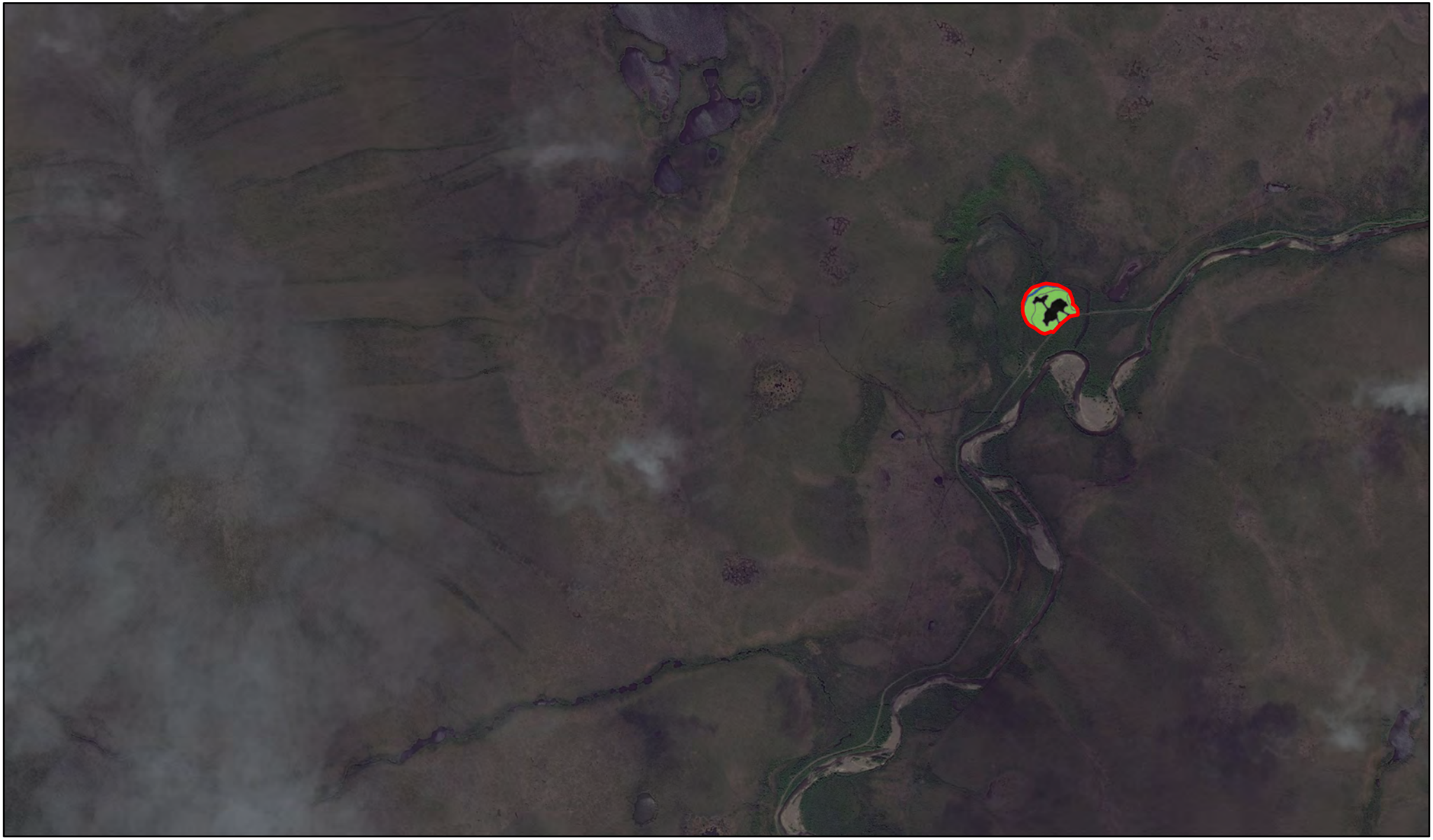
Figure **Desktop Wetland Mapping by Vegetation Type**

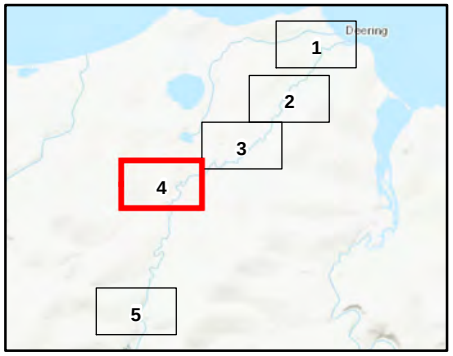
Drawn By ZLB

Date 3/8/2020

Figure # 2 - 3

Stantec





Study Area

Proposed Access Road

Stream

Vegetation Type

- Closed Willow Shrub
- Open Willow Shrub
- Low Shrub Tundra
- Open Mixed Shrub-Sedge Tundra
- Tussock Sedge
- Wet Herbaceous
- Emergent Aquatic
- Barren
- Partially Vegetated
- Open Water

0 500 1,000 1,500 2,000 Feet

(At original document size of 8.5x11)

1:18,000 1 in = 1,500 ft

N

Project Deering Airport

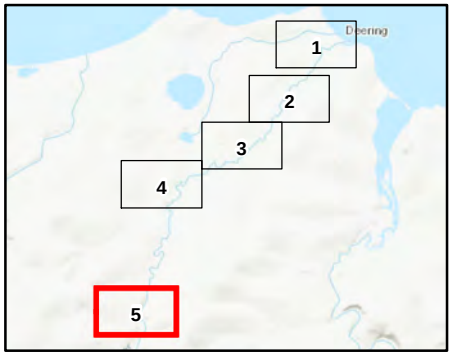
Figure **Desktop Wetland Mapping by Vegetation Type**

Drawn By ZLB

Date 3/8/2020

Figure # 2 - 4

Stantec



Study Area

Proposed Access Road

Stream

Vegetation Type

- Closed Willow Shrub
- Open Willow Shrub
- Low Shrub Tundra
- Open Mixed Shrub-Sedge Tundra
- Tussock Sedge
- Wet Herbaceous
- Emergent Aquatic
- Barren
- Partially Vegetated
- Open Water

0 500 1,000 1,500 2,000 Feet

(At original document size of 8.5x11)

1:18,000 1 in = 1,500 ft

N

Project Deering Airport

Figure **Desktop Wetland Mapping by Vegetation Type**

Drawn By ZLB

Date 3/8/2020

Figure # 2 - 5

Stantec

Appendix H: Section 4(f) Memo

FAA Concurrence

From: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Sent: Wednesday, June 9, 2021 7:44 AM
To: Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>; Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Subject: FW: Deering Airport and Access Road Improvements Section 4(f) Impact Analysis

Paul,

FAA concurs with the conclusions of the 4(f) analysis.

Thanks

Keith Gordon
Environmental Protection Specialist
Federal Aviation Administration
Alaska Region
222 West 7th Avenue, #14
Anchorage, AK 99513-7587
Desk – 907-271-5030
Fax – 907-271-2851

From: Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>
Sent: Tuesday, June 8, 2021 4:10 PM
To: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Subject: Deering Airport and Access Road Improvements Section 4(f) Impact Analysis

G Mr. Gordon:

The State of Alaska, Department of Transportation and Public Facilities (DOT&PF) has reviewed the potential for the Deering Airport and Access Road Improvements Project to impact Section 4(f) properties, and respectfully requests review of the following information/determination and, if found sufficient, your concurrence.

Review of project area 4(f) resources, existing documentation, and elements of project scope posing potential 4(f) impacts:

- The National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), and the Alaska Historic Resource Survey websites were reviewed for any of publicly owned lands including public parks, recreation areas, wildlife or waterfowl refuges of national, state, or local significance; or historic sites of national, state, or local significance within the project area.
- The project area is located approximately 42 miles east of the NPS-managed Bering Land Bridge National Preserve.
- Two locations of project activity (**Figure 1**; Locations A & B) will occur within the boundary of the Deering Archaeological District (KTZ-00169). While a formal Determination of Eligibility (DOE) for inclusion in the National Register of Historic Properties (NRHP) has not been conducted for KTZ-00169, this proposed archaeological district has been treated as eligible for the NRHP under Criterion D (Deering Archaeological District Programmatic Agreement 1998); therefore it is a Section 4(f) property.
- On January 4, 2021, DOT&PF, on behalf of FAA, made a determination that there would be No Historic Properties Adversely Affected by the Proposed Action under the condition of archaeological monitoring, and the State Historic Preservation Officer (SHPO) concurred with that determination on April 2, 2021 (**Attachment 1**).
- Deering Historic District (KTZ-00170) and KTZ-00299 are found within the boundaries of the Deering Archaeological District (KTZ-00169), but neither KYZ-00170 or KTZ-00299 are listed as being part of the Deering Archaeological District. Therefore, KTZ-00170 and KTZ-00299 do not need to be considered, as they are not within the project Area of Potential Effect (APE).
- Deering Archaeological District (KTZ-00169) is comprised of KTZ-00023, KTZ-00168, KTZ-00300, and KTZ-00301, all disturbed subsurface sites that have been at some time excavated, rendering these resources as important chiefly for data recovery and not important for preservation in place.
- No subsurface construction is proposed within the KTZ-00169.
- DOT&PF will ensure a Secretary of the Interior (SOI) qualified professional archaeologist will be present to monitor for potential human remains and/or cultural resources during all ground disturbing activities related to the rehabilitation of existing roads (Deering Road) and/or construction of new roads (West Airport Road) within the Project APE for the Deering Airport and Access Road Project.

At **Location A**, project mobilization/demobilization of construction equipment will temporarily occur within the Deering Archeological District (KTZ-00169) via the existing community barge landing and shoreline haul route, both of which are consistently used by the community for routine freight landing and transfer activities. For project purposes, temporary occupancy of those facilities within KTZ-00169 will consist only of several (2) short duration hauls from the barge landing, and through a portion of the surface of KTZ-00169, to the existing airport access road outside the KTZ-00169 boundary. No project construction, temporary or permanent occupation, or use will occur in any subsurface portion of KTZ-00169 at large or its contributing elements.

At **Location B**, the proposed new airport access road (West Airport Road) construction will terminate in the community of Deering at a new intersection with Main Street. This portion of West Airport

Road construction will result in permanent, physical occupation of a portion of the surface of KTZ-00169. No project construction, use or physical occupation will occur in any subsurface portion of KTZ-00169 at large or its contributing elements.

Section 4(f) Analyses

Location A:

FAA Order 1050.1f v2 (2020) notes in Section 5.3.1 Para 2 that *"A temporary occupancy of a Section 4(f) property for project construction-related activities is usually so minimal that it does not constitute a use within the meaning of Section 4(f)."* unless *exempting conditions* (below) apply. The subject project will not trigger these conditions as per information provided below them.

• *The duration of the occupancy of the Section 4(f) property is greater than the time needed to build a project and there is a change in ownership of the land.*

The temporary occupancy of the property for project mobilization/demobilization will neither exceed project construction time nor precipitate a change in land ownership.

• *The nature and magnitude of changes to the 4(f) property are more than minimal.*

There would be no changes to the 4(f) property as a result of the temporary occupancy for landing and mobilizing equipment.

• *Anticipated permanent adverse physical impacts would occur and a temporary or permanent interference with Section 4(f) activities or purposes would occur.*

No permanent adverse physical impacts, or temporary or permanent interference with Section 4(f) activities or purposes, would occur.

• *The land use is not fully returned to existing condition*

There is no anticipated change to existing land use, as the barge landing/haul route are currently used for community transportation purposes. Note: DOT&PF contracting specifications also

require that contractors return any public highway or facility used for project construction to at least as good as its condition prior to project use.

• *There is no documented agreement with appropriate agencies having jurisdiction over the Section 4(f) property.*

The barge landing/shoreline haul route are existing transportation corridors for the City of Deering and public use Rights of Way. As noted in the January 4, 2021 DOT&PF Section 106 findings

determination, the haul road surface has already been disturbed by previous activities and the barge landing is already established and regularly used by Deering residents. Such uses have not

ever been identified as having adverse effect on the KTZ-00169 archaeological district integrity or its potential eligibility for the NRHP by either of its current or past project uses. Therefore,

the DOT&PF Northern Region PQI believes that use of the barge landing or haul route for the subject project will not adversely affect archaeological district KTZ-00169. On April 2, 2021, the

SHPO documented agreement with this premise in the concurrence of No Historic Properties Adversely Affected.

Accordingly, for Location A, DOT&PF on behalf of FAA considers mobilization/demobilization of project equipment via the Deering barge landing and shoreline haul road, on the surface of KTZ-00160, so minimal that it does not constitute a use within the meaning of Section 4(f) as per FAA Order 1050.1f v2 Section 5.3.1 Para 2.

Location B:

FAA Order 1050.1f v2 (2020) provides in Section 5.3.1, Para 3 that "*If a project would physically occupy an NRHP-listed or eligible property containing archeological resources that warrant preservation in place, there would be a Section 4(f) use. Although there may be some physical taking of land, Section 4(f) does not apply to NRHP-listed or eligible archeological properties where the responsible FAA official, after consultation with the SHPO/THPO, determines that the archeological resource is important chiefly for data recovery and is not important for preservation in place*."

Proposed West Airport Road construction will terminate in the community of Deering at a new intersection with Main Street. This construction will involve only the placement of fill and its grading above original ground surface, and not result in any form of original ground or subsurface disturbance or excavation. Construction will result in a permanent, physical occupation of a portion of the surface of Deering Archaeological District (KTZ-00169). On January 4, 2021, DOT&PF, on behalf of FAA, made a determination that there would be No Historic Properties Adversely Affected by the Proposed Action, including the construction West Airport Road, under the condition of archaeological monitoring. The State Historic Preservation Office (SHPO) concurred with that determination on April 2, 2021. KTZ-00169 and its contributing elements (KTZ-00023, KTZ-00168, KTZ-00300, and KTZ-00301) are disturbed, subsurface resources important chiefly for data recovery and not important for preservation in place.

Accordingly, for Location B, DOT&PF on behalf of FAA considers that although construction of West Airport Road will physically and permanently take a small portion of the surface of NRHP-listed Deering Archaeological District (KTZ-00169), the SHPO has concurred with a finding of No Historic Properties Adversely Affected by the Proposed Action under the condition of archaeological monitoring. Consequently, KTZ-00169 and its contributing elements are considered important chiefly for data recovery and not important for preservation in place, and Section 4(f) does not apply
as per FAA Order 1050.1f v2 Section 5.3.1 Para 3.

If you have any questions or need any additional information, please contact me as noted below.

Thank you,

Paul Karczmarczyk, CWB®

Environmental Impact Analyst
DOT&PF
2301 Peger Road
Fairbanks, AK 99709
(907) 451-2288

"Keep Alaska Moving through service and infrastructure."

"A human being should be able to change a diaper, plan an invasion, butcher a hog, conn a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight efficiently, die gallantly. Specialization is for insects."

-Robert A. Heinlein

-

SHPO Concurrence

McKinney, Holly Jean (DOT)

From: Ortiz, Liz M (DNR)
Sent: Friday, April 2, 2021 2:59 PM
To: McKinney, Holly Jean (DOT)
Cc: Ortiz, Liz M (DNR)
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

3130-1R FAA / 2020-0203

Good afternoon Holly,
The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated March 15, 2021) concerning the subject project on March 15, 2021. Following our review of the documentation provided, we concur with the finding of No Historic Properties Adversely Affected under the condition of archaeological monitoring as outlined in your documentation. Please note that our office may need to re-evaluate our concurrence if changes are made to the project's scope or design.

Thank you for taking our comments made in prior consultation on similar projects into consideration, and for including the Inadvertent Discovery Plan (IDP) in this documentation. We appreciate the level of effort and have no new comments for the IDP or Guideline appendices included in your documentation package.

As stipulated in 36 CFR 800.3, other consulting parties such as the local government and Tribes are required to be notified of the undertaking. Additional information provided by the local government, Tribes, or other consulting parties may cause our office to re-evaluate our comments and recommendations. Please note that our response does not end the 30-day review period provided to other consulting parties.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4), in consultation with our office. Please note that some sites can be deeply buried and that fossils are considered cultural resources subject to the Alaska Historic Preservation Act.

This email serves as our office's official correspondence for the purposes of Section 106. Thank you for the opportunity to review and comment. Please contact Liz Ortiz at 269-8722 or liz.ortiz@alaska.gov if you have any questions or we can be of further assistance.

Have a great weekend!
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: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Monday, March 15, 2021 8:28 AM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Good Morning Holly,

The Office of History and Archaeology/Alaska State Historic Preservation Office received your documentation, and its review has been assigned to me under 2020-00203. Our office is still tolling in response to complications from COVID-19, but we will get back to you as soon as we can. Please contact me by email if you have any questions or concerns.

Best,
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: Monday, March 15, 2021 8:23 AM
To: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>

Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Hi Liz,

Yes, sorry about the confusion. I somehow deleted my list of appendices during my last round of edits, it is in the corrected draft.

Best,
Holly

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Monday, March 15, 2021 8:13 AM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Subject: RE: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Good morning Holly,

Just to confirm, the 2nd ZendTo package (with "corrected_03122021" at the end of the doc title) is the most recent and the one we should be working with?

Thanks, and Happy Monday!
-Liz

Review and Compliance – AK SHPO
Office of History and Archaeology
liz.ortiz@alaska.gov
We are currently teleworking; email communication is best. Be well!

From: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Friday, March 12, 2021 3:58 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>
Subject: NFAPT00249 Deering Airport and Access Road Improvements Findings letter

Hi Liz,

The copy of the findings letter I sent via ZendTo didn't have the attachments listed in the document. Please see updated letter attached here.

Best,
Holly

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

Letter to Community on Finding

From:	Gordon, Keith (FAA)
To:	transportation@ipnatchiaq.org; tribeadmin@ipnatchiaq.org
Cc:	McKinney, Holly Jean (DOT); Hutchinson, Jonathan J (DOT)
Subject:	Deering Airport Improvement Project - Offer to comment on draft 4(f) de Minimis determination via the Draft EA Public Notice process
Date:	Wednesday, January 19, 2022 10:02:48 PM
Attachments:	Deering 4f consultation letter Deering Nat Vill.docx

Ms. Carter,

As noted in the attached letter the U.S. Department of Transportation (DOT) Federal Aviation Administration (FAA) has made a draft de Minimis determination in relation to potential impacts to historic properties potentially affected by the proposed Deering Airport project.
The attached letter is an invitation to comment on the draft 4(f) de Minimis determination via the Draft Environmental Assessments (EA) public comment period. Alternately you or interested parties may comment directly to me via email. If comments are submitted please do so within the 30-day comment period noted in the draft EA's public notice comment period.

If you or any other interested party has any questions please contact me via email or at the phone number listed below.

Thank you for your time.

Keith Gordon
Environmental Protection Specialist
Federal Aviation Administration
Alaska Region
222 West 7th Avenue, #14
Anchorage, AK 99513-7587
Desk – 907-271-5030
Fax – 907-271-2851

U.S. Department
of Transportation

**Federal Aviation
Administration**

Alaskan Region Airports Division

222 W. 7th Avenue, Box #14
Anchorage, Alaska 99513-7587
Tel. (907) 271-5438
Fax (907) 271-2851

January 19, 2022

Ms. Gloria Carter
Tribal Administrator

The purpose of this letter is to inform the reader of a proposed Section 4(f) de Minimis determination made by the Alaskan Region of the Federal Aviation Administration (FAA) and invite comments on that draft 4(f) determination, if any. Comments, if any, can be made via the draft Deering Environmental Assessment (EA) public review and comment process which will be public noticed for a 30-day comment period which will commence at any time within 30 days of the date on this letter. The draft Deering EA and the proposed Section 4(f) de Minimis determination and related information will be available at the following website: Welcome - Alaska Online Public Notices (state.ak.us)

Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 (the act) (now codified at 49 U.S.C. § 303) protects significant publicly owned parks, recreation areas, wildlife and waterfowl refugees, and public and private historic sites. Section 4(f) of the act provides that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife or waterfowl refugee of national, state, or local significance, only of there is no feasible and prudent alternative to the use of that land and the program or project includes all possible planning to minimize harm resulting from the use.

Currently the Alaska Department of Transportation and Public Facilities (DOT&PF), as the owner/operator of the Deering Airport, and the U.S. DOT Federal Aviation Administration via it's Airport Improvement Program grants process, proposes to address periodic flooding at the Deering Airport (see Figure 2 in the Section 106 Appendix {Appendix D} of the draft EA) that threatens the runway embankment, and would bring the airport to current Alaska Statewide Transportation Plan, Alaska Aviation System Plan, and FAA design standards. The proposed project would include the following elements (see Figures 3-5(a-f) in the Section 106 Appendix {Appendix D} of the Draft EA):

1. Rehabilitate and resurface the airport runway surfaces.
2. Repair runway embankments (flattening the side slope from 4:1 to 6:1, adding 10 feet of fill, which will widen the existing toe).
3. Construct a new airport access road, including a new bridge over Smith Creek.
4. Apply dust palliative to airport ground traffic surfaces.
5. Replace the airport lighting system.
6. Improve or re-establish sufficient airport drainage.
7. Construct a snow fence. (NOTE: this element has been eliminated from the project)
8. Utilize existing gravel bars (with exposed, un-vegetated gravel, see Figures 5a-5f) within the Inmachuk River floodplain for material sources and mobilize these materials and other equipment to the airport construction area using the combined existing

community barge landing (see Figure 6) and developed roads. Potential material sources and/or staging areas include:

- Inmachuk River Bars #1 (Figure 5a)
- Inmachuk River Bars #2 (Figure 5a)
- 2020_03 (Figure 5b)
- 2020_06 (Figure 5b)
- 2020_07 (Figure 5c)
- 5-Mile Pit (Figure 5c)
- Gravel Site 8 (Figure 5d)
- RMS #2 (Figure 5d)
- RMS #3 (Figure 5d)
- 2020_09 (Figure 5e)
- Gravel Site 6 (Figure 5f)
- 9-Mile Pit (Figure 5f)

In relation to the proposed Deering Airport project Section 4(f) of the Department of Transportation Act of 1966 applies only to potential historic properties within the proposed projects Area of Potential Effect (APE) as defined in the Section 106 National Historic Preservation Act consultation described and defined in the Section 106 Appendix (Appendix D) of the Draft EA.

Due to Covid telework restrictions this letter will be disbursed electronically only.

/S/
Keith Gordon
Environmental Protection Specialist

Letter to SHPO on Finding

From:	Gordon, Keith (FAA)
To:	Bittner, Judith E (DNR)
Cc:	McKinney, Holly Jean (DOT); Hutchinson, Jonathan J (DOT)
Subject:	FW: Deering Airport Improvement Project - Offer to comment on draft 4(f) de Minimis determination via the Draft EA Public Notice process
Date:	Wednesday, January 19, 2022 10:07:02 PM
Attachments:	Deering 4f consultation letter SHPO.docx

Ms. Bittner,

As noted in the attached letter the U.S. Department of Transportation (DOT) Federal Aviation Administration (FAA) has made a draft de Minimis determination in relation to potential impacts to historic properties potentially affected by the proposed Deering Airport project.
The attached letter is an invitation to comment on the draft 4(f) de Minimis determination via the Draft Environmental Assessments (EA) public comment period. Alternately you or interested parties may comment directly to me via email. If comments are submitted please do so within the 30-day comment period noted in the draft EA's public notice comment period.

If you or any other interested party has any questions please contact me via email or at the phone number listed below.

Thank you for your time.

Keith Gordon
Environmental Protection Specialist
Federal Aviation Administration
Alaska Region
222 West 7th Avenue, #14
Anchorage, AK 99513-7587
Desk – 907-271-5030
Fax – 907-271-2851

U.S. Department
of Transportation

**Federal Aviation
Administration**

Alaskan Region Airports Division

222 W. 7th Avenue, Box #14
Anchorage, Alaska 99513-7587
Tel. (907) 271-5438
Fax (907) 271-2851

January 19, 2022

Ms. Judith Bittner
State Historic Preservation Officer

The purpose of this letter is to inform the reader of a proposed Section 4(f) de Minimis determination made by the Alaskan Region of the Federal Aviation Administration (FAA) and invite comments on that draft 4(f) determination, if any. Comments, if any, can be made via the draft Deering Environmental Assessment (EA) public review and comment process which will be public noticed for a 30-day comment period which will commence at any time within 30 days of the date on this letter. The draft Deering EA and the proposed Section 4(f) de Minimis determination and related information will be available at the following website: Welcome - Alaska Online Public Notices (state.ak.us)

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Currently the Alaska Department of Transportation and Public Facilities (DOT&PF), as the owner/operator of the Deering Airport, and the U.S. DOT Federal Aviation Administration via it's Airport Improvement Program grants process, proposes to address periodic flooding at the Deering Airport (see Figure 2 in the Section 106 Appendix {Appendix D} of the draft EA) that threatens the runway embankment, and would bring the airport to current Alaska Statewide Transportation Plan, Alaska Aviation System Plan, and FAA design standards. The proposed project would include the following elements (see Figures 3-5(a-f) in the Section 106 Appendix {Appendix D} of the Draft EA):

1. Rehabilitate and resurface the airport runway surfaces.
2. Repair runway embankments (flattening the side slope from 4:1 to 6:1, adding 10 feet of fill, which will widen the existing toe).
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5. Replace the airport lighting system.
6. Improve or re-establish sufficient airport drainage.
7. Construct a snow fence. (NOTE: this element has been eliminated from the project)
8. Utilize existing gravel bars (with exposed, un-vegetated gravel, see Figures 5a-5f) within the Inmachuk River floodplain for material sources and mobilize these materials and other equipment to the airport construction area using the combined existing

community barge landing (see Figure 6) and developed roads. Potential material sources and/or staging areas include:

- Inmachuk River Bars #1 (Figure 5a)
- Inmachuk River Bars #2 (Figure 5a)
- 2020_03 (Figure 5b)
- 2020_06 (Figure 5b)
- 2020_07 (Figure 5c)
- 5-Mile Pit (Figure 5c)
- Gravel Site 8 (Figure 5d)
- RMS #2 (Figure 5d)
- RMS #3 (Figure 5d)
- 2020_09 (Figure 5e)
- Gravel Site 6 (Figure 5f)
- 9-Mile Pit (Figure 5f)

In relation to the proposed Deering Airport project Section 4(f) of the Department of Transportation Act of 1966 applies only to potential historic properties within the proposed projects Area of Potential Effect (APE) as defined in the Section 106 National Historic Preservation Act consultation described and defined in the Section 106 Appendix (Appendix D) of the Draft EA.

Due to Covid telework restrictions this letter will be disbursed electronically only.

/S/
Keith Gordon
Environmental Protection Specialist

SHPO Response on Finding

From:	Hutchinson, Jonathan J (DOT)
To:	Lindberg, Sara; Cooper, Ryan
Cc:	Niemiec, Andrew
Subject:	FW: Deering Airport Improvement Project - Offer to comment on draft 4(f) de Minimis determination via the Draft EA Public Notice process
Date:	Tuesday, February 22, 2022 8:57:34 AM
Attachments:	Deering 4f consultation letter SHPO.docx

Good morning,
Passing this along for incorporation into the Final.

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Friday, February 18, 2022 4:48 PM
To: Gordon, Keith <AAL> <keith.gordon@faa.gov>
Cc: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>; Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Subject: FW: Deering Airport Improvement Project - Offer to comment on draft 4(f) de Minimis determination via the Draft EA Public Notice process

3130-1R FAA 2020-00203

Good afternoon Keith,

The Office of History and Archaeology / Alaska State Historic Preservation Office received your draft 4(f) de minimis determination correspondence (dated January 19, 2022) on January 21, 2022. Following review of the documentation provided, our office does not have objections to the de minimis determination for the Deering Airport Improvement Project.

Thank you for the opportunity to review the draft EA, Appendices, and Section 4(f) determinations. If you have any questions or if we can be of further assistance, please contact me at liz.ortiz@alaska.gov.

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 on a hybrid schedule; email communication is best. Be well!

From: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Sent: Friday, January 21, 2022 4:53 PM

To: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Subject: FW: Deering Airport Improvement Project - Offer to comment on draft 4(f) de Minimis determination via the Draft EA Public Notice process

2020-00203

From: Bittner, Judith E (DNR) <judy.bittner@alaska.gov>
Sent: Friday, January 21, 2022 1:46 PM
To: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Subject: Fw: Deering Airport Improvement Project - Offer to comment on draft 4(f) de Minimis determination via the Draft EA Public Notice process

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From: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Sent: Wednesday, January 19, 2022 10:06 PM
To: Bittner, Judith E (DNR) <judy.bittner@alaska.gov>
Cc: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>; Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Subject: FW: Deering Airport Improvement Project - Offer to comment on draft 4(f) de Minimis determination via the Draft EA Public Notice process

As noted in the attached letter the U.S. Department of Transportation (DOT) Federal Aviation Administration (FAA) has made a draft de Minimis determination in relation to potential impacts to historic properties potentially affected by the proposed Deering Airport project.
The attached letter is an invitation to comment on the draft 4(f) de Minimis determination via the Draft Environmental Assessments (EA) public comment period. Alternately you or interested parties may comment directly to me via email. If comments are submitted please do so within the 30-day comment period noted in the draft EA's public notice comment period.

If you or any other interested party has any questions please contact me via email or at the phone number listed below.

Thank you for your time.

Keith Gordon
Environmental Protection Specialist
Federal Aviation Administration

Alaska Region
222 West 7th Avenue, #14
Anchorage, AK 99513-7587
Desk – 907-271-5030
Fax – 907-271-2851

Appendix I: Government to Government Consultation

Scoping Package

U.S. Department
of Transportation

**Federal Aviation
Administration**

AIRPORTS DIVISION

222 W. 7th Avenue, Box 14
Anchorage, Alaska
99513-7587

January 19, 2021

Calvin D. Moto Jr.
Tribal President
Native Village of Deering
PO Box 36089
Deering, AK 99736

Dear Chief Moto**,**

NFAPT00249 Deering Airport and Access Road Improvements, [*AIP #*], Deering, Alaska**,**
Government-to-Government Consultation Initiation*****
(Please note that due to COVID 19 work restrictions this letter is electronically signed and will only be transmitted electronically)

The Federal Aviation Administration (FAA) in cooperation with the owner and operator of Deering Airport, the Alaska Department of Transportation and Public Facilities (DOT&PF) is initiating an airport improvement project described below at Deering Airport, Deering Alaska.

Purpose of Government-to-Government Consultation
The primary purpose of government-to-government consultation as described in Federal Executive Order 13175 "Consultation and Coordination with Indian Tribal Governments" and FAA's Order 1210.20 "American Indian and Alaska Native Tribal Consultation Policy and Procedures" is to ensure that Federally Recognized Tribes are given the opportunity to provide meaningful and timely input regarding proposed FAA actions that uniquely or significantly affect Tribes.

Consultation Initiation
With this letter, the FAA is offering to consult on concerns that uniquely or significantly affect your Tribe related to the potential action described below. Early identification of Tribal concerns will allow the FAA and the airport owner and operator to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined. We would be pleased to discuss details of the proposed project and its potential impacts with you.

Project Information
The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaskan Region Airports Division of the Federal Aviation Administration (FAA), proposes

airport and access road improvements at Deering Airport, Deering, Alaska. The Project Location is found on the Seward Peninsula about 55 miles south of Kotzebue on Kotzebue Sound near the mouth of the Inmachuk River (see Table 1 and Figure 1).

Table 1. Project location

Township	Range	Section(s)	USGS Quad Map1:63,360	Meridian
008N	020W	24,25,35,36	Kotzebue A-2	Kateel River
008N	019W	19, 30, 31	Kotzebue A-2	Kateel River
007N	020W	2,10,11,15,16	Kotzebue A-2	Kateel River

Project Description

The proposed project would address periodic flooding at the Deering Airport (see Figure 2) that threatens the runway embankment, and would bring the airport to current Alaska Statewide Transportation Plan, Alaska Aviation System Plan, and FAA design standards. The proposed project would include the following elements (see Figures 3-5(a-f)):

1. Rehabilitate and resurface the airport runway surfaces.
2. Repair runway embankments (flattening the side slope from 4:1 to 6:1, adding 10 feet of fill, which will widen the existing toe).
3. Construct a new airport access road, including a new bridge over Smith Creek.
4. Apply dust palliative to airport ground traffic surfaces.
5. Replace the airport lighting system.
6. Improve or re-establish sufficient airport drainage.
7. Construct a snow fence.
8. Utilize existing gravel bars (with exposed, un-vegetated gravel, see Figures 5a-5f) within the Inmachuk River floodplain for material sources and mobilize these materials and other equipment to the airport construction area using the combined existing community barge landing (see Figure 6) and developed roads. Potential material sources and/or staging areas include:
    - Inmachuk River Bars #1 (Figure 5a)
    - Inmachuk River Bars #2 (Figure 5a)
    - 2020_03 (Figure 5b)
    - 2020_06 (Figure 5b)
    - 2020_07 (Figure 5c)
    - 5-Mile Pit (Figure 5c)
    - Gravel Site 8 (Figure 5d)
    - RMS #2 (Figure 5d)
    - RMS #3 (Figure 5d)
    - 2020_09 (Figure 5e)
    - Gravel Site 6 (Figure 5f)
    - 9-Mile Pit (Figure 5f)

Preliminary Area of Potential Effect

The preliminary APE, which is outlined in yellow, includes the project work limits (Figures 3-5), project haul routes (Figure 5), proposed material source locations (Figures 5a-5f), staging areas (Figures 5a, and 5c), and barge landings (Figure 6). The proposed APE at the Deering Airport (see Figure 3), includes all construction areas, and is approximately 364.41 acres in size. The

preliminary APE also includes the proposed new road and bridge (see Figure 4). The proposed new road has a 100-foot right-of-way (ROW) on each side of the road's centerline. The proposed new road will be approximately 1 mile in length. The proposed APE will also include the existing haul road, Deering Road, which provides access from the town of Deering, including the barge landing (see Figure 6) and the Deering Airport (see Figure 3), to all of the proposed material source locations (Figures 5a-5f). The proposed APE for the Deering Road includes a 100-foot ROW from the road's centerline. The Deering Road is approximately 9 miles in length and extends from the city of Deering to the 9-mile pit (see Figure 5). The proposed project APE also includes the following twelve exposed gravel bar locations, which are potential material sources for this project: Inmachuk River Bars #1 (4.09 acres, Figure 5a); Inmachuk River Bars #2 (potential staging area, 8.61 acres, Figure 5a); 2020_03 (1.01 acres, Figure 5b); 2020_06 (2.67 acres, Figure 5b); 2020_07 (3.14 acres, Figure 5c); 5-Mile Pit (potential staging area, 2.10 acres, Figure 5c); Gravel Site 8 (1.74 acres, Figure 5d); RMS #2 (1.47 acres, Figure 5d); MS #3 (5.17 acres, Figure 5d); 2020_09 (7.73 acres, Figure 5e); Gravel Site 6 (2.14 acres, Figure 5f); and 9-Mile Pit (3.01 acres, Figure 5f).

Most of the work is expected to be completed within the existing Airport and Deering Road ROW. Additional ROW for the proposed new road is expected to be acquired from the Village of Deering, Deering Ipnatchiak Corporation and Nana Regional Corporation (surface) and Nana Regional Corporation (subsurface) (see Figure 4).

The APE will be finalized after comments are received from your agency and the other consulting parties.

Identification Efforts

A search of the Alaska Heritage Resources Survey-IBS (AHRS) database on December 18, 2020 indicated that one (1) AHRS polygon (KTZ-00169) is located within the preliminary APE. An additional AHRS site (KTZ-00024, Inmachukmuit Burials) is located directly adjacent to preliminary APE. These AHRS sites are shown on Figures 3 and 6 and are briefly described below.

KTZ-00024 Inmachukmuit Burials- This site, is directly adjacent to the preliminary APE (see Figure 3), contains the remains of five platform burials which are located on a low bluff approximately 800 meters west of the old village site of Imnatchiagmiut (KTZ-00003) (see Figure 6). The five collapsed platforms, are constructed of driftwood, sawn planks, and nails. Each of the collapsed platforms had human skeletal remains lying on the ground around them. The burials may be associated with a 1900 measles epidemic. This site has not received a DOE for inclusion in the NRHP.

KTZ-00169 Deering Archaeological District- This archaeological district includes the following AHRS sites: KTZ-00023 (Deering Qualgi), KTZ-00168 (KTZ-00168), KTZ-00300 (Deering Western Thule House 1), and KTZ-00301 (Deering Western Thule House 2). KTZ-00170 (Deering Historic District) and KTZ-00299 (Deering Ipiutak House and Cache) are found within the Deering Archaeological District polygon, but they are not listed in the AHRS database as being part of the Deering Archaeological District. As the preliminary APE does not encompass the locations of KTZ-00170 and KTZ-00299, they are not discussed further here. More in-depth descriptions of the individual sites comprising the Deering Archaeological District are provided

below. The archaeological district hasn't received a formal determination of eligibility (DOE) for inclusion in the National Register of Historic Places (NRHP). However, as part of a Programmatic Agreement associated the Deering Village Safe Water Archaeological Program (Bowers et al. 1999, Bowers et al. 2005, and Bowers 2009), the archaeological district has been treated as eligible for the NRHP (AHRS database, filed as 3330-6 Deering Archaeological District, SHPO action date: 04/03/1998).

> *KTZ-00023* consists of a Qualgi, an Ipiutak ceremonial house. The qualgi is constructed out of logs and measures 8m x 12m, it contains a large rectangular fireplace in the center and a shed on one end. A Western Thule-style toggling harpoon head was found associated with the hearth. Artifacts recovered from the site include 24 artifacts of Euroamerican origin, 17 mammal bones, a sawn whale bone, decayed wood fragments, and 21 splintered bird bone fragments. The site dates between 1280+/-40 and 1230+/-40 radiocarbon years BP. KTZ-00023 has not received a DOE for inclusion in the NRHP.
>
> *KTZ-00168* consists of a collapsed semi-subterranean structure that according to Gilbert Karmum (Mayor of Deering) is thought to be a cold storage cellar associated with the Native store, which is immediately to the North of the site. The site was built around 1903 by non-Natives for the purpose of supplying mining activities on the Seward Peninsula. The roof of the structure has collapsed, slumping down into the interior of the structure. KTZ-00168 has not received a DOE for inclusion in the NRHP.
>
> *KTZ-00300* is a Western Thule house (House 1). The house is a 2.5 meter square house with a main room, a 6.4 meter long south facing entrance tunnel, and a side room that presumably functioned as a kitchen. The house was constructed of driftwood, whalebone, and sod. The most reliable date for this structure is 910+/-40 BP as it was obtained from charcoal beneath the main house room floorboards. This site has not received a DOE for inclusion in the NRHP.
>
> KTZ-00301 is a Western Thule house (House 2). The house consists of a main room that measures 3.7 meters x 3.2 meters. The length of the entrance tunnel and the presence and/or absence of a side room are unknown because of limited test excavations. The house was constructed of driftwood, whalebone, and sod. A single radiocarbon date of BP 820+/-40 has been obtained for the site. The site has not received a DOE for inclusion in the NRHP.

A search of the Alaska Department of Natural Resources Division of Mining, Lands and Water Revised Statute (RS) 2477 database indicates that there is one (1) recognized public right-of-ways under this Statute within the Deering Archaeological District. RST 1737, the Candle-Deering trail is located within the eastern edge of the district. That location, however, is not within the preliminary APE. A search of the DOT&PF Northern Region Cultural Resources Library indicated that the area around the Deering Airport was previously surveyed by Powers et al. (1982), and the area around Deering and the Deering Road was previously surveyed by Bowers (2007), Bowers (2009), Bowers et al. (1999), Bowers et al. (2005), Jensen and Erickson (2016), Meinhardt et al. (2013), Randall (2014), Reanier et al. (1999), and Heppner (2015). Other than the sites that comprise the Deering Archaeological District, no other AHRS sites were found within the preliminary APE.

Confidentiality
We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional and cultural importance to the Tribe. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

FAA Contact Information
If you wish to provide comments related to this proposed project, please contact Keith Gordon on behalf of **Jack Gilbertsen, Airports Tribal Consultation Official**, at the address above, at 907-271-5030, or by e-mail at Keith.gordon@faa.gov

Project Consultation Options Form
Your timely response will assist us in incorporating your concerns into project planning. For that purpose, we respectfully request that you complete the enclosed Project Consultation Options form and forward it to the FAA within thirty (30) days of your receipt of this correspondence.

Sincerely,

/S/
Keith Gordon on behalf of
Jack Gilbertsen
Airports Tribal Consultation Official

Enclosures:
Enclosures: Figure 1 – Location & Vicinity Map
Figure 2 – Historic Flooding (spring 2016)
Figure 3 – Proposed Action Site Plan
Figure 4 – New Airport Access Road and Bridge
Figure 5 (5a-5f) – Potential Material Sites
Figure 6- AHRS sites at the Deering Airport and at Deering, Alaska

References

Bowers, Peter, Catherine Williams, Owen Mason, and Robin Mills
1999 *Preliminary Report on the 1999 Deering Village Safe Water Archaeological Program*. Report prepared for the Alaska Department of Environmental Conservation Village Safe Water Office. Northern Land Use Research, Inc., Fairbanks, Alaska.

Bowers, P. M., J. I. M. Newton, J. D. Reuther, and C. M. Williams
2005 Interim Report on the Deering Village Safe Water Archaeological Program. Report prepared for the City of Deering, Native Village of Deering, Alaska Department of Environmental Conservation Village Safe Water Office and the Alaska State Historic Preservation Officer. Northern Land Use Research, Inc., Fairbanks, Alaska.

Bowers, Peter
2007 Cultural Resource Survey of Proposed Material Source and Monitoring of Road

Improvements in the Vicinity of Deering, Alaska. Prepared for Traditional Village of Deering, Alaska by Northern Land Use Research, Inc. Fairbanks, Alaska.

Bowers, Peter (editor)
2009 *The Archaeology of Deering, Alaska: Final Report on the Village Safe Water Archaeological Program*. Report prepared for the Native Village of Deering, City of Deering, Alaska Department of Environmental Conservation Village Safe Water Office. Northern Land Use Research, Inc., Fairbanks, Alaska.

Jensen, Anne M., and Kaare Erickson
2016 *Archaeological Monitoring for the Deering Three Home Project*. Submitted to The Northwest Inupiat Housing Authority. UIC Science, Barrow, Alaska

Meinhardt, Robert L., Amy Ramirez, Annalisa Heppner, and Phillip T. Ashlock II
2013 *Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska*. Submitted to Bristol Engineering Services Corporation. True North Development Services, Anchorage, Alaska.

Powers, W.R., J.A. Adams, A. Godfrey, J.A. Ketz, D.C. Plaskett, and G.R. Scott
1982 *The Chukchi-Imuruk Report: Archeological Investigations in the Bering Land Bridge National Preserve, Seward Peninsula, Alaska, 1974 and 1975*. Occasional Paper No. 31. Anthropology and Historic Preservation, Cooperative Park Studies Unit, University of Alaska, Fairbanks.

Randall, J.
2014 Northwest Arctic Borough Deering Hybrid Wind System, USA CE #POA-2013-664. Solstice Alaska Consulting, Inc., Anchorage, Alaska. Correspondence and appended literature review conducted by Cultural Resources Consulting (2013) is on file at the Alaska Office of History and Archaeology.

Reanier, R. E., B. P. Barr, R. J. Peterson, and A. M. Jensen
1999 Cultural Resources Survey of Property Selected for Proposed New Post Office in Deering, Alaska. UIC Science Division Technical Report #5. Ukpeagvik Inupiat Corporation, Barrow, Alaska.

Smith, Ross, and Annalisa Heppner
2015 *Cultural Resources Survey Report for the Deering 5 Home Project*. Submitted to Northwest Inupiat Housing Authority. SWCA, Anchorage, Alaska.

Cc:
Holly Mckinney, DOT&PF, Northern Region, Cultural Resource Specialist
Brett Nelson, DOT&PF, Northern Region, Environmental Manager

Tribal Government to Government Consultation Response Form

Calvin D. Moto Jr.
Tribal President
Native Village of Deering
PO Box 36089
Deering, AK 99736

Deering Airport and Access Road Improvements
Federal/State Project Numbers: *NFAPT00249*

Please check a response, provide contact information, sign and mail or email this form to FAA.

____ The *[Name of Tribe]*, a federally recognized tribe, would like to consult with the FAA in a government-to-government relationship for this proposed project.

____ The *[Name of Tribe]* has no interest associated with this proposed project and further consultation is not required.

_____ _____
Tribal Leader (Please print) Telephone

_____ _____
Tribal Leader (Signature) Date

If you have decided to consult, please identify a Tribal Representative for the consultation.

_____ _____
Name of Formal Tribal Representative (Please print) Telephone

_____ _____
Name of Formal Tribal Representative (Signature) Date

Tribal Contact information:

Phone:
e-mail:
Other: (please describe)

Please email, the Response Form to: Keith.gordon@FAA.gov

Response

Tribal Government to Government Consultation Response Form

Calvin D. Moto Jr.
Tribal President
Native Village of Deering
PO Box 36089
Deering, AK 99736

Deering Airport and Access Road Improvements
Federal/State Project Numbers: *NFAPT00249*

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___ The *Native Village of Deering* has no interest associated with this proposed project and further consultation is not required.

Calvin Moto II
Tribal Leader (Please print)

907-363-2138
Telephone

Tribal Leader (Signature)

01/ 29/2021
Date

If you have decided to consult, please identify a Tribal Representative for the consultation.

Name of Formal Tribal Representative (Please print)

Telephone

Name of Formal Tribal Representative (Signature)

Date

Tribal Contact information:

Phone: 907-363-2138
E-mail: tribeadmin@ipnatchiaq.org
Other: (please describe)

Please email, the Response Form to: Keith.gordon@FAA.gov

Appendix J: West Airport Road Hydrology Report

FINAL HYDROLOGY REPORT

WEST AIRPORT ROAD PROJECT

Deering, Alaska

Bristol Project No. 32140053

August 2016

Prepared for:

Native Village of Deering
P.O. Box 30689
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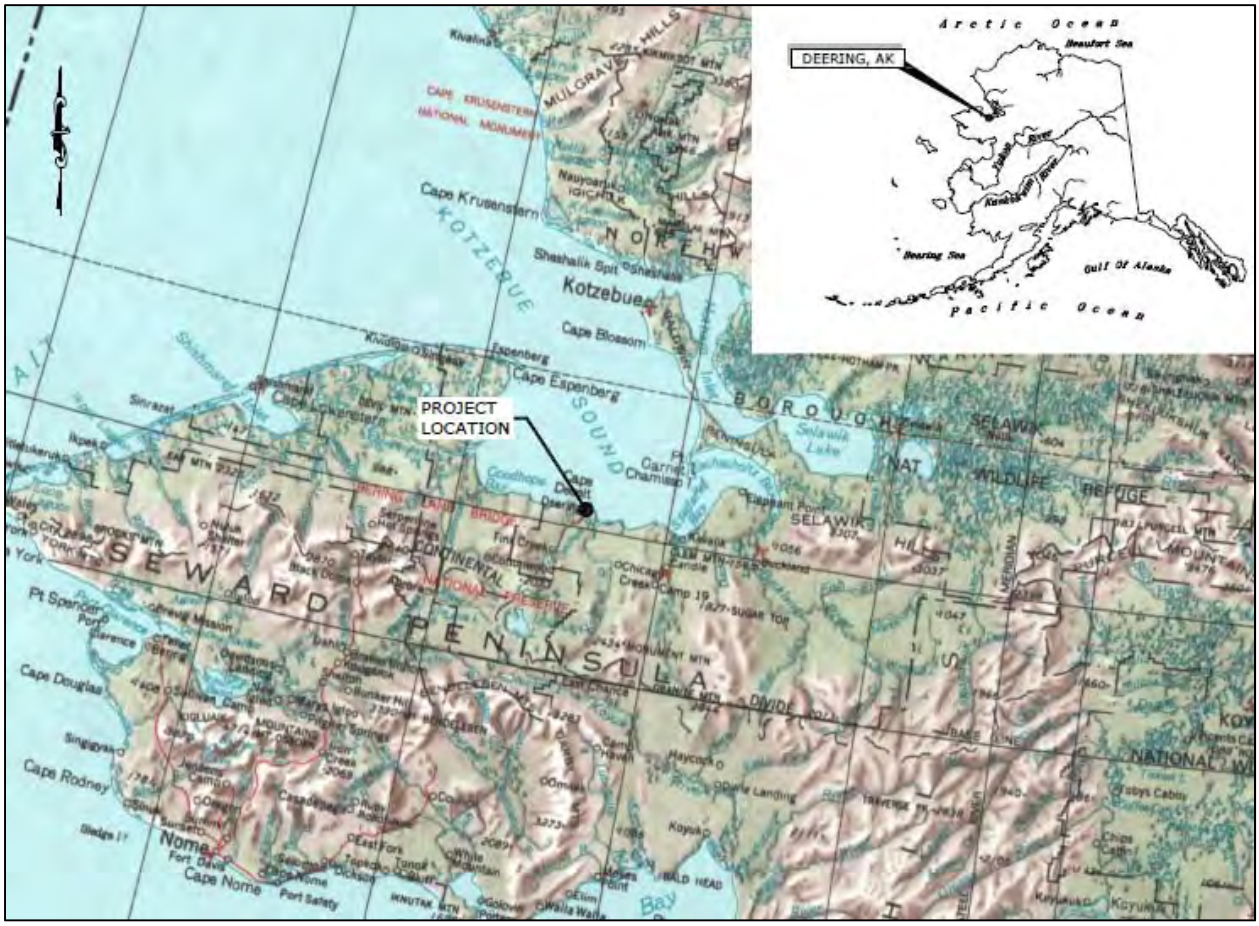
ACRONYMS AND ABBREVIATIONS

°	degrees
BMP	Best Management Practices
Bristol	Bristol Engineering Services Corporation
DCCED	Department of Commerce, Community, and Economic Development
ft./ft.	feet per foot
IDF	Intensity-Duration-Frequency
NVD	Native Village of Deering
PDS	Partial Duration Series
PE	Professional Engineer
WAR	West Airport Road

1.0 INTRODUCTION

Bristol Engineering Services Corporation (Bristol) is under contract with the Native Village of Deering (NVD) to develop a plan set, specifications, and engineer's estimate to facilitate in the construction of West Airport Road (WAR) on the northwest side of Deering, Alaska (Figure 1).

Figure 1 Location & Vicinity Map



This report details how Bristol determined stormwater flow, stormwater pipe sizing, and bridge hydraulic modeling for the WAR Project; it also summarizes climatic data, describes flow calculation methods, and recommends culvert sizes and locations.

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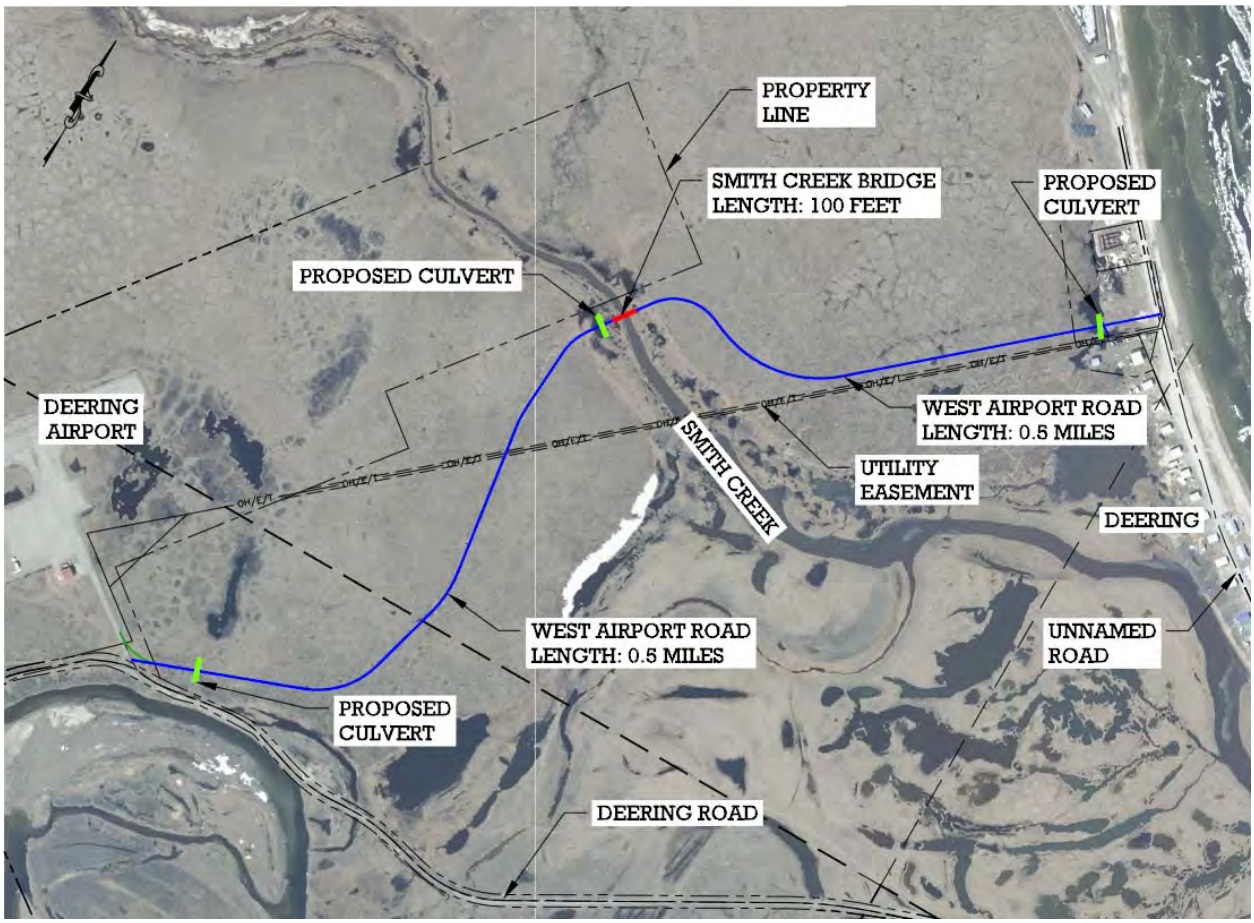
2.0 BACKGROUND

The project consists of the construction of WAR in Deering, which is 1.0 mile in length and includes a bridge crossing. This route is a high priority identified by the Deering Indian Reorganization Act Council. The road begins at Deering Road, near the airport turn-off and ends at Unnamed Road near the current city garage; it traverses tundra, grass, and firm ground. The project is shown below in Figure 2.

Figure 2 Project Area



The community has an interest in upgrading the route to a Class 5 road with a 100' single-span pre-engineered bridge. The route would serve as the primary egress during an emergency evacuation of the village due to flooding (when Deering Road becomes impassable between the village and the airport). The route would also provide a year-round

means of mobilizing heavy equipment between the village and the airport. The existing bridge on Deering Road across Smith Creek is not capable of supporting heavy loads.

The lengths and typical sections of the road are:

- WAR – 1.0 miles
    - 24-foot-wide cross-section from Deering Road to Smith Creek (0.5 miles)
    - 14-foot-wide bridge crossing Smith Creek (100 feet)
    - 24-foot-wide cross-section from Smith Creek to the City garage (0.5 miles)

The road design includes 12-foot lanes for the entire length of the roadway, and the bridge design includes 7-foot lanes with an additional 3-foot shoulder for the guardrail section. Figure 3 shows the road to bridge transition top view. Figure 4 shows the typical sections for the road and bridge at locations A, B and C indicated on Figure 3.

Figure 3 Bridge Transition

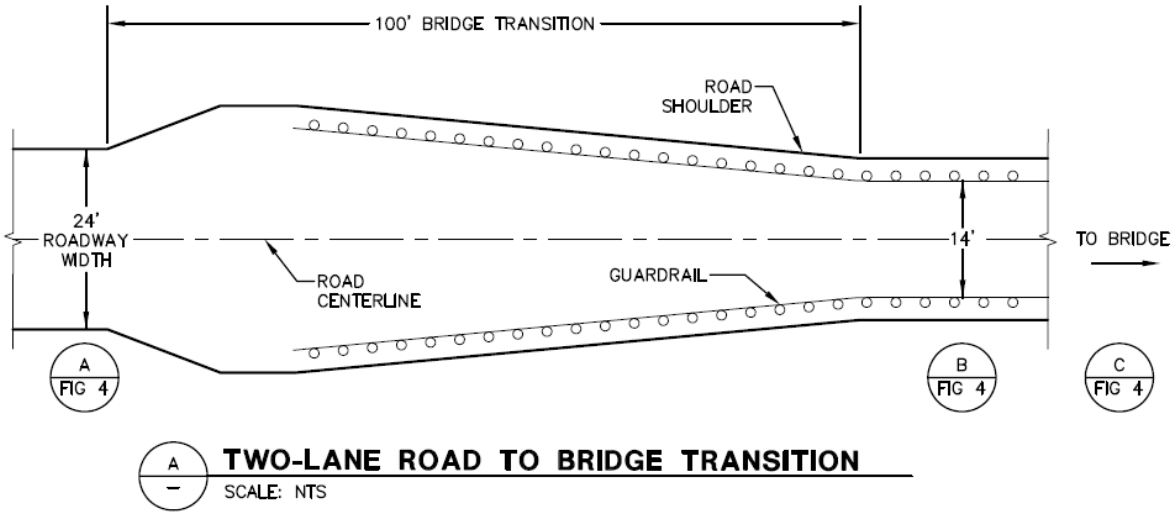
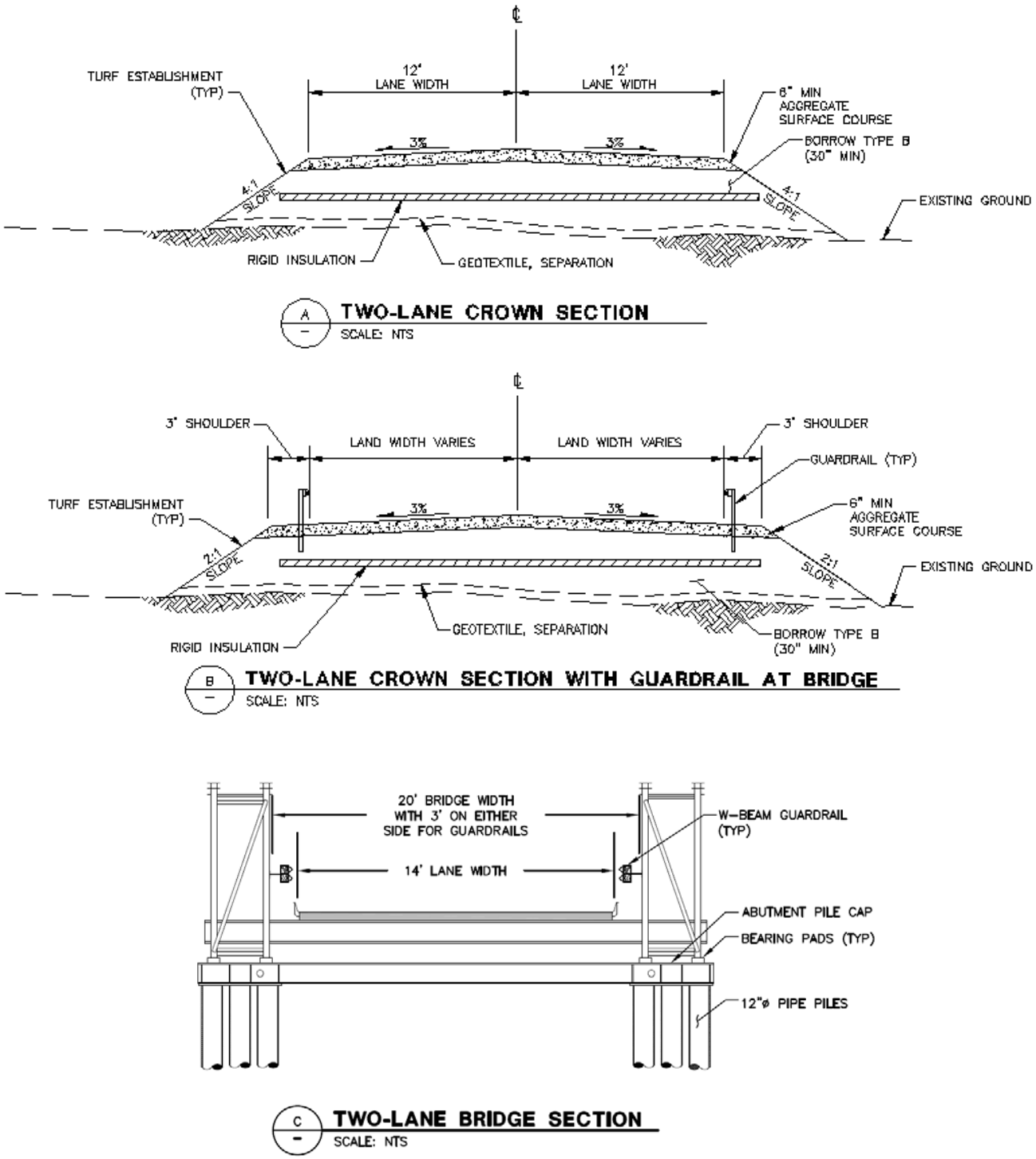


Figure 4 Typical Roadway & Bridge Sections



2.1 LOCATION AND CLIMATE

Deering is located on Kotzebue Sound at the mouth of the Inmachuk River, 57 miles southwest of Kotzebue. It is built on a flat sand and gravel spit 300 feet wide and a half-mile long. Deering is 66 degrees (°) 4 minutes (') and 30 seconds (") north latitude and 165° 42' 46" west longitude in Sections 19 and 30, Township 8 North, Range 19 West, of the Kateel River Meridian. Deering is located in the Cape Nome Recording District. The area encompasses 5.10 square miles of land and 0.10 square miles of water.

Deering is located in the transitional climate zone, which is characterized by long, cold winters and cool summers. The average low temperature during January is -18° Fahrenheit. The average high during July is 63° Fahrenheit. Temperature extremes from a low of -60 to a high of 85° Fahrenheit have been measured. Annual snowfall averages 36 inches, and total precipitation averages 9 inches per year. Kotzebue Sound is ice-free from early July until mid-October (Alaska Department of Commerce, Community, and Economic Development [DCCED], 2014).

2.2 SITE VISIT

Isaac Pearson, PE with Bristol visited Deering in January. On January 22, he inspected and photographed the existing conditions along the proposed corridor with a community member, Kevin Moto. A photograph log from this visit is provided in Appendix A. That evening, he gave a presentation about the proposed roadway at a Council Meeting. On January 23, Isaac spoke to the community at the Deering IRA Annual Meeting and discussed concerns about the drainage, culturally sensitive areas, and the new bridge along the proposed corridor.

3.0 HYDROLOGY ANALYSIS

As part of this project, Bristol performed a hydrological analysis of the watershed, which affects the existing roads. The information required to perform the analysis was gathered from topographical maps and available reference material. To complete the analysis Bristol determined the desired rainfall intensity return event, and determined the drainage basin sizes and characteristics. The individual drainage basin characteristics included size, location, land type, slope, and flow length. Professional staff used the Rational Method to estimate peak runoff for drainage swale and storm drain pipe sizing:

$$Q_p = CiA$$

Q_p = peak runoff quantity, ft^3/s

C = runoff coefficient, dimensionless

i = rainfall intensity, in/hr

A = drainage area, acres

There are four basic assumptions for using the rational equation:

1. The rainfall intensity is constant for a time interval at least equal to the time of concentration;
2. The runoff is a maximum when the rainfall intensity lasts as long as the time of concentration;
3. The runoff coefficient remains constant during the storm event; and
4. The watershed area does not change during the storm.

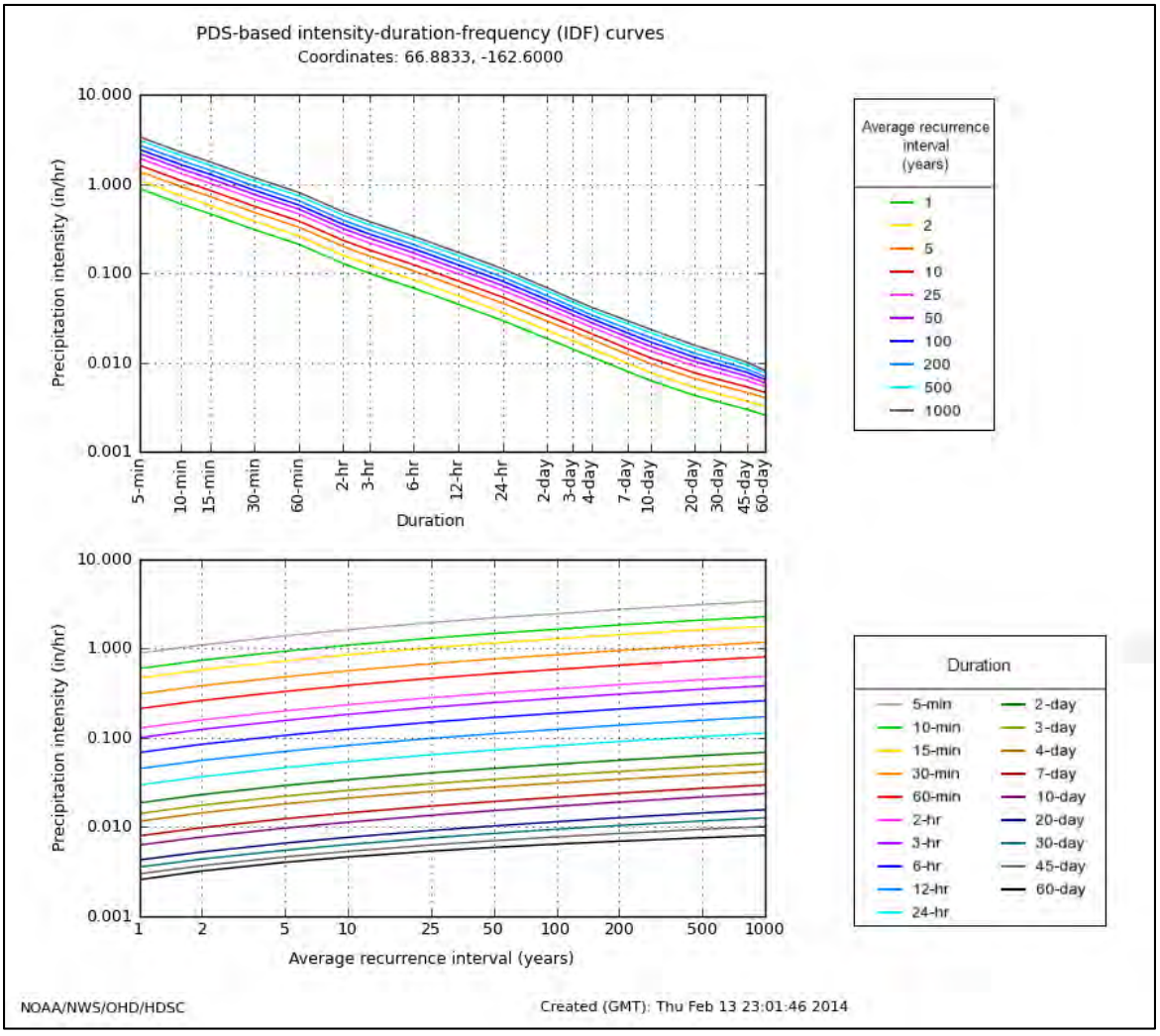
3.1 RAINFALL INTENSITY RETURN EVENT

In most hydrological analyses, the rainfall intensity of a specific return event is used to model the runoff characteristics of the watershed. However, in this case Bristol also considered the spring melt waters as a contributing factor to the 24-hour storm events. The average annual snowfall of 36 inches was converted to a water equivalent of 3.6 inches based on a typical conversion ratio of 10 inches of snow equal to 1 inch of water. Bristol assumed

that the 3.6-inch water equivalent was released over a period of 20 melting days, which added 0.18 inches of rainfall to the storm event in a 24-hour period.

For this analysis, a 10-year 24-hour return event was used. There was no available data for Deering, so the rainfall intensity for Kotzebue was used for this analysis. The rainfall intensity in Kotzebue for this design storm is 0.054 inches/hour as derived from the partial duration series (PDS)-based intensity-duration-frequency (IDF) curves shown below in Figure 5. These graphs were obtained from the National Oceanic and Atmospheric Administration's National Weather Service, Hydro meteorological Design Studies Center, Precipitation Frequency Data Server.

Figure 5 PDS-based IDF Curves (Kotzebue, AK)



This rainfall intensity equates to a total rainfall of 1.30 inches over the 24-hour storm period. For worst-case scenarios 0.18 inches of melt water will be added to spring thaw calculations. The rainfall data for the design and spring thaw storm events are shown in Table 1.

Table 1 Rainfall Intensities for 24-hour Storm Events

Event	Rainfall (inches)	Intensity (in/hr.)
10 Year, Design	1.30	0.054
10 Year, Spring Thaw	1.48	0.062

3.2 DRAINAGE BASIN CHARACTERISTICS

The pre-construction watershed was divided into 7 drainage basins, and the post-construction watershed was divided into 8 drainage basins. The pre-construction drainage basins are shown on Figure 6 (next page) and were determined by the local topography and naturally occurring drainage channels, these basins represent the drainage area conveying to Smith Creek. Post-construction drainage basins are shown on Figure 7 (page 12) which represent the drainage area's potential impact to the road project. Stormwater runoff from the post-construction areas requires channelization via culverts. The locations of the drainage culverts will be evaluated during the design phase of the project.

Once the drainage basins were determined, their areas were calculated with AutoCAD and each basin was assigned a runoff coefficient based upon the typical surface coverage within the basins. Bristol used the Alaska Storm Water Guide (2011) runoff coefficients to determine the average coefficients, which are listed in Table 2.

Table 2 Runoff Coefficients

Surface	Runoff Coefficient (C)
Gravel Road	0.55
Wetlands	0.16
Forest, brush	0.13

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Figure 6 Pre-construction Hydrology Mapping

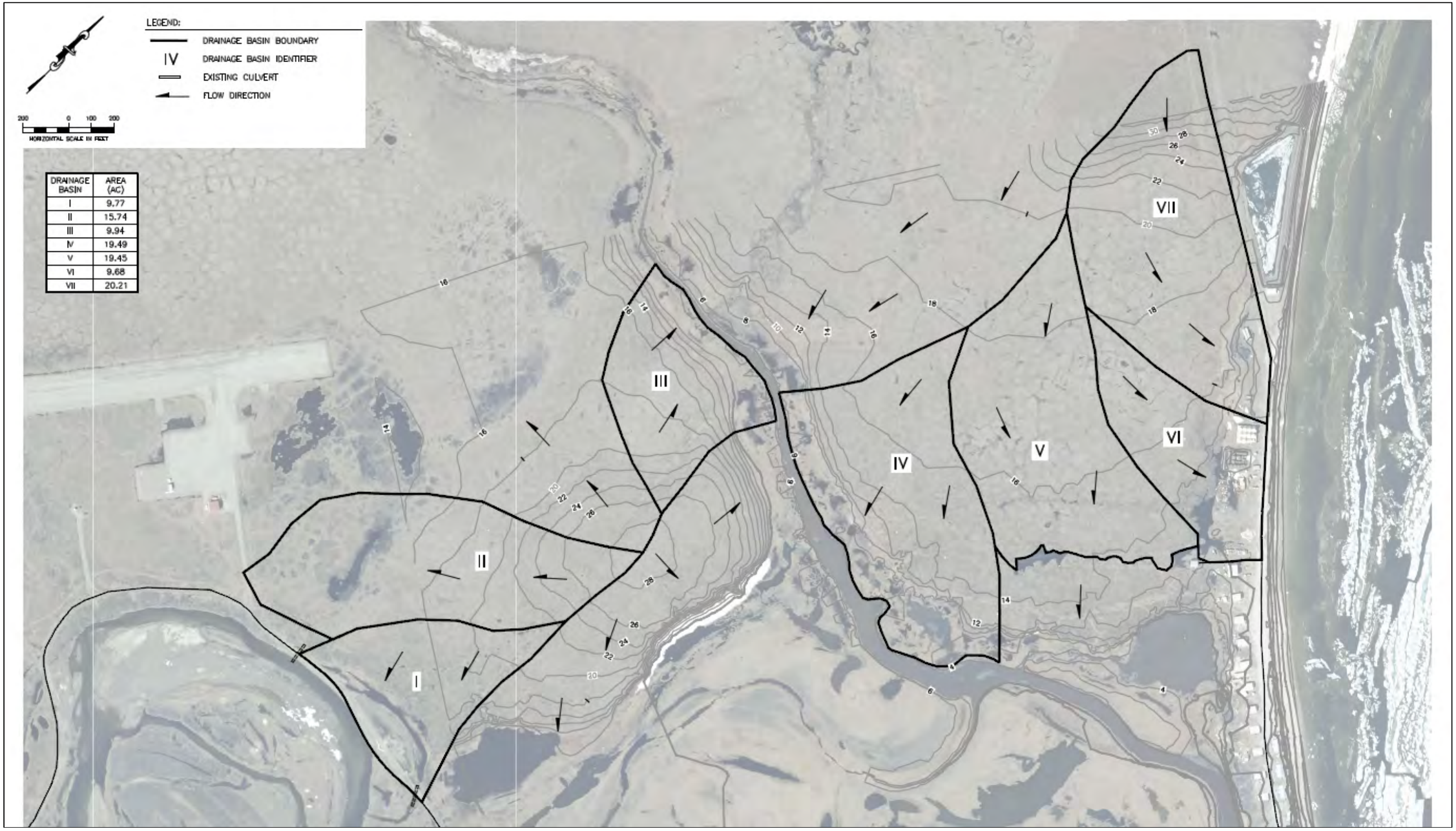
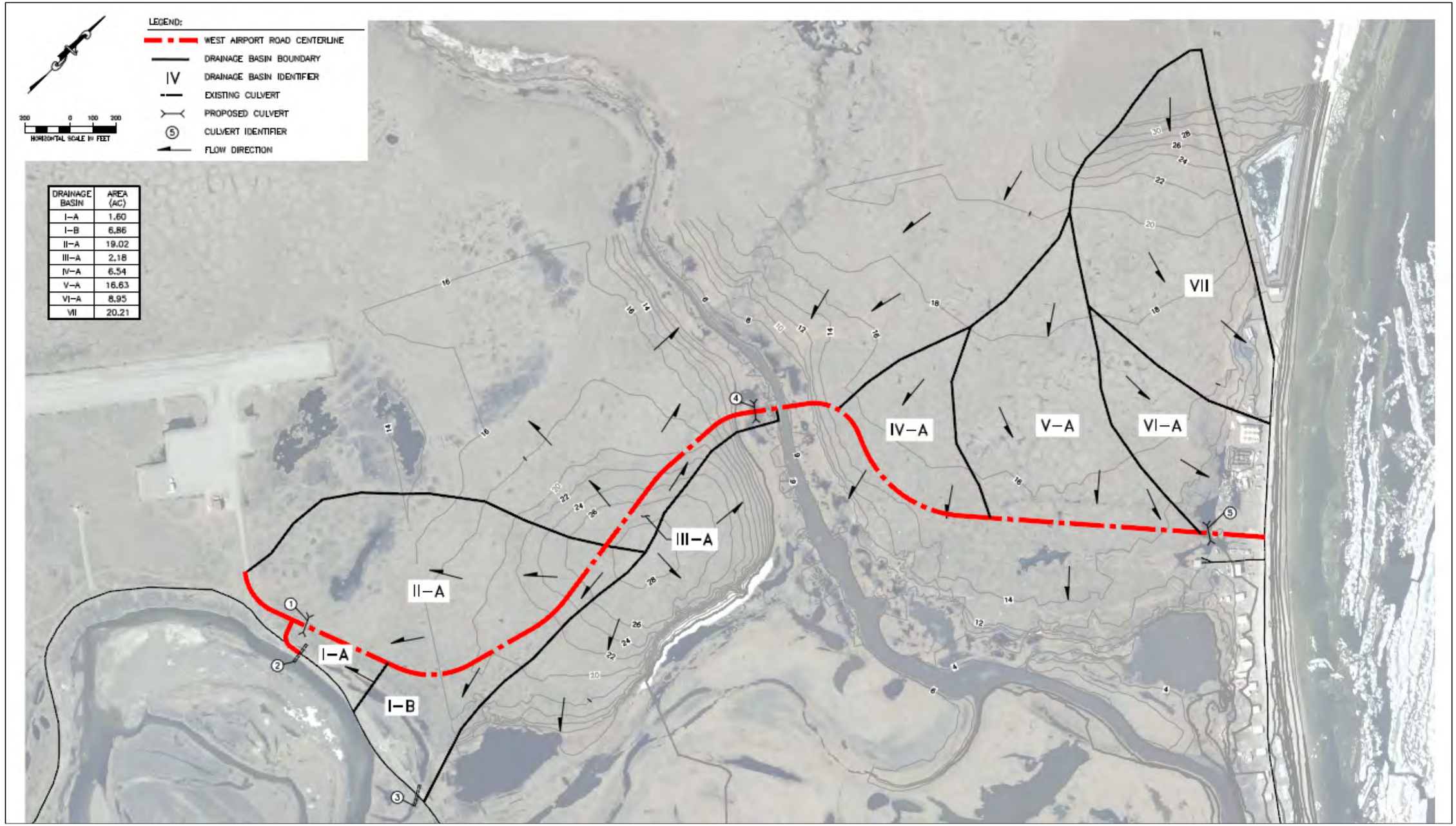


Figure 7 Post-construction Hydrology Mapping



Using the rainfall intensity, drainage basin areas, and the runoff coefficients, the estimated flow rates can be determined using the Rational Method. Flow rates for pre-construction and post-construction conditions were calculated per drainage basin for use in determining culvert location and sizing. Tables 3 and 4 present the flows for each drainage basin within the project area. Total Flow rates for pre-construction are larger than post-construction due to the larger drainage area of Smith Creek, while post construction basins are areas that will drain to the project site.

Table 3 Pre-construction Flow Rate Determination for Design Storm

Drainage Basin	Area (ft^2)	Area (acre)	Dominant Soil Type	C (Calculated Avg)	i (in/hr)	Q = CiA (ft^3/sec)
I	425,757	9.77	Wetlands	0.16	0.054	0.08
II	685,748	15.74	Wetlands	0.16	0.054	0.14
III	433,008	9.94	Wetlands	0.16	0.054	0.09
IV	849,191	19.49	Wetlands	0.16	0.054	0.17
V	847,231	19.45	Wetlands	0.16	0.054	0.17
VI	421,577	9.68	Wetlands	0.20	0.054	0.10
VII	880,236	20.21	Wetlands	0.17	0.054	0.19
Total	**4,542,748**	**104.29**				**0.93**

Table 4 Post-construction Flow Rate Determination for Design Storm

Drainage Basin	Area (ft^2)	Area (acre)	Dominant Soil Type	C (Calculated Avg)	i (in/hr)	Q = CiA (ft^3/sec)
I-A	69,862	1.60	Wetlands	0.25	0.054	0.02
I-B	298,668	6.86	Wetlands	0.21	0.054	0.08
II-A	828,711	19.02	Wetlands	0.18	0.054	0.19
III-A	94,908	2.18	Wetlands	0.28	0.054	0.03
IV-A	284,695	6.54	Wetlands	0.19	0.054	0.07
V-A	724,469	16.63	Wetlands	0.17	0.054	0.16
VI-A	390,024	8.95	Wetlands	0.17	0.054	0.08
VII	880,209	20.21	Wetlands	0.16	0.054	0.17
Total	**3,571,546**	**81.99**				**0.80**

Flow rates for post-construction conditions were then calculated per culvert to show how the new drainage facilities and structures will transmit the storm water throughout the project area. Table 5 presents the post-construction flows at each culvert within the project area.

Table 5 Post-construction Flow Rate per Culvert for Design Storm

Culvert No.	Size (in)	Contributing Drainage Basin	Post-construction Runoff Coefficient (C)	Area (SF)	Area (acres)	Rainfall Intensity	Post-construction Flow Rate (ft^3/sec)
1	36	II-A	0.18	828,711	19.02	0.054	0.18
						Total	**0.18**
2	24	I-A	0.25	69,862	1.60	0.054	0.02
		II-A	0.18	828,711	19.02	0.054	0.18
						Total	**0.21**
3	24*	I-B	0.21	298,668	6.86	0.054	0.08
						Total	**0.08**
4	48	III-A	0.28	94,908	2.18	0.054	0.03
						Total	**0.03**
5	48	IV-A	0.19	284,695	6.54	0.054	0.07
		V-A	0.17	724,469	16.63	0.054	0.15
		VI-A	0.17	390,024	8.95	0.054	0.08
		VII-A	0.16	880,209	20.21	0.054	0.17
						Total	**0.48**

3.2.1 Size

The size of each area is measured in acres. Measurements were determined using AutoCAD Civil 3D 2014 software and DCCED mapping.

3.2.2 Location

The drainage basin locations were chosen based on the land type, their relationship to the discharge point, and the type of water conveyance features in areas. Water conveyance methods include overland flow or a defined channel.

3.2.3 Slope

The measure of slope for a given drainage basin is defined as the amount of fall in elevation divided by length over which the fall occurs. The values of the slope for each drainage basin were determined with topography from the DCCED mapping, and distances were measured in AutoCAD (Figures 6 and 7).

3.2.4 Flow Length

The flow length of a drainage basin is defined as the longest distance a drop of water would have to traverse the sub-area in a straight line. Distances were measured with AutoCAD software.

3.2.5 Time of Concentration

The travel time was calculated using the FAA formula:

$$t_c = [1.8 * (1.1 - C) * (L_o)^{1/2}] / (S)^{1/3}$$

t_c = time of concentration, minutes

C = rational method runoff coefficient, dimensionless

L_o = length to collection point, feet

S = slope, percent

3.3 RESULTS

Table 6 summarizes peak discharges of each drainage basin for the given design storm event. The time of concentration for each drainage basin is also included. The frequency in Table 6 comes from the design storm return period of 10 years.

Table 6 10-Year Storm Drainage Basin Discharge Summary

Drainage Basin	Post-construction Peak Flow (ft^3/sec)	Frequency	Duration	S (%)	L_o (feet)	Post-construction t_c (hr)
I-A	0.02	0.10	24 hours	1.0	343	**0.47**
I-B	0.08	0.10	24 hours	1.2	1397	**0.94**
II-A	0.19	0.10	24 hours	1.4	1346	**0.90**
III-A	0.03	0.10	24 hours	2.7	866	**0.52**
IV-A	0.07	0.10	24 hours	0.4	1983	**1.64**
V-A	0.16	0.10	24 hours	0.4	1708	**1.56**
VI-A	0.08	0.10	24 hours	0.5	1032	**1.13**
VII	0.17	0.10	24 hours	1.0	2074	**1.28**
Total	**0.80**					

Table 7 summarizes the total time of concentration for each culvert, post-construction.

Table 7 Post-construction Time of Concentration for Design Storm

Culvert No.	Size (in)	Contributing Drainage Basin	Post-construction tc (hr)
1	36	II-A	0.90
		Total	**0.90**
2	24	I-A	0.47
		II-A	0.90
		Total	**3.17**
3	24	I-B	0.94
		Total	**5.49**
4	48	III-A	0.52
		Total	**10.12**
5	48	IV-A	1.64
		V-A	1.56
		VI-A	1.13
		VII-A	1.28
		Total	**5.62**

4.0 CULVERT CAPACITY ANALYSIS

One of the goals of this project is to minimize storm water ponding alongside the roadway by placing culverts at appropriate locations and installing culverts with the correct process for arctic conditions.

To determine the culvert locations, Bristol used the information computed during the hydrological analysis of the watershed to determine how the proposed road corridor would affect surface flow. The analysis revealed that WAR will act as a dam, preventing the surface water from continuing its natural drainage conveyance. In order to manage the surface water interaction with the road corridor, Bristol modeled the roadway side-slopes and culverts to convey the water adjacent to and below the road, respectively.

4.1 CULVERTS

New culverts, modeled on the Manning Equation, will be placed along the alignments at points where they will function most efficiently. The Manning Equation and the parameters used in the modeling are shown here:

$Q = (1.49/n) * A * (R)^{2/3} * (S)^{1/2}$

Q = flow rate, cubic feet per second

n = Manning coefficient, dimensionless

A = area, square feet

R = hydraulic radius, feet

S = slope, percent

- Pipe Size
  - Varies: 24, 36 or 48 inches in diameter.
- Pipe Slope
  - Varies: Used the maximum slope attainable for any given pipe.
- Manning Coefficient
  - A value of 0.025 (corrugated metal pipe) was used in all cases.

The flow capacity for each culvert size was determined based on the Manning Equation and the pipe's diameter, material, flow depth, and slope. The maximum flow capacities at a slope of 1.0% of 24-inch, 36-inch, and 48-inch diameter culverts are shown in Table B.

Table 8 Culvert Flow Capacities

Culvert Diameter (inches)	Maximum Flow Rate (ft^3/sec)
24	11.5
36	34.0
48	73.2

To size the new culverts, Bristol analyzed the project drainage basins assuming the worst-case scenario of a spring thaw when all ground is still frozen and functioning like a smooth impermeable surface. A runoff coefficient value of 0.95 is appropriate for this assumption. Table 9 presents the post-construction flows during such a spring thaw at each culvert within the project area.

Table 9 Post-construction (Spring Thaw) Flow Rate for Design Storm

Culvert No.	Size (in)	Contributing Drainage Basin	Post-construction Runoff Coefficient (C)	Area (SF)	Area (Acres)	Rainfall Intensity	Post-construction Flow Rate (ft^3/sec)
1	36	II-A	0.95	828,711	19.02	0.062	1.12
						Total	**1.12**
2	24	I-A	0.95	69,862	1.60	0.062	0.09
		II-A	0.95	828,711	19.02	0.062	1.12
						Total	**1.22**
3	24	I-B	0.95	298,668	6.86	0.062	0.40
						Total	**0.40**
4	48	III-A	0.95	94,908	2.18	0.062	0.13
						Total	**0.13**
5	48	IV-A	0.95	284,695	6.54	0.062	0.38
		V-A	0.95	724,469	16.63	0.062	0.98
		VI-A	0.95	390,024	8.95	0.062	0.53
		VII-A	0.95	880,209	20.21	0.062	1.19
						Total	**3.08**

Flow rates shown in Table 8 indicate that 18-inch diameter culverts will be adequate for all installations. The Alaska Department of Transportation and Public Facilities (ADOT&PF) recommends that culverts be oversized to allow for natural buildup of ice and debris. Culverts crossing roadways should have a minimum diameter of 24 inches. Culvert 5 is oversized for flood relief near the proposed bridge.

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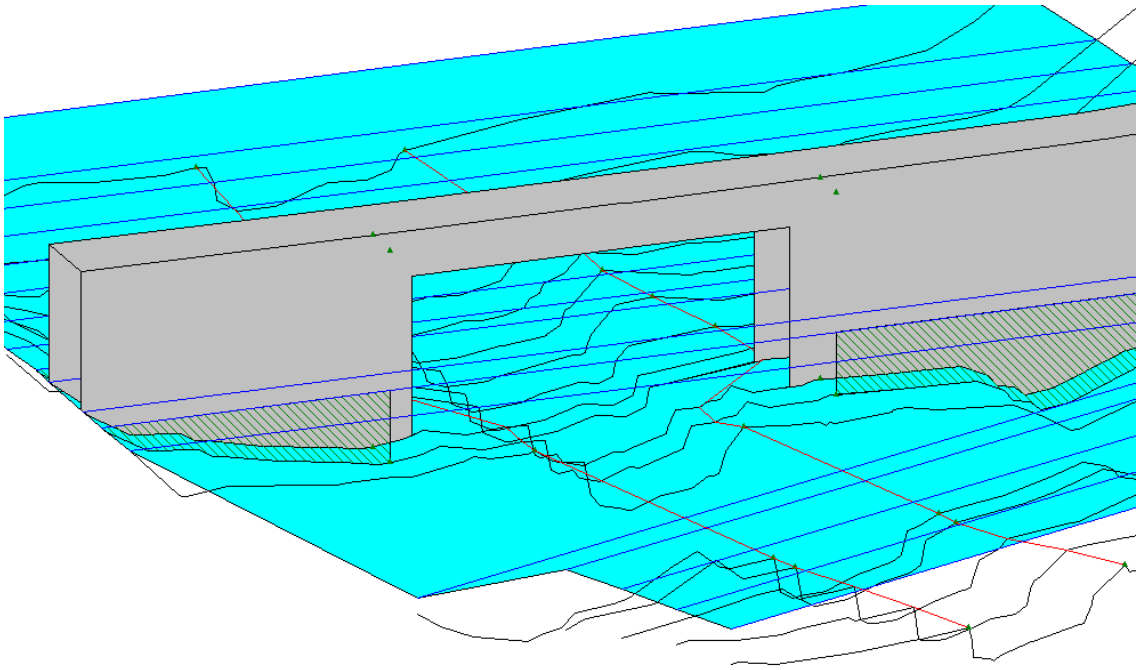
5.0 BRIDGE HYDRAULIC MODELING

Included in the design of WAR is a 100-foot single span bridge that crosses Smith Creek. Smith Creek is a tributary of the Inmachuk River and has a drainage area of approximately 22 square miles.

Figure 7 100 Year Flood 3D Perspective



5.1 HYDROLOGY AND DESIGN DISCHARGES

A watershed hydrology software program developed by the U.S. Department of Agriculture and the Natural Resources Conservation Service (NRCS) was used to perform peak discharge analysis for the drainage basin. The analysis was performed with WinTR-55 software version 1.00.09. WinTr-55 is designed for small watersheds less than 25 square miles.

Table 10 below summarizes the peak discharges that were used for the project analysis. Hydraulic methodologies and assumptions that were used to develop the respective discharges are documented in Appendix B.

Table 10 Estimated Peak Stream Flows (22 mi^2.)

Return Period (Years)	Annual Exceedance Probability	Peak Discharge (ft^3/sec)
2	50%	222
5	20%	497
10	10%	665
25	4%	850
50	2%	1264
100	1%	1717

5.2 CREEK AND BRIDGE MODELING PARAMETERS

To simulate creek flows in the area of the proposed bridge, HEC RAS version 5.0 was used to model water elevations for peak discharges shown in Table 9 along with normal flow conditions.

5.2.1 CREEK GEOMETRY

Geometry data used to build cross-sections were based on a field survey conducted by SurvBase LLC in September of 2013. Existing creek surface data from the field survey was exported from AutoCAD Civil 3D 2014 to HEC-RAS, creating an accurate model of the creek geometry.

5.2.2 MANNING N-VALUES

Table 11 displays Manning N-Values for Smith Creek, n-values were chosen for the model in accordance to the WSDOT Hydraulic Manual (WSDOT, 2007).

Table 11 Smith Creek N-Values

Location	Surface Type	Description	N Value
Creek Bed	Natural Stream	Some Grass and weeds, little or no brush	0.03
Left Overbank	Flood Plain (Adjacent to Natural Streams)	High Grass	0.05
Right Overbank	Flood Plain (Adjacent to Natural Streams)	High Grass	0.05

5.2.3 Cross Section Locations

According to the HEC-RAS Hydraulic Reference Manual (USACE, 2016) placement of cross sections relative to the location of the bridge is crucial for accurate prediction of energy losses through the bridge. Cross-section location depends on the evaluation of four parameters: the expansion reach length, the contraction reach length, the expansion coefficient, and the contraction coefficient. Calculations for these parameters can be found in Appendix C.

5.2.4 Boundary Conditions

Boundary conditions are necessary to establish the starting water surface at the ends of the river or creek system. Smith creek possesses a subcritical flow regime therefore boundary conditions are only needed at the downstream end of the river system. A known water surface elevation of 3.5' was used from survey data under normal flow conditions while a normal depth boundary condition with a creek bed slope of .06% was used for 5,10, and 100 year discharges as presented in table 10.

5.2.5 Hydraulic Computations

HEC-RAS bridge modeling allows several different methods to analyze flow without changing the geometry based on high flow and low flow. Initial results of the model suggested Class A low flow throughout the bridge, therefore the standard step Energy Equation was used for model computations.

5.2.6 Results

Table 12 displays the tabular results from the stream model at the proposed bridge. Results indicate that the highest flows expected at the bridge will reach a water surface elevation of 8.1 feet at the 100 year flood level. The low chord elevation on the proposed bridge is set at an elevation of 13.1 feet which will provide a clearance of 5.0 feet from the 100 year flood level. Figure 8 displays a graphical cross section at the proposed bridge site with water levels

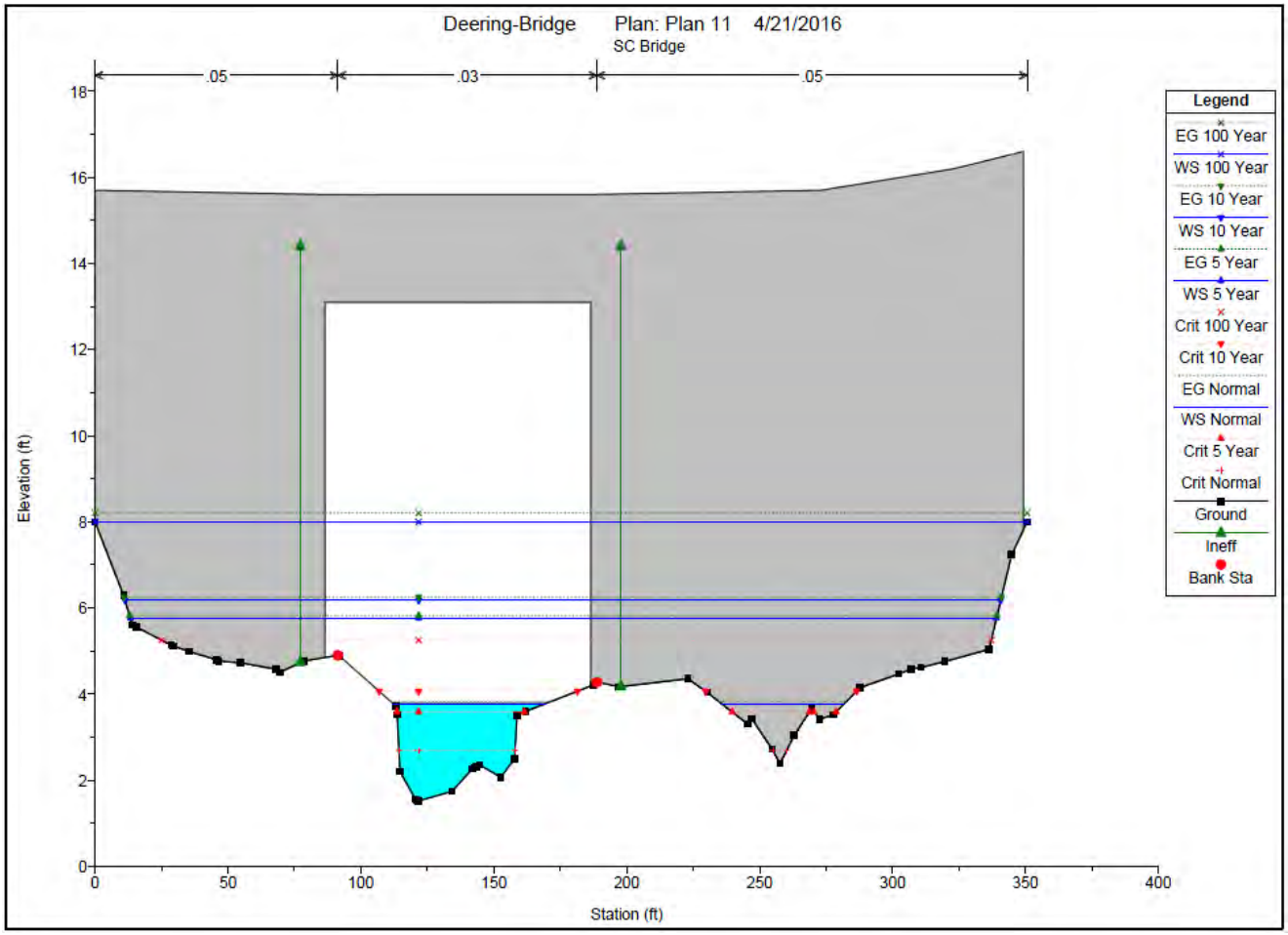
at normal, 5 year, 10 year, and 100 year flood conditions. Additional cross sections and figures can be found in Appendix C.

Table 12 Stream Modeling Results at Proposed Bridge

Profile	E.G. Elev. (ft.)	W.S. Elev. (ft.)	Vel. Head (ft.)	Friction loss (ft.)	C & E Loss (ft.)	Q Left (cfs)	Q Channel (cfs)	Q right (cfs)	Top Width (ft.)
Normal	3.79	3.7	0.09	0.02	0	0	155	0	76.09
5 Yr.	5.79	5.71	0.08	0.01	0.02	52.69	403.91	40.4	301.87
10 Yr.	6.21	6.11	0.1	0.01	0.03	80.78	519.96	64.26	312.72
100 Yr.	8.11	7.88	0.23	0.01	0.09	276.64	1204.84	235.52	347.64

E.G. = Energy Grade
W.S. = Water Surface
Vel. = Velocity
C & E = Contraction and Expansion
Q = Flow
cfs = Cubic feet per second

Figure 8 Smith Creek Bridge Cross-section



6.0 CONCLUSIONS AND RECOMMENDATIONS

The proposed road will act as a dam preventing surface water from continuing its natural drainage conveyances. According to the analysis, using a 10-year 24-hour design storm, 24-inch culverts will be adequate at all roadway crossings. However, Bristol has oversized culverts in this design to account for the natural buildup of ice and debris. Bridge and stream models discussed in this report indicate the proposed bridge will have sufficient clearance from water levels expected for 5, 10, and 100 year flood events. The design of culverts for the West Airport Road Project was based off the findings of this analysis.

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7.0 REFERENCES

Alaska Department of Commerce, Community, and Economic Development. (2014). *Community: Deering*. Commerce.alaska.gov. Retrieved from http://commerce.alaska.gov/cra/DCRAExternal/community/Details/a4fffa30-0aa6-4d10-8399-d86e555a9182

Alaska Department of Environmental Conservation. (2011). *Alaska Storm Water Guide*.

Lindeburg, Michael R., PE (2013). *Civil Engineering Reference Manual* (13th Edition). Belmont, CA: Professional Publications.

National Oceanic and Atmospheric Administration. (2014). *Hydrometeorological Design Studies Center, Precipitation Frequency Data Server*. National Weather Service. Retrieved from: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_maps.html

US Army Corp of Engineers Institute for Water Resources (2016) HEC-RAS River Analysis System Hydraulic Reference Manual Version 5.0. Davis, CA.

Washington Department of Transportation. (2007). *Hydraulics Manual*.

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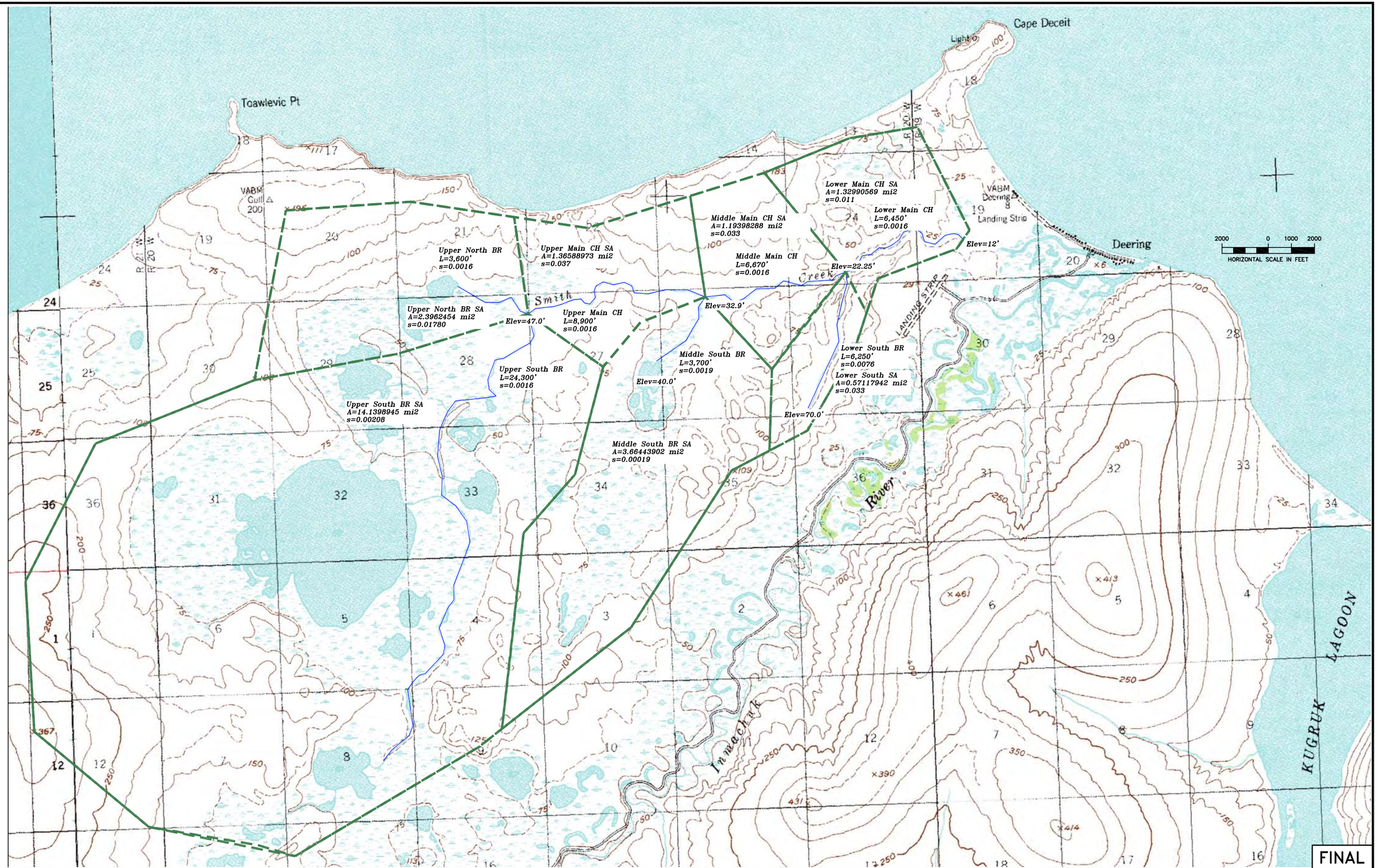
APPENDIX A

Win TR-55 Input and Output Parameters



FINAL

REVISIONS				REVISIONS			
NO.	DATE	BY	DESCRIPTION	NO.	DATE	BY	DESCRIPTION

Project No. 32140053

Bristol
ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713

NATIVE VILLAGE OF DEERING
P.O. BOX 30689
DEERING, ALASKA 99736
Phone (907) 363-2138 Fax (907) 363-2195

WEST AIRPORT ROAD PROJECT
DEERING, ALASKA

WIN TR-55 MODEL
SUB-BASIN MAPPING

SCALE: SHOWN | DESIGNED: IPP | CHECKED: IPP | DRAWN: IPP | DATE: MAR 2014

SHEET NO.

FIG 1

SHEET 1 OF 1

WinTR-55 Current Data Description

--- Identification Data ---

User: Isaac P
Project: Deering
SubTitle: Smith Creek
State: Alaska
County: Nome (C)
Filename: K:\Jobs\32140053 West Airport Rd\50 Design\Hydrology Report\WinTR-55\SmithCreek_18April2016.w55

Date: 4/19/2016
Units: English
Areal Units: Square Miles

--- Sub-Area Data ---

Name	Description	Reach	Area(mi²)	RCN	Tc
UPR S BR S		UPR S BR	14.14	77	6.401
UPR N BR S		UPR N BR	2.4	77	1.273
MDL S BR S		MDL S BR	3.66	77	10
UPR MAIN C		UPR MAIN C	1.37	77	.599
MDL MAIN C		MDL MAIN C	1.19	77	.715
LWR S BR S		LWR S BR	0.57	77	.286
LWR MAIN C		LWR MAIN C	1.33	77	.552

Total area: 24.66 (mi²)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	-Yr (in)
1.5	2.0	2.25	2.5	3.0	3.5	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type I
Dimensionless Unit Hydrograph: <standard>

Isaac P

Deering
Smith Creek
Nome (C) County, Alaska

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	-Yr (in)
1.5	2.0	2.25	2.5	3.0	3.5	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type I
Dimensionless Unit Hydrograph: <standard>

Isaac P Deering

Smith Creek

Nome (C) County, Alaska

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (mi²)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
UPR S BR S	14.14	6.401	77	UPR S BR	
UPR N BR S	2.40	1.273	77	UPR N BR	
MDL S BR S	3.66	10.000	77	MDL S BR	
UPR MAIN C	1.37	0.599	77	UPR MAIN C	
MDL MAIN C	1.19	0.715	77	MDL MAIN C	
LWR S BR S	.57	0.286	77	LWR S BR	
LWR MAIN C	1.33	0.552	77	LWR MAIN C	

Total Area: 24.66 (mi²)

Isaac P Deering

Smith Creek

Nome (C) County, Alaska

Reach Summary Table

Reach Identifier	Receiving Reach Identifier	Reach Length (ft)	Routing Method
UPR N BR	UPR MAIN C	3600	CHANNEL
UPR S BR	UPR MAIN C	24300	CHANNEL
UPR MAIN C	MDL MAIN C	8900	CHANNEL
MDL S BR	MDL MAIN C	3700	CHANNEL
MDL MAIN C	LWR MAIN C	6670	CHANNEL
LWR S BR	LWR MAIN C	6250	CHANNEL
LWR MAIN C	Outlet	6450	CHANNEL

Isaac P

Deering
Smith Creek
Nome (C) County, Alaska

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
UPR S BR S							
SHEET	100	0.0500	0.240				0.241
SHALLOW	16000	0.0020	0.050				6.160
					Time of Concentration		6.401
UPR N BR S							
SHEET	100	0.0500	0.240				0.241
SHALLOW	8000	0.0178	0.050				1.032
					Time of Concentration		1.273
MDL S BR S							
SHEET	100	0.0500	0.240				0.241
SHALLOW	40001	0.0002	0.050				48.697
					Time of Concentration		10
UPR MAIN C							
SHEET	100	0.0500	0.240				0.241
SHALLOW	4000	0.0370	0.050				0.358
					Time of Concentration		.599
MDL MAIN C							
SHEET	100	0.0500	0.240				0.241
SHALLOW	5000	0.0330	0.050				0.474
					Time of Concentration		.715
LWR S BR S							
SHEET	100	0.5000	0.240				0.096
SHALLOW	2000	0.0330	0.050				0.190
					Time of Concentration		.286
LWR MAIN C							
SHEET	100	0.0500	0.240				0.241
SHALLOW	6000	0.1100	0.050				0.311
					Time of Concentration		.552

Isaac P

Deering
Smith Creek
Nome (C) County, Alaska

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (mi²)	Curve Number
UPR S BR	SBrush - brush, weed, grass mix	(fair)	D	14.14	77
	Total Area / Weighted Curve Number			14.14	77
UPR N BR	SBrush - brush, weed, grass mix	(fair)	D	2.4	77
	Total Area / Weighted Curve Number			2.4	77
MDL S BR	SBrush - brush, weed, grass mix	(fair)	D	3.66	77
	Total Area / Weighted Curve Number			3.66	77
UPR MAIN	CBrush - brush, weed, grass mix	(fair)	D	1.37	77
	Total Area / Weighted Curve Number			1.37	77
MDL MAIN	CBrush - brush, weed, grass mix	(fair)	D	1.19	77
	Total Area / Weighted Curve Number			1.19	77
LWR S BR	SBrush - brush, weed, grass mix	(fair)	D	.57	77
	Total Area / Weighted Curve Number			.57	77
LWR MAIN	CBrush - brush, weed, grass mix	(fair)	D	1.33	77
	Total Area / Weighted Curve Number			1.33	77

Reach Channel Rating Details

Reach Identifier	Reach Length (ft)	Reach Manning's n	Friction Slope (ft/ft)	Bottom Width (ft)	Side Slope
UPR N BR	3600	0.05	0.0016	50	20 :1
UPR S BR	24300	0.05	0.002	50	20 :1
UPR MAIN C	8900	0.04	0.0016	30	10 :1
MDL S BR	3700	0.05	0.0019	50	20 :1
MDL MAIN C	6670	0.04	0.0016	30	10 :1
LWR S BR	6250	0.05	0.0076	20	10 :1
LWR MAIN C	6450	0.04	0.0016	30	10 :1

Reach Identifier	Stage (ft)	Flow (cfs)	End Area (sq ft)	Top Width (ft)	Friction Slope (ft/ft)
UPR N BR	0.0	0.000	0	50	0.0016
	0.5	20.268	30	70	
	1.0	70.353	70	90	
	2.0	265.692	180	130	
	5.0	1853.368	750	250	
	10.0	9315.635	2500	450	
	20.0	51549.780	9000	850	
UPR S BR	0.0	0.000	0	50	0.002
	0.5	22.660	30	70	
	1.0	78.657	70	90	
	2.0	297.053	180	130	
	5.0	2072.129	750	250	
	10.0	10415.197	2500	450	
	20.0	57634.406	9000	850	
UPR MAIN C	0.0	0.000	0	30	0.0016
	0.5	14.974	17.5	40	
	1.0	51.156	40	50	
	2.0	188.132	100	70	
	5.0	1254.242	400	130	
	10.0	6112.040	1300	230	
	20.0	33084.865	4600	430	
MDL S BR	0.0	0.000	0	50	0.0019
	0.5	22.086	30	70	
	1.0	76.665	70	90	
	2.0	289.531	180	130	
	5.0	2019.661	750	250	
	10.0	10151.478	2500	450	
	20.0	56175.071	9000	850	
MDL MAIN C	0.0	0.000	0	30	0.0016
	0.5	14.974	17.5	40	
	1.0	51.156	40	50	
	2.0	188.132	100	70	
	5.0	1254.242	400	130	
	10.0	6112.040	1300	230	
	20.0	33084.865	4600	430	
LWR S BR	0.0	0.000	0	20	0.0076
	0.5	18.047	12.5	30	
	1.0	64.057	30	40	
	2.0	250.540	80	60	
	5.0	1846.066	350	120	

Reach Channel Rating Details (continued)

Reach Identifier	Reach Length (ft)	Reach Manning's n	Friction Slope (ft/ft)	Bottom Width (ft)	Side Slope
	10.0	9605.045	1200	220	
	20.0	54409.138	4400	420	
LWR MAIN C	0.0	0.000	0	30	0.0016
	0.5	14.974	17.5	40	
	1.0	51.156	40	50	
	2.0	188.132	100	70	
	5.0	1254.242	400	130	
	10.0	6112.040	1300	230	
	20.0	33084.865	4600	430	

APPENDIX B

HEC-RAS Hydraulic Calculations

Bristol
ENGINEERING SERVICES
CORPORATION

Job No. 32140053

Project: WEST AIRPORT RD BRIDGE	Computed: RWB	Date: 4/22/16
Subject: HEC-RAS MODEL	Checked:	Date:
Task: ENERGY EXPANSION + CONTRACTION CALC'S		Sheet ____ of ____

KNOWN VALUES

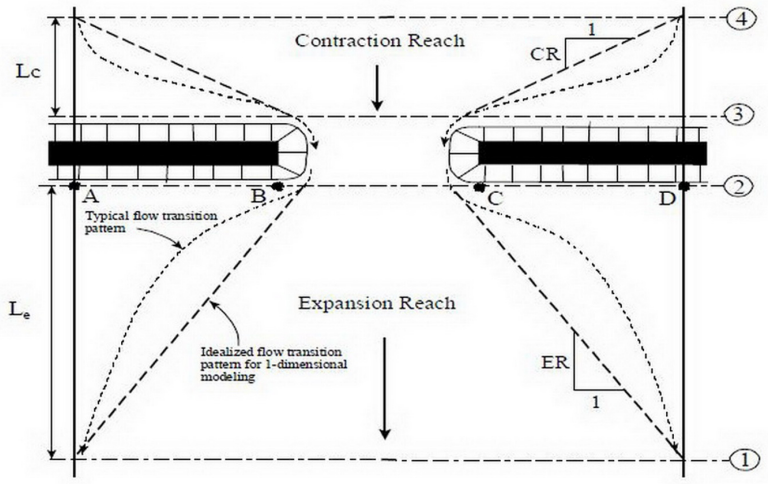
BRIDGE OPENING (b) = 90 FT

STREAM BED SLOPE(S) = .06 %

FLOOD PLAIN WIDTH (B) = 350 FT

Channel 'n' Value (n_c) = .03

Overbank 'n' Value (n_{ob}) = .05



CALCULATIONS

$b/B = 90'/350' = 0.257 \approx 0.26$

$n_{ob}/n_c = .05/.03 = 1.67 \approx 2$

Average OBSTRUCTION Length (L_{OBS})

$L_{OBS} = (B-b) \div 2 = (350-90) \div 2 = 130'$

Expansion Ratio (ER) => SEE TABLE B-1, PAGE B-7 of USACE HYDRAULIC REFERENCE MANUAL

ER = 1.4 (LOW DISCHARGE)

EXPANSION REACH (L_e)

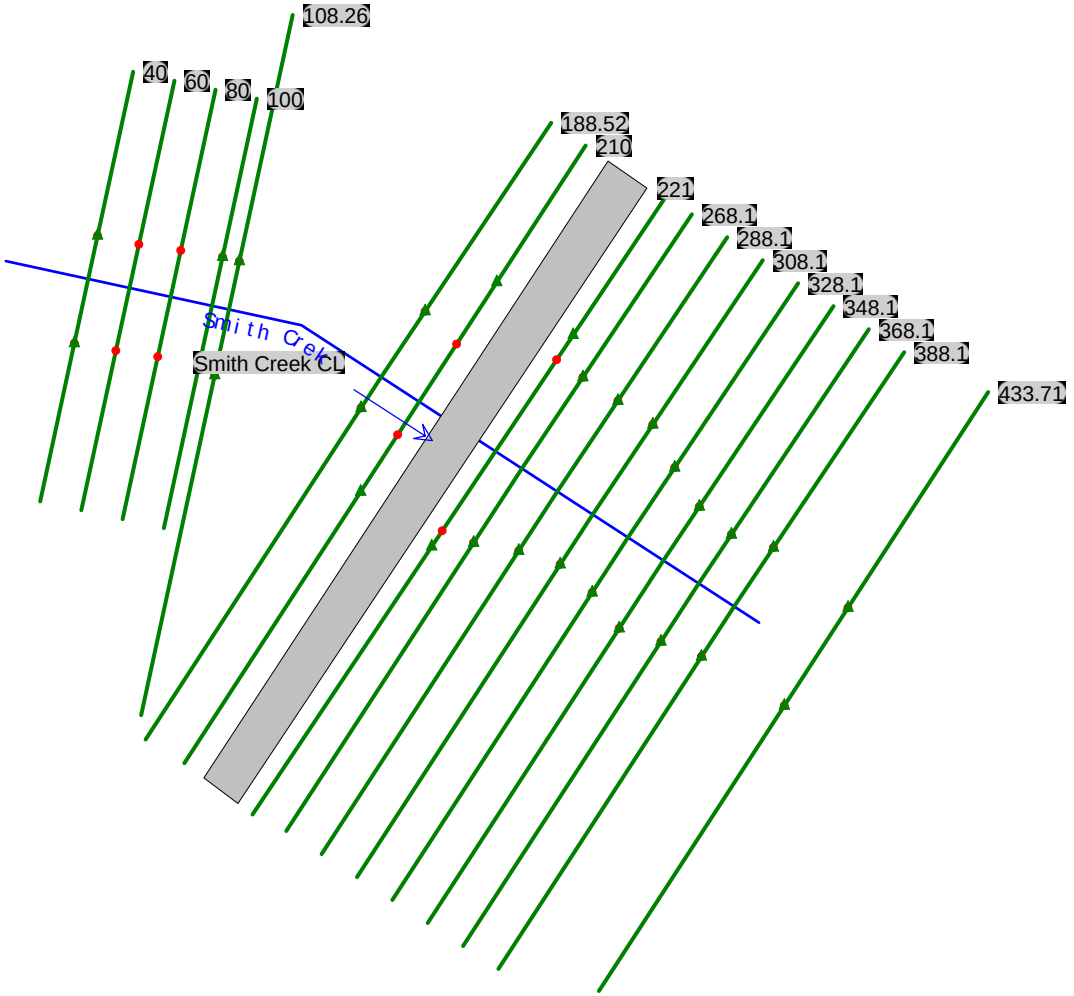
$L_e = (ER) \times (L_{OBS}) = 1.4 \times 130 = 182$ FT

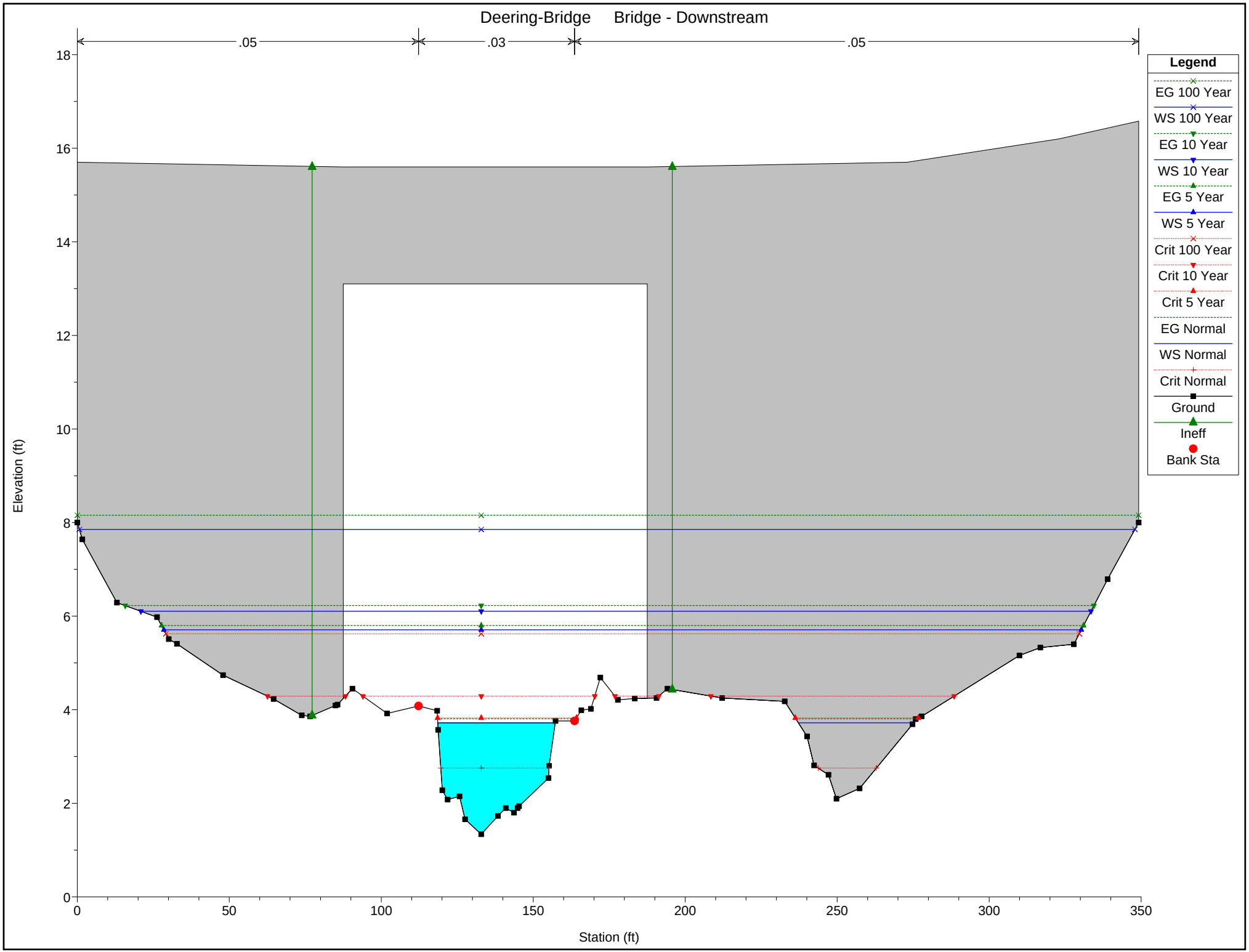
CONTRACTION RATIO (CR) => SEE TABLE B-2, PAGE B-9

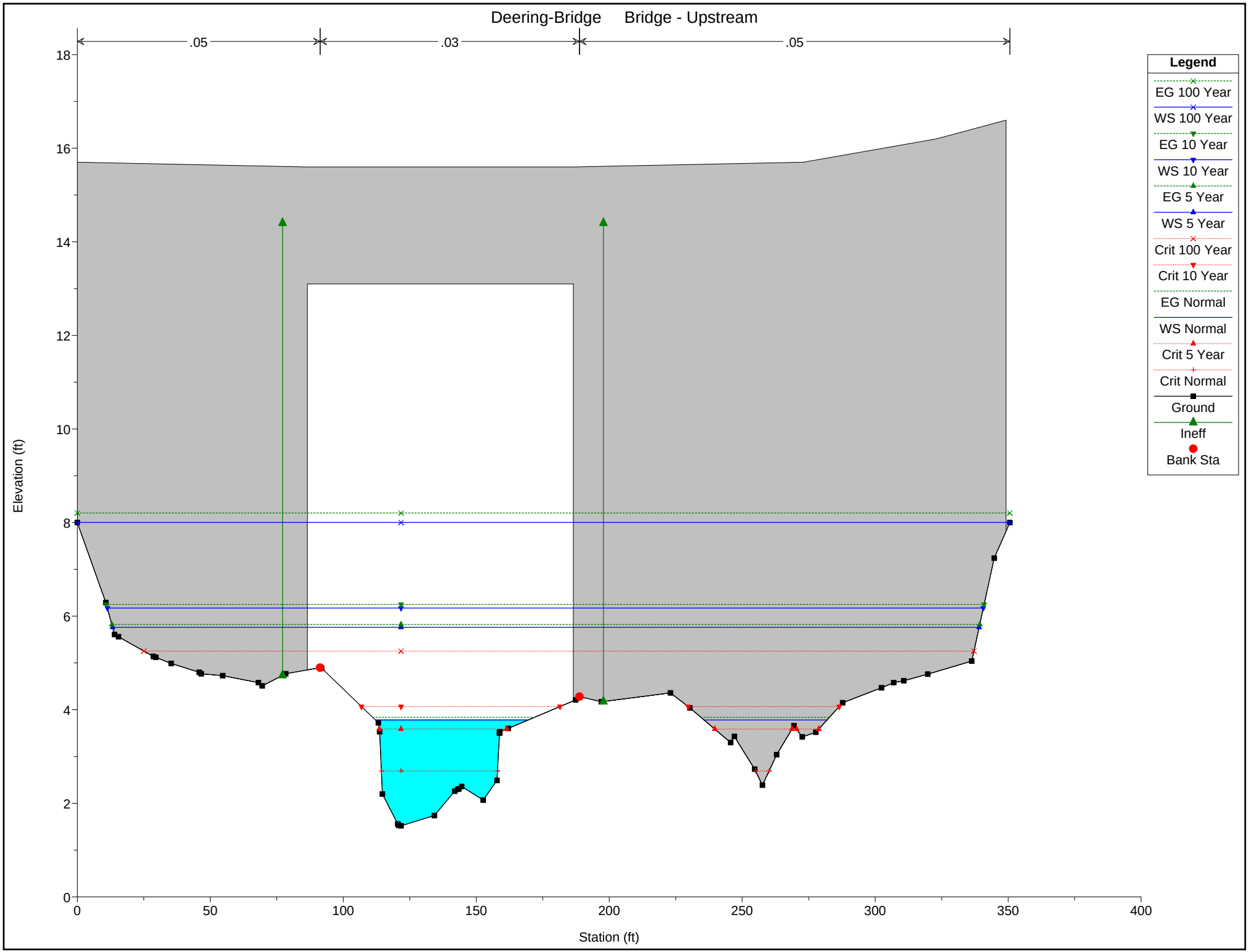
CR = 0.8

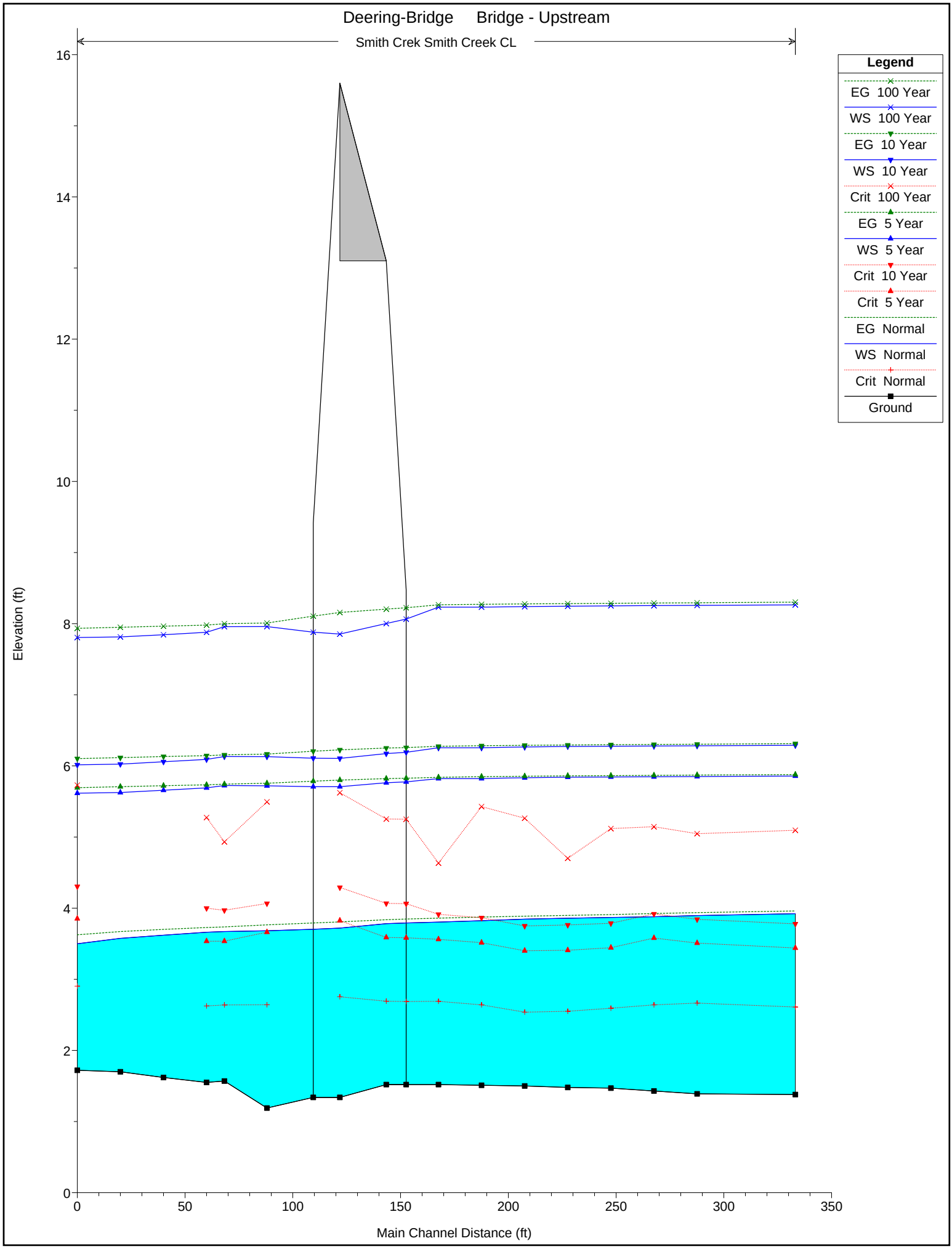
L_c = CONTRACTION REACH

$L_c = CR \times L_{OBS} = 0.8 \times 130' = 104$ FT


108.26
40
60
80
100
188.52
210
221
268.1
288.1
308.1
328.1
348.1
368.1
388.1
433.71
Smith Creek
Smith Creek CL


Deering-Bridge Bridge - Downstream
.05
.03
.05
Legend
EG 100 Year
WS 100 Year
EG 10 Year
WS 10 Year
EG 5 Year
WS 5 Year
Crit 100 Year
Crit 10 Year
Crit 5 Year
EG Normal
WS Normal
Crit Normal
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
0
2
4
6
8
10
12
14
16
18
0
50
100
150
200
250
300
350


Deering-Bridge Bridge - Upstream
.05
.03
.05
Legend
EG 100 Year
WS 100 Year
EG 10 Year
WS 10 Year
EG 5 Year
WS 5 Year
Crit 100 Year
Crit 10 Year
EG Normal
WS Normal
Crit 5 Year
Crit Normal
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
0
2
4
6
8
10
12
14
16
18
0
50
100
150
200
250
300
350
400

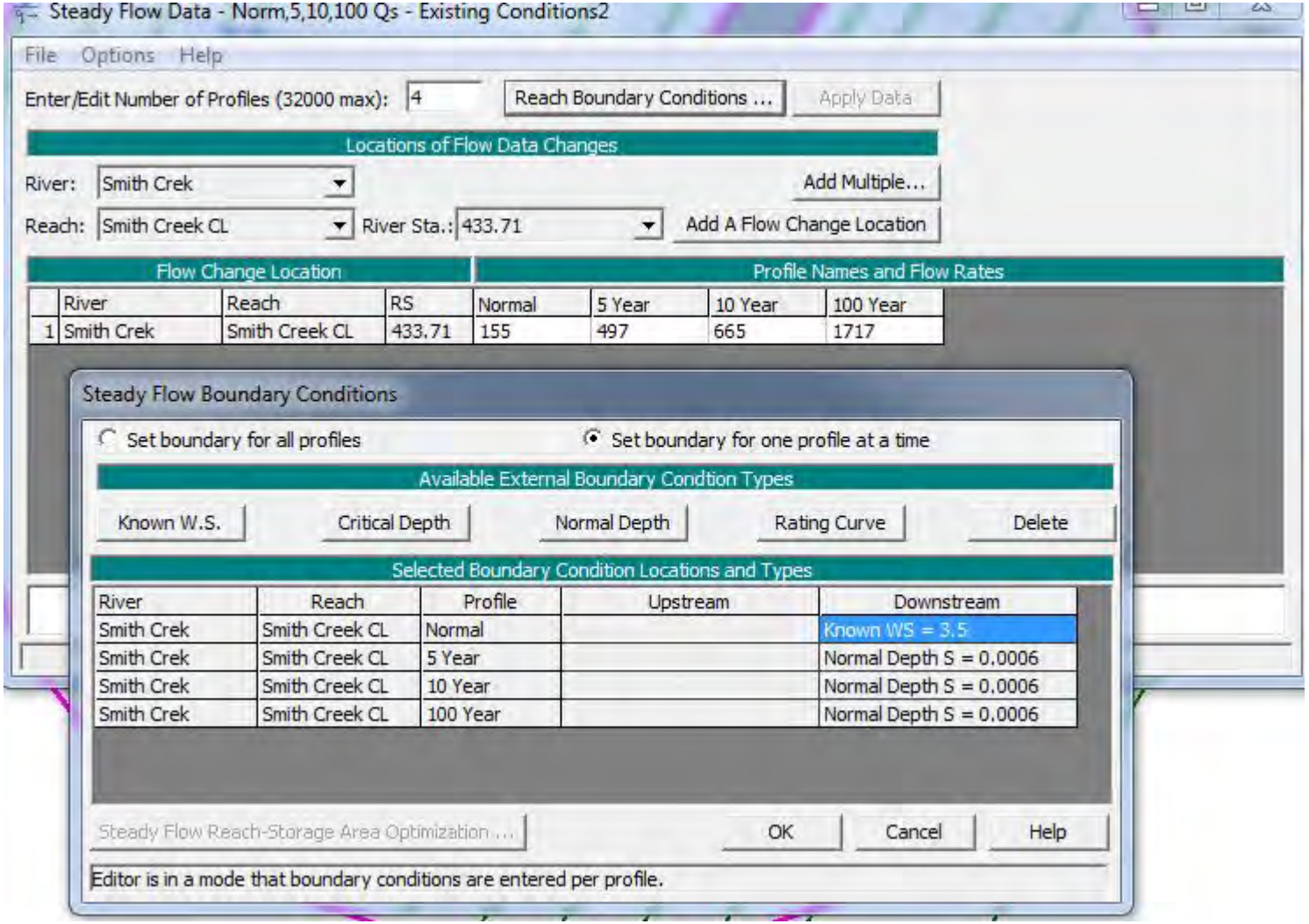

Deering-Bridge Bridge - Upstream
Smith Crek Smith Creek CL
Legend
EG 100 Year
WS 100 Year
EG 10 Year
WS 10 Year
Crit 100 Year
EG 5 Year
WS 5 Year
Crit 10 Year
Crit 5 Year
EG Normal
WS Normal
Crit Normal
Ground
Elevation (ft)
Main Channel Distance (ft)
0
2
4
6
8
10
12
14
16
0
50
100
150
200
250
300
350

HEC-RAS Plan: Plan 11 River: Smith Crek Reach: Smith Creek CL

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Smith Creek CL	433.71	Normal	155.00	1.38	3.92	2.61	3.96	0.000453	1.58	100.69	116.24	0.20
Smith Creek CL	433.71	5 Year	497.00	1.38	5.86	3.44	5.88	0.000152	1.44	603.06	309.01	0.13
Smith Creek CL	433.71	10 Year	665.00	1.38	6.29	3.78	6.31	0.000159	1.59	737.99	315.78	0.14
Smith Creek CL	433.71	100 Year	1717.00	1.38	8.26	5.10	8.30	0.000175	2.16	1387.50	338.64	0.15
Smith Creek CL	388.1	Normal	155.00	1.39	3.90	2.67	3.94	0.000550	1.65	94.85	134.18	0.22
Smith Creek CL	388.1	5 Year	497.00	1.39	5.85	3.51	5.87	0.000154	1.39	606.49	312.09	0.13
Smith Creek CL	388.1	10 Year	665.00	1.39	6.28	3.84	6.31	0.000159	1.53	742.59	318.39	0.14
Smith Creek CL	388.1	100 Year	1717.00	1.39	8.26	5.05	8.29	0.000170	2.08	1392.12	336.75	0.15
Smith Creek CL	368.1	Normal	155.00	1.43	3.88	2.64	3.92	0.000666	1.71	90.59	122.18	0.24
Smith Creek CL	368.1	5 Year	497.00	1.43	5.85	3.58	5.87	0.000160	1.42	601.47	313.50	0.13
Smith Creek CL	368.1	10 Year	665.00	1.43	6.28	3.92	6.30	0.000165	1.55	738.40	320.79	0.14
Smith Creek CL	368.1	100 Year	1717.00	1.43	8.25	5.15	8.29	0.000173	2.09	1392.32	337.91	0.15
Smith Creek CL	348.1	Normal	155.00	1.47	3.87	2.59	3.91	0.000540	1.61	96.25	118.91	0.22
Smith Creek CL	348.1	5 Year	497.00	1.47	5.84	3.44	5.86	0.000150	1.34	622.00	325.39	0.13
Smith Creek CL	348.1	10 Year	665.00	1.47	6.28	3.79	6.30	0.000152	1.46	763.79	331.28	0.13
Smith Creek CL	348.1	100 Year	1717.00	1.47	8.25	5.12	8.29	0.000159	1.98	1432.43	344.35	0.15
Smith Creek CL	328.1	Normal	155.00	1.48	3.86	2.55	3.90	0.000521	1.61	96.36	100.36	0.22
Smith Creek CL	328.1	5 Year	497.00	1.48	5.84	3.41	5.86	0.000146	1.30	622.98	315.32	0.13
Smith Creek CL	328.1	10 Year	665.00	1.48	6.27	3.76	6.29	0.000150	1.43	759.96	319.36	0.13
Smith Creek CL	328.1	100 Year	1717.00	1.48	8.25	4.70	8.28	0.000165	2.00	1412.50	346.97	0.15
Smith Creek CL	308.1	Normal	155.00	1.50	3.85	2.54	3.89	0.000515	1.65	93.67	71.84	0.22
Smith Creek CL	308.1	5 Year	497.00	1.50	5.83	3.40	5.85	0.000208	1.43	548.17	314.72	0.15
Smith Creek CL	308.1	10 Year	665.00	1.50	6.26	3.75	6.29	0.000201	1.54	685.51	321.41	0.15
Smith Creek CL	308.1	100 Year	1717.00	1.50	8.24	5.27	8.28	0.000187	2.04	1351.23	349.62	0.16
Smith Creek CL	288.1	Normal	155.00	1.51	3.82	2.64	3.87	0.000644	1.80	86.04	50.90	0.24
Smith Creek CL	288.1	5 Year	497.00	1.51	5.82	3.51	5.85	0.000271	1.54	499.20	316.66	0.17
Smith Creek CL	288.1	10 Year	665.00	1.51	6.26	3.87	6.28	0.000247	1.63	637.75	322.53	0.16
Smith Creek CL	288.1	100 Year	1717.00	1.51	8.23	5.43	8.27	0.000205	2.07	1302.47	348.09	0.16
Smith Creek CL	268.1	Normal	155.00	1.52	3.80	2.69	3.86	0.000732	1.89	82.08	91.28	0.25
Smith Creek CL	268.1	5 Year	497.00	1.52	5.82	3.56	5.84	0.000203	1.32	570.14	336.79	0.14
Smith Creek CL	268.1	10 Year	665.00	1.52	6.25	3.91	6.28	0.000189	1.41	717.00	340.50	0.14
Smith Creek CL	268.1	100 Year	1717.00	1.52	8.23	4.63	8.27	0.000166	1.85	1402.08	350.00	0.15
Smith Creek CL	253.12	Normal	155.00	1.52	3.79	2.69	3.85	0.000928	1.88	82.49	104.76	0.28
Smith Creek CL	253.12	5 Year	497.00	1.52	5.78	3.58	5.83	0.000380	1.84	287.40	325.92	0.20
Smith Creek CL	253.12	10 Year	665.00	1.52	6.19	4.06	6.26	0.000411	2.11	337.60	329.51	0.21
Smith Creek CL	253.12	100 Year	1717.00	1.52	8.06	5.25	8.22	0.000531	3.29	563.57	350.63	0.26

HEC-RAS Plan: Plan 11 River: Smith Crek Reach: Smith Creek CL (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Smith Creek CL	221		Bridge									
Smith Creek CL	210	Normal	155.00	1.34	3.70		3.79	0.001191	2.38	65.13	76.09	0.32
Smith Creek CL	210	5 Year	497.00	1.34	5.71		5.79	0.000524	2.44	268.56	301.87	0.24
Smith Creek CL	210	10 Year	665.00	1.34	6.11		6.21	0.000589	2.79	315.87	312.72	0.26
Smith Creek CL	210	100 Year	1717.00	1.34	7.88		8.11	0.000839	4.35	525.98	347.64	0.33
Smith Creek CL	188.52	Normal	155.00	1.19	3.68	2.64	3.77	0.001053	2.33	66.56	65.80	0.31
Smith Creek CL	188.52	5 Year	497.00	1.19	5.72	3.66	5.76	0.000332	1.85	471.18	316.14	0.19
Smith Creek CL	188.52	10 Year	665.00	1.19	6.13	4.07	6.17	0.000313	1.96	601.63	321.36	0.19
Smith Creek CL	188.52	100 Year	1717.00	1.19	7.96	5.49	8.01	0.000284	2.48	1210.58	344.66	0.19
Smith Creek CL	108.26	Normal	155.00	1.57	3.67	2.64	3.74	0.000961	2.05	75.55	115.54	0.29
Smith Creek CL	108.26	5 Year	497.00	1.57	5.72	3.53	5.74	0.000169	1.43	595.59	302.54	0.14
Smith Creek CL	108.26	10 Year	665.00	1.57	6.13	3.97	6.16	0.000179	1.59	721.62	312.65	0.14
Smith Creek CL	108.26	100 Year	1717.00	1.57	7.96	4.93	8.00	0.000212	2.25	1319.66	339.16	0.17
Smith Creek CL	100	Normal	155.00	1.55	3.66	2.63	3.73	0.000933	2.08	74.69	62.67	0.29
Smith Creek CL	100	5 Year	497.00	1.55	5.69	3.54	5.73	0.000308	1.93	394.72	203.79	0.19
Smith Creek CL	100	10 Year	665.00	1.55	6.09	4.00	6.14	0.000336	2.18	477.72	208.35	0.20
Smith Creek CL	100	100 Year	1717.00	1.55	7.88	5.27	7.98	0.000427	3.17	850.14	208.35	0.24
Smith Creek CL	80	Normal	155.00	1.62	3.62		3.70	0.001234	2.30	67.30	43.29	0.33
Smith Creek CL	80	5 Year	497.00	1.62	5.66		5.72	0.000441	2.27	334.72	208.35	0.22
Smith Creek CL	80	10 Year	665.00	1.62	6.06		6.13	0.000458	2.50	418.22	208.35	0.23
Smith Creek CL	80	100 Year	1717.00	1.62	7.84		7.96	0.000522	3.47	790.23	208.35	0.26
Smith Creek CL	60	Normal	155.00	1.70	3.58		3.67	0.001540	2.49	62.25	41.97	0.36
Smith Creek CL	60	5 Year	497.00	1.70	5.63		5.71	0.000565	2.50	297.79	199.09	0.25
Smith Creek CL	60	10 Year	665.00	1.70	6.03		6.12	0.000580	2.74	379.28	208.35	0.26
Smith Creek CL	60	100 Year	1717.00	1.70	7.81		7.95	0.000597	3.65	752.06	208.35	0.28
Smith Creek CL	40	Normal	155.00	1.72	3.50	2.90	3.63	0.002318	2.84	54.56	40.97	0.43
Smith Creek CL	40	5 Year	497.00	1.72	5.62	3.85	5.69	0.000600	2.49	303.15	202.62	0.25
Smith Creek CL	40	10 Year	665.00	1.72	6.02	4.30	6.10	0.000601	2.71	385.61	208.35	0.26
Smith Creek CL	40	100 Year	1717.00	1.72	7.81	5.73	7.93	0.000601	3.59	758.48	208.35	0.28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River Reach Profile Upstream Downstream
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Steady Flow Reach-Storage Area Optimization ...
OK
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Appendix K: Bureau of Indian Affairs (BIA). 2017. Environmental Assessment. West Airport Road Project. Deering Alaska. Prepared by Bristol Engineering Services Corporation.

ENVIRONMENTAL ASSESSMENT

WEST AIRPORT ROAD PROJECT
DEERING, ALASKA

Prepared For:

Bureau of Indian Affairs
Alaska Region Office
3601 C Street, Suite 1100
Anchorage, Alaska 99501

Prepared By:

Bristol Engineering Services Corporation
111 W. 16th Avenue, Third Floor
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(907) 563-0013

May 2017

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ACRONYMS AND ABBREVIATIONS

°	Degrees
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ATV	all-terrain vehicle
BIA	U.S. Bureau of Indian Affairs
BOCA	Building Official and Code Administrators
Bristol	Bristol Engineering Services Corporation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CY	Cubic Yard
CZMA	Coastal Zone Management Act
DCCED	Department of Commerce, Community, and Economic Development
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FDD	Fish Distribution Database
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FIRM	Flood Insurance Rate Maps
IRR	Indian Reservation Roads
JD	Jurisdictional Determination
LF	Linear Feet
MLW	Mining, Land, and Water
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NPDES	National Pollution Discharge Elimination System
OHW	Ordinary High Water
OSHA	Occupational Safety and Health Administration
PL	Public Law
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way

SHPO	State Historic Preservation Officer
SWPPP	Storm Water Pollution Prevention Plan
U.S.C.	United States Code
U.S.C.A.	U.S. Code Annotated
USACE	US Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

EXECUTIVE SUMMARY

PROPOSED ACTION

The Native Village of Deering (NVD) has contracted Bristol Engineering Services Corporation (Bristol) to develop plans, complete environmental permitting and the NEPA process, for new road and bridge construction in Deering, Alaska. The proposed project will improve the road infrastructure and establish an emergency evacuation route for the Community (Figures 1 & 2). Funding for this project will be through the Bureau of Indian Affairs (BIA) Tribal Transportation Program (TTP).

The BIA, as the lead Federal agency, determines that this Environmental Assessment and the proposed action overall would be in compliance with National Environmental Policy Act (NEPA), as well as all other applicable federal laws and regulations, and that there would be no significant impacts to the human environment that would require development of an Environmental Impact Statement.

ENVIRONMENTAL CONSEQUENCES

The Preferred Alternative will consist of the construction of the new West Airport Road and new bridge, spanning Smith Creek. The proposed project road corridor will be approximately 1.0-mile long and have a total footprint of approximately 7.2 acres. The proposed road project will require the placement of fill into approximately 6.86 acres of USACE jurisdictional wetlands. The construction of the new road will permanently impact 6.78 acres of wetlands. Construction of the proposed bridge will require the creation of temporary construction laydown pads adjacent to Smith Creek (See Figures) which will temporarily impact 0.08 acres of wetlands Temporary construction impacts may include construction associated noise and dust emissions. Measures will be taken to minimize temporary construction impacts (see below) and due to the temporary nature of the impacts they are considered negligible.

The BIA proposes the following measures in order to minimize environmental consequences of the preferred alternative:

- Dust-control measures would be taken in order to minimize temporary dust emissions from road construction.
- Construction could be limited to waking hours to reduce potential unwelcome noise impacts.

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1.0 PURPOSE AND NEED FOR ACTION

1.1 SUMMARY

The Native Village of Deering (NVD) has contracted Bristol to develop plans and complete environmental permitting and the NEPA process, for new road and bridge construction in Deering, Alaska. The proposed project will consist of the construction of the new 1-mile West Airport Road along with a bridge that will span Smith Creek. The proposed project will improve the road infrastructure and establish an emergency evacuation route for the Community (Figures 1 & 2).

1.2 PURPOSE AND NEED FOR ACTION

The Community of Deering's existing road and bridge infrastructure is currently failing and unable to meet suitable emergency evacuation needs. Currently, the existing Deering Airport Road typically gets washed out during seasonal and tidal flooding events creating a serious safety hazard by blocking the only community egress to higher ground. The proposed new road will serve as the primary emergency evacuation route for Deering residents and will also provide more reliable road access to the airport.

Additionally, the existing bridge and primary access point to the community is deteriorating and may not support the crossing of heavy machinery. The proposed new bridge over Smith Creek will have the load-bearing capacity necessary to transport heavy equipment into and out of Deering year round to support infrastructure maintenance and construction needs (Figures 1 & 2).

1.3 VICINITY MAPS

Vicinity, Location, and Site maps can be found in the Figures section at the end of the report.

1.4 LOCATION

Deering is located on Kotzebue Sound at the mouth of the Inmachuk River, approximately 57 miles southwest of Kotzebue. The main village is built on a flat sand and gravel spit sandwiched between the Kotzebue Sound and Smith Creek, a tributary to the Inmanchuk River, that is approximately 300 feet wide and approximately half-mile long. It lies at approximately 66.07° north latitude and -162.71° west longitude (Sections 19 and 30, Township 008 North, Range 019 West, Kateel River Meridian). The area encompasses 5.1 sq. miles of land and 0.1 sq. miles of water. Deering is located within the Cape Nome Recording District (DCCED, 2015).

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2.0 ALTERNATIVES – INCLUDING THE PROPOSED ACTION

The requirements of the National Environmental Policy Act (NEPA), Section 102(2) (e) are to study, develop, and describe the appropriate alternatives to recommend courses of action in any proposal which may involve conflicts concerning alternative uses of available resources.

Three options represent the most reasonable range of alternatives:

- **Alternative 1: The Preferred Alternative**: The Preferred Alternative consists of constructing the new West Airport Road and a new bridge construction that will span Smith Creek in Deering, Alaska.

- **Alternative 2**: Suring up the existing Airport Road Bridge and constructing an engineered redesign of the Airport Road.

- **Alternative 3: No Action Alternative:** Under the No-Action Alternative, the proposed project will not be completed.

2.1 ALTERNATIVE 1: PREFERRED ALTERNATIVE

The Preferred Alternative will consist of developing and constructing a new road (Figure 2) that will serve as a reliable evacuation route for the village residents. The roads driving surface will be approximately 24-feet wide with 4:1 side slopes, by 1.0-mile long (See Figures 3-5). The proposed project will create reliable emergency evacuation infrastructure and will serve as the primary egress for emergency evacuation to higher ground from the village to the airport area during seasonal and tidal flooding events when the existing Deering Airport Road is typically washed out and in the event of a medical emergency. Additionally, the new route will ensure that the City will have a reliable new bridge with the load-bearing capabilities to support the transport of heavy machinery to support infrastructure maintenance and construction needs.

The bridge spanning Smith Creek will be a 100-foot single span pre-manufactured modular steel bridge stabilized with thermal helix piles and metal bin-wall abutments (See Figures 6 & 7). There will be 125-foot approaches on either side of the bridge. The bridge structure will allow a minimum of 10-feet of vertical clearance from ordinary high water (OHW) and 42.6-foot navigational opening. No in-stream piers of any kind are associated with the proposed design. The entire active water channel will be free of any fill material and the bridge abutments will be clear of the standing water.

The Preferred Alternative will require approximately 25,800 cubic yards (CY) of Subbase - Type B material to create the new road embankment, followed by approximately 2,300 CY of crushed aggregate surface course to create the driving surface. The proposed project will have a total footprint of 7.2 acres, of which 6.86 (6.78 permanent/.08 temporary) acres has been determined to be USACE jurisdictional wetlands.

Culverts will be appropriately placed along the proposed road corridor to ensure surface drainage patterns are maintained. No in-stream culverts are associated with this project.

The advantages and disadvantages of the preferred alternative are as follows:

Advantages of Alternative 1

- Will expand/enhance the overall Deering transportation infrastructure.
- The proposed road will establish a much needed reliable emergency evacuation route for the community.
- The new bridge crossing will allow year round access to the airport.
- The new bridge will allow for heavy machinery to access the village, which currently is not possible due to the current bridge not having the capacity to support such heavy loads.
- Though still in wetlands the new road is located out of the Inmachuk River floodplain.
- Smith Creek is a lower velocity water course than the Inmachuk River, and though still susceptible to flooding, it is likely that the flooding would be less intense than that associated with the Inmachuk River.

Disadvantages of Alternative 1

- Costs associated with developing/constructing the proposed road and bridge.
- The permanent loss of 6.78 acres of wetland associated with constructing the proposed road.

2.2 ALTERNATIVE 2: SURING UP THE EXISTING BRIDGE AND ROAD

This alternative would sure up the existing bridge to increase capacity to handle greater weight limits, including constructing river revetments to decrease the rivers ability to wash away the road.

Advantages of Alternative 2

- Potentially less wetland impact than those associated with new road construction impacts.
- No new bridge construction.

Disadvantages of Alternative 2

- High costs associated with engineering then constructing the reinforcing/stabilization of the Inmachuk River bank (high cost of importing large armor stone). The majority of the south side of Airport Road directly abuts the Inmachuk River.
- High costs for reinforcing/retro-fitting the existing bridge.

- This will not create an additional route to higher ground nor will it take the road out of the flood zone, as the existing Airport Road extends adjacent to the Inmachuk River for almost its entire length.
- This alternative will not offer the Deering residents an alternative emergency evacuation route during high water/storm events from either river flooding or wind driven tides or access to the airport in the event of a medical emergency.
- Aerial photography indicated that the majority of the road is also located within the braided river bed/flood plain of the Inmachuk River. Re-engineering the road to be high enough as to be out of the flood zone would be prohibitively expensive and would greatly impact higher values wetlands than the Preferred Alternative.

2.3 ALTERNATIVE 3: NO-ACTION

Considering the No-Action Alternative is required by NEPA. Under the No-Action Alternative the proposed corridor will stay in its current, undeveloped state. No action will be taken to expand the Deering transportation infrastructure, improve access to the airstrip, or create a much needed reliable emergency evacuation route for the community.

The advantages and disadvantages of Alternative 3 follow.

Advantages of Alternative 3 (Avoidance and Minimization)

- No costs associated with Alternative 3.
- No wetland impacts

Disadvantages of Alternative 3

- A reliable emergency evacuation route will not be established.
- The transportation infrastructure will not be expanded or improved and will remain as it currently exists.
- Currently, Airport Road is the only road in to and out of Deering and floods intermittently, trapping the residents in the village with no access to the airport or higher ground. Should a medical emergency arise requiring evacuation, with the current road configuration access to the airport is completely blocked for extended periods during the year.

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3.0 AFFECTED ENVIRONMENT

3.1 LAND RESOURCES

a) Topography: Deering is located within the Kotzebue Sound Lowlands ecological sub region of Alaska, which is characterized by flat, poorly drained coastal plains dominated by terraces, low hills, and active dune fields. This area is subject to many thaw lakes and sinks that are connected by a maze of waterways. Typically elevations in the area are less than 330 feet (USFS, 1995). The project corridor, and surrounding area, consists of level to minimally sloping terrain throughout the proposed alignment.

b) Soils: Soils tend to be wet and shallow to permafrost. Dominant soils are Histic Pergelic Cryaquepts and Pergelic Cryofibrists. Soils are formed from stratified silty or sandy alluvial deposits, as well as volcanic ash and loess (USFS, 1995)

c) Geologic Setting and Material Resources: The geologic setting for the bedrock underlying the Quaternary surficial deposits on which Deering sits is likely to be Paleozoic marble or metalimestone (Selkregg, 1976). Material resources for road construction have been identified as previously permitted alluvial deposits of gravel silt and sand located approximately 1-mile south of the Deering Airport.

3.2 WATER RESOURCES

Deering is located on Kotzebue Sound near the mouth of the Inmachuk River, 57 miles southwest of Kotzebue. Deering households obtain water via water delivery from the community water system which is sourced from area surface water (DCCED, 2015).

Water for construction activities, such as compaction and dust suppression, will be withdrawn from the Inmachuk River as needed for project completion. The Inmachuk River has been listed in the Alaska Department of Fish and Game (ADFG) – Fish Distribution Database (FDD) as an anadromous stream (#331-00-10750) showing the occurrence of spawning Chum salmon and Pink salmon, and the presence of Dolly Varden. Additionally, the proposed new West Airport Road Bridge will span Smith Creek, a tributary of the Inmachuk River; Smith Creek is not listed as an anadromous stream in the ADFG - FDD Database.

a. Surface Water

- Clean Water Act Section 401 Water Quality Certification – Part of the 404 consultation. The proposed project will impact USACE jurisdictional wetlands and waters of the U.S.; therefore, a Section 404/401 permit/certification will be required for the proposed project.
- Clean Water Act Section 402, Storm Water Pollution Protection (SWPPP) – The proposed project will require the completion of a SWPPP. The SWPPP will be completed and submitted by the yet to be determined project construction contractor.
- Clean Water Act Section 404 – The proposed project will be placing fill material into wetlands/waters of the United States, as determined by the U.S.

Army Corps of Engineers. Therefore the project will require the completion of a Section 404/401 Permit for the placement of fill into USACE jurisdictional wetlands.

- Rivers and Harbors Act Section 10 – The proposed bridge spanning Smith Creek will not require a permit from the U.S. Coast Guard because the creek is not large enough to be considered a navigable waterway. Only small skiffs can be and are currently used along this waterway during flood events and high water. However, the bridge height was designed with enough clearance to allow passage of a larger vessel.

b. Groundwater – Groundwater will not be affected by the preferred alternative.

3.3 AIR RESOURCES

According to Title 18, Alaska Administrative Code, Chapter 50.015, Village of Deering is not in a nonattainment area for air contaminants. Air quality is not monitored.

a. Quality – There are no long-term affects to air quality associated with the preferred alternative. There is the potential for short-term increases in dust; however, these affects will be minimized with the use of dust palliatives.

b. Visibility – There will be a short-term potential for impacts to visibility during construction due to increased dust; however, the affects will be minimized by applying water for dust suppression. Upon completion of the proposed project, calcium-chloride will be applied as a dust palliative to limit the effects to visibility due to dust.

c. Climate/Meteorology – Deering is located in the transitional climate zone, which is characterized by long, cold winters and cool summers, with average temperatures ranging from -18°F in January to 63°F in July. Annual snowfall averages 36 inches, with total precipitation of 9 inches. Kotzebue Sound is ice-free from early July through mid-October (DCCED, 2015).

3.4 BIOTIC RESOURCES

a. Description of Ecosystem and Biological Communities

Deering is located within the Kotzebue Sound Subregion and is classified as moist tundra. The moist tundra plant community is characterized by a mixture of grasses, sedges, forbs, and lichens. Tussocks, formed by cottongrass (*Eriophorum* spp.), are a dominate feature of this plant community (Selkregg, 1976).

Habitats in the Kotzebue Sound Subregion range from treeless coastal tundra to forests and alpine tundra. Some mammals prefer specific habitats; while others have a more generalist approach, occupying multiple habitats. Coastal moist tundra is the most commonly encountered habitat within the Deering area (Selkregg, 1976).

Large mammals common in the Kotzebue Sound Subregion include; among others, brown bears, polar bear, wolves, wolverine, and moose. Others mammals known to be in the Kotzebue Sound Subregion may include: Arctic fox, mink, short-tailed

weasel, tundra shrew, Greenland collared lemming, Arctic ground squirrel, brown lemming, Arctic hare, red-backed vole, tundra vole, Alaska vole and Arctic hare (Selkregg, 1976).

Kotzebue Sound is located along a migratory flyway which is used by numerous sea ducks for resting during the spring and fall migration and in some cases for overwintering. Birds found in the moist tundra in the Deering area include, but are not limited to: common loon, yellow-billed loon (USFWS candidate species), Arctic loon, whistling swan, Canada goose, white-fronted goose, pintail, American widgeon, pintail, rough-legged hawk, gyrfalcon, peregrine falcon, willow ptarmigan, golden plover, long-tailed jaeger, short-eared owl, snowy owl, barn swallow, bank swallow, raven, gray-cheeked thrush, white wagtail, hoary redpoll, savannah sparrow, Lapland longspur, and snow bunting (Selkregg, 1976).

Review of the Alaska Department of Fish & Game (ADF&G) Anadromous Fish Distribution Database (FDD) shows the project area occurs in proximity to both the Inmachuk River and will cross Smith Creek. The Inmachuk River has an Anadramous Waters Catalogue (AWC) Code 331-00-10750, and shows the presence of spawning chum salmon (*Oncorhynchus keta*), and pink salmon (*Oncorhynchus gorbuscha*) and the presence of Dolly Varden (*Salvelinus malma*). Smith Creek is not listed on the Anadromous Fish Database as an anadromous stream. Though it is likely that there are resident blackfish and sculpin it is unlikely that there are any anadromous fish spending any time there. A Fish Habitat permit may be required for construction of the bridge crossing Smith Creek if the construction goes below ordinary high water.

The project's anticipated water needs for the purpose of compaction and as a dust palliative during construction will require water withdrawal from the Inmachuk River. Water withdrawal will require an ADNR – Habitat Division and MLW – Water Resources Division Permit.

b. Wildlife:

1. Terrestrial –The proposed project is not anticipated to negatively impact wildlife.

   The Preferred Alternative is located in an area that has a low potential to be nesting habitat for Bald or Golden eagles. Prior to construction the contractor will perform a site survey to confirm that nesting eagles are not present.

   The proposed project is not anticipated to negatively impact migratory or nesting birds. To limit potential impacts to nesting birds, land clearing will not take place between May 20 and July 20.

   Deering is located within the limits of the Western Arctic caribou herd habitat range (ADFG, 2011).

   The proposed alignment on the north side of Smith Creek closest to the village had sign of Musk Ox usage (shed fur and scat), and at the time of the site visit a small herd was noted to be moving through the area following Smith Creek on the north side. Though the road will bisect this area, it will have 4H:1V side slopes that will not act as a barrier to modify their diurnal migration route. Additionally, the

design speed for this road is 25 miles per hour combined with the unlimited sight distances, there is minimal threat for negative outcome vehicle interactions.

2. Riparian/Aquatic – Smith Creek extends through the approximately midpoint of the proposed road corridor.
3. Threatened and Endangered Species – The USFWS Information, Planning, and Conservation (IPaC) system was accessed on December 4, 2014 to determine the presence of any threatened or endangered species, and the presence of any designated critical habitat that may occur within or near the boundaries of, or affected by, the proposed project as required under Section 7(c) of the Endangered Species Act. The IPaC reported that Steller's eider, spectacled eider, and polar bear may be present in proximity to the proposed project area. As a result of the IPaC report, an informal consultation with the USFWS was requested. The USFWS Consultation Letter (#07CAFB00-2015-SLI-0010) can be found in Appendix B. The letter includes Polar Bear Interaction Guidelines.

c. Vegetation:
   1. Terrestrial –Deering is located within the Kotzebue Sound Subregion and is classified as moist tundra. The moist tundra plant community is characterized by a mixture of grasses, sedges, forbs, and lichens. Tussocks, formed by cottongrass (*Eriophorum* spp.), are a dominate feature of this plant community (Selkregg, 1976).
   2. Riparian/Aquatic –Smith Creek bisects the midpoint of the proposed alignment. No in-stream work is associated with the proposed project.
   3. Threatened and Endangered Species – No Threatened or Endangered vegetation species are found in proximity to the proposed project corridor. (USFWS, 2014).
d. Agriculture: (livestock, crops, prime and unique farmland(s)) - No livestock, crops, or prime and unique farmland(s) are found within or near the Preferred Alternative.

3.5 CULTURAL RESOURCES

Deering was established in 1901 as a supply station for Interior gold mining near the historic Malemiut Eskimo village of "Inmachukmiut." The name Deering was probably taken from the 90-ton schooner "Abbey Deering" which was in nearby waters around 1900. The city was incorporated in 1970 (DCCED, 2014).

An archaeological survey and report of the proposed project area was conducted and prepared by Mr. Robert Meinhardt and Ms. Amy Ramirez of True North Sustainable Development Solutions (TNSDS). The report found that no historic properties would be affected by the proposed project and recommended a finding of "No Historic Properties Affected" be adopted. The report was submitted to BIA Archaeology, who will submit it to SHPO for their review/concurrence and can be found in Appendix E. The BIA and SHPO concurred with TNSDS's findings, and the BIA concurrence letter along with the SHPO concurrence letter may be found in Appendix B.

3.6 SOCIOECONOMIC CONDITIONS

a. Employment and Income: Data from the 2010 U.S. Census data showed 69 residents as employed. The unemployment rate at that time was 31.71% percent; an additional 47.44% were not working but were not seeking employment and thus are not considered unemployed. The median household income is $37,250; the per capita income was $16,168; and 16.47% of residents were below the poverty level (DCCED, 2015).

b. Demographics and Trends: As of the 2010 census, the population of Deering is 122, with 86.89% of those being Alaska Native, and 13.1% white or two or more races (DCCED, 2015).

c. Lifestyles, Cultural Values, Attitudes, and Expectations: Deering is primarily an Inupiaq Eskimo village, and subsistence activities contribute substantially to local diets (DCCED, 2015).

d. Community Infrastructure: Deering is accessible year-round by plane. A state-owned 3,300 foot long by 75 foot wide gravel airstrip, with a 2,640 foot long by 75 foot wide gravel crosswind strip, enables flights by several Kotzebue air services. Additionally, a 2,400 foot long and 50 foot' wide private runway is available. Crowley Marine Services barges fuel and goods from Kotzebue each summer. Small boats, ATVs, and snow machines are used for local travel (DCCED, 2015).

   Households derive their water via the city water distribution system, surface sourced from the Inmachuk River; electricity is acquired from Ipnatchiaq Electric Company via diesel generator and wind; the community operates a Class III landfill for refuse (DCCED, 2015).

3.7 ENVIRONMENTAL JUSTICE

There will be no disproportionately high or adverse human health or environmental effects of the program and policies on minorities or low-income populations or communities. The proposed action will benefit the community and all those who reside there by providing an expanded transportation corridor, a more reliable emergency evacuation route, a reliable year-round access to the airport, and temporary jobs associated with the construction.

3.8 HAZARDOUS MATERIAL/WASTE

The following subheadings are addressed in the Phase I Environmental Site Assessment found in Appendix D.

a. Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste/materials.

b. RCRA, non-hazardous solid waste sites.

c. RCRA Subtitle I, underground storage tank(s), as amended by the Hazardous & Solid Waste Amendments of 1984.

d. Comprehensive Environmental Response Compensation, and Liability Act, and Superfund Amendments and Reauthorization Act (CERCLA-SARA) of 1986.

e. Toxic Substances Control Act.

3.9 RESOURCE/LAND USE PATTERNS

- Hunting, Fishing, Gathering – The land adjacent to the existing road corridor is actively used for subsistence activities by Deering residents.
- Timber Harvesting – Not Applicable.
- Agriculture – Not Applicable.
- Mining – Not Applicable.
- Outdoor Recreation – The proposed roadway improvements project will improve access to areas potentially used for outdoor recreational activities.
- Transportation Network – The proposed project will enhance/expand the Deering transportation network.
- Land Use Plans – The proposed road and bridge is included in the Deering Community Comprehensive Plan 2006-2016. The road/bridge development was included on their "Top 10 Capital Project Priorities 2006-11". The quote that follows was taken directly from the Plan:

  "4. Road and bridge development via Smith Creek for a flood escape route, land expansion, and an alternate route to the airport."

3.10 OTHER VALUES

a. Wilderness: No areas considered wilderness are located within or near the project corridor.

b. Sound and Noise: Not applicable.

c. Public Health and Safety: Currently, Airport Road is the only route into or out of the village. This road is the only access the residents have to reach higher ground. The lack of an adequate, reliable emergency egress during seasonal flooding and wind driven tidal events currently poses a threat to the health and safety to Deering residents. Additionally, Airport Road washes out during high precipitation events and prevents residents from year-round access to the airport.

d. Visual Settings: The proposed road corridor is currently undeveloped; the new road and bridge will alter the visual settings of the area.

e. Non-user values: Not applicable.

4.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

1. Land Resources

   The Preferred and No-Action Alternatives are in compliance with the:

   A. Topography (land forms, drainage, gradients): The preferred alternative will not dramatically change the landforms of the area; the proposed improvements will be constructed on top of the existing terrain.

      Drainage/gradients of the area will be maintained, as necessary, through the installation of appropriately placed culverts to maintain the areas hydrologic regime.

   B. Soils (types, characteristics): See 3.1b Land Resources - Soils.

      Farmland Protection Policy Act PL 97-98: There is no identified Prime or Unique Farmland in Alaska or within or near the Preferred Alternative.

   C. Geologic Setting and Mineral Resources

      Surface Mining Control and Reclamation Act of 1977 (30 U.S.C.A. 1201, 1202, 1211): The Preferred Alternative will not affect any known mineral deposits or involve the act of mining.

2. Water Resources (quality, use, rights)

   A. Water Supply

      Safe Drinking Water Act of 1974 PL90-523 (42 U.S.C.A 300f to 300j-26): The Preferred Alternative will have no effect on the drinking water supply of Deering.

      Sole Source Aquifers: The Preferred Alternative will not affect any sole source aquifers.

   B. Waste Water

      Clean Water Act Section 402 (33 U.S.C.A. 1251): The Preferred Alternative will not have any waste water discharges associated with it.

   C. Storm Water

      The Preferred and No-Action Alternatives are in compliance with the Clean Water Act Section 402 (33 U.S.C.A. 1342): The Preferred Alternative will disturb over one acre, and will therefore require an National Pollution Discharge Elimination System (NPDES) permit. The NPDES permit will be completed and submitted by the yet to be determined project construction contractor. Additionally, a Storm Water Pollution Prevention Plan (SWPPP) will be required for the proposed project. The SWPPP will be completed and submitted by the yet to be determined project construction contractor.

D. Wetlands

The Preferred and No-Action Alternatives are in compliance with the Executive Order 11990 (Protection of Wetlands, 1977): The Preferred Alternative will require the permanent placement of fill in approximately 6.78 acres, and temporary fill into approximately 0.08 acres of USACE Jurisdictional Wetlands. The USACE Section 404 Permit can be found in Appendix C.

The Preferred and No-Action Alternatives are in compliance with the Clean Water Act Section 404 (33 U.S.C.A. 1344): The Preferred Alternative will require the permanent placement of fill in approximately 6.78 acres, and temporary fill into approximately 0.08 acres of USACE Jurisdictional Wetlands. The USACE Section 404 Permit can be found in Appendix C.

E. Floodplain

The Preferred and No-Action Alternatives are in compliance with the Executive Order 11988 (Floodplain Management, 1977): No Federal Emergency Management Act (FEMA) Flood Insurance Rate Maps (FIRMs) are available for the area. Deering does not participate in the National Flood Insurance Program (NFIP).

The Smith Creek Bridge will require the placement of approximately 6,430 CY of fill material into the Smith Creek floodplain. This assumes that the 125-foot approaches leading up to either side of the bridge are within the floodplain. Steel support piles and bin-wall abutments for the bridge approaches will be placed within the Smith Creek floodplain (See Figures). No material will be placed below ordinary high water (OHW).

Water needed for road construction and compaction will be withdrawn from the Inmachuk River (See Figures). The suction hose used to withdraw water will be fitted with an appropriately sized screen to ensure fish safety. An ADNR-MLW Temporary Water Use permit and an ADF&G Fish Habitat permit have been applied for and the respective permits are located in Appendix C.

F. Clean Water Certification

The Preferred and No-Action Alternatives are in compliance with the Clean Water Act Section 401 Certification. The Section 401 Permit is a subset of the Section 404 Permit Application. The 401 Certification ensures that the project is in compliance with the Clean Water Act and can be found in Appendix C.

3. Air Resources (quality, visibility, etc.)

The Preferred and No-Action Alternatives are in compliance with the Clean Air Act (42 U.S.C.A. 7401 to 7671q): No excessive emissions are anticipated to be associated with the Preferred Alternative. Any potential for elevated emissions would be temporary in nature and associated with construction heavy equipment. Water will be applied to the road surfaces during construction to minimize the amount of fugitive

dust leaving the site. Once construction is complete, calcium-chloride will be applied as a dust palliative.

4. Living Resources

   A. Fish, Wildlife, Plants

   The Preferred and No-Action Alternatives are in compliance with the Endangered Species Act of 1973 Section 7 (16 U.SC.A. 1536): The BIA determined, through consultation with the USFWS (Consultation #07CAFB00-2015-SLI-0010), that no threatened or endangered species will be jeopardized by the Preferred Alternative. The proposed road and bridge corridor is located away from preferred nesting habitats for listed eiders, and polar bear habitat.

   Conclusions from the USFWS consultation letter are as follows:

   > "Because listed eider density in the action area is extremely low and disturbance to migrating eiders would be so minor that injury or death would occur, we expect project effects to these birds would be insignificant."
   >
   > "Due to lack of preferred denning habitat, polar bears rarely den near Deering. Additionally, given that the proposed activity would be limited to snow-free months, effects of the proposed action on denning polar bears would not occur."
   >
   > "Because (1) the density of polar bears in the action area is very low; (2) encounters with polar bears are expected to be rare; (3) behavioral effects to transient bears would be minor and temporary; (4) mitigation measures are included in the interaction guidelines to minimize potential impacts in the event that transient polar bears are encountered; and (5) effects on denning polar bears are not anticipated, we expect effects of the proposed action on polar bears would be insignificant."
   >
   > "The proposed action could temporarily disturb listed eiders or polar bears in the project area; however, due to low densities of these species and minimization measures in place, we expect the effects of disturbance to be insignificant. Therefore the Service concludes that the proposed action is not likely to adversely affect listed eiders or polar bears. Preparation of a Biological Assessment or further consultation under Section 7 of the ESA is not necessary at this time."

   See communications with USFWS in Appendix B (USFWS, 2014 & 2016).

   The Preferred and No-Action Alternatives are in compliance with the Bald and Golden Eagles Protection Act (16 U.S.C. 668-668d): The Preferred Alternative has a low potential to impact Bald or Golden Eagles. The proposed project is located within a wet tundra habitat; this is an unlikely location for nesting Bald or Golden Eagles. In the unlikely event that nesting eagles are present, steps to ensure that temporary disturbances are kept a minimum of 660 feet away from the

nest tree, and construction activities are scheduled to avoid times when the birds are nesting (April through September). If a nest is found in or near the project area construction will cease and the yet to be determined project contractor will immediately consult with USFWS on appropriate action.

The Preferred and No-Action Alternatives are in compliance with the Migratory Bird Treaty Act and Migratory Bird Conservation Act (16 U.S.C. 703-715): The proposed project is not anticipated to negatively impact migratory or nesting birds. To limit potential impacts to nesting birds, land clearing will not take place between May 20 and July 20.

B. Agriculture – Prime or Unique Farmland – Not applicable; there is no identified Prime or Unique Farmland in Alaska or the proposed project area.

5. Cultural, Historic, and Religious Properties

A. Historic Properties

The Preferred and No-Action Alternatives are believed to be in compliance with the National Historic Preservation Act Section 106 (16 470f): An archaeological assessment of the Preferred Alternative recommended a finding of no historic properties affected be issued for the West Airport Road Project (TNSDS, 2014). The concurrence letter can be found in Appendix B.

B. Religious Freedom

The Preferred and No-Action Alternatives are in compliance with the American Indian Religious Freedom Act of 1978 (PL 95-341): None of the alternatives would interfere with access to known areas required for cultural or religious practices.

6. Socioeconomic Conditions

A. Environmental Justice

The Preferred and No-Action Alternatives are in compliance with the Executive Order 12898: The Village of Deering is predominantly Alaska Native or American Indian, both minority groups. The BIA has determined that no disproportionately high or adverse human health or environmental impacts to the minority or low-income population within Deering would occur as a result of the Preferred Alternative.

B. Relocation of Residents

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646) and Title IV – Uniform Relocation Act amendments of 1987 (42 U.S.C 4601): There are no relocations associated with the Preferred Alternative.

C. Community Infrastructure

The preferred alternative will not adversely affect water supply, sewer, or storm water. The proposed project will expand and enhance the community road and emergency evacuation infrastructure through the construction of the West Airport Road and bridge.

7. Resources Use Pattern

A. Hunting-Fishing-Gathering Subsistence: The Preferred Alternative may improve access to hunting-fishing-gathering subsistence sites.

B. Timber Harvesting or Range

Forrest and Rangeland Renewable Resources Planning Act of 1975 (16 U.S.C.A. 1600 to 1614): No commercially viable timber clearing is associated with this project.

C. Land Use Plans: In 2005/06 Deering worked with planners from the Northwest Arctic Borough Planning Department to develop the Deering Community Comprehensive Plan 2006-2016. The proposed project is project number 4 on their list of "Top 10 Capital Project Priorities".

8. Other Values

A. Sound and Noise

The Preferred and No-Action Alternatives are in compliance with the Noise Control Act of 1972 (42 U.S.C. 4901-4918): The preferred alternative will be in compliance with noise emission standards established by the EPA. Any increase in noise associated with construction would be temporary and short in duration.

The Preferred and No-Action Alternatives are in compliance with the Federal Highway Administration Procedures for Abatement of Traffic Noise and Construction Noise (23 CFR 772): The Preferred Alternative is located in a remote village in Alaska that has limited traffic. Therefore, this is not applicable to this project. Additionally, the proposed project site is new road construction and will not interfere with the existing Deering infrastructure.

B. Public Health and Safety: The proposed project is not anticipated to have any negative effects on public health and safety. The proposed project will enhance public safety by creating an alternate emergency egress for the village of Deering and create year-round reliable access to the airport for quick access during a medical emergency requiring airlifting to hospital facilities in Nome or Anchorage.

C. The Preferred and No-Action Alternatives are in compliance with the Toxic Substance Control Act of 1986 (TSCA) (15 U.S.C.A. 2601-2692): None of the alternatives will result in the inadvertent exposure of any humans to lead, radon, or asbestos.

D. The Preferred and No-Action Alternatives are in compliance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C.A.9601 to 9675) and the Superfund Amendments and Reauthorization Acts of 1986: None of the alternatives would knowingly expose humans to any hazardous substances listed in CERCLA at levels above established health criteria.

E. The Preferred and No-Action Alternatives are in compliance with the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) and the Federal Facilities Compliance Act of 1992 (42 U.S.C. 6901-6992): None of the alternatives will involve the treatment, storage, transportation or disposal of any listed chemical, or the disposal of solid waste on the site.

F. Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) (7 U.S.C.A. 136 to 136y): None of the alternatives will require the use of pesticides.

G. Food Safety: None of the alternatives involve any food preparation or serving of food.

H. Building Official and Code Administrators (BOCA) Standards for: construction, electrical, fire, and safety practices. None of the alternatives include construction or operation of public buildings or residences.

I. The Preferred and No-Action Alternatives are in compliance with the Occupational Safety and Health Act (OSHA) of 1970 (29 U.S.C. 651 et seq.): The unnamed construction contractor's Health and Safety Officer will be responsible for ensuring that OSHA regulations are obeyed and enforced.

J. Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (42 U.S.C. 11011 et seq.): None of the alternatives would involve the use, transportation, or storage of listed hazardous materials.

K. Resource Conservation and Recovery Act (RCRA) Subchapter IX – Regulation of Underground Storage Tanks (42 U.S.C. 6991-6991i): None of the alternatives involve the use or closure of underground storage tanks.

L. Coast Guard Regulations: The Preferred Alternative will require the construction of a bridge over Smith Creek, which is not considered a navigable waterway and will therefore not require a USCG Bridge Permit.

M. Section 10 of the Rivers and Harbors Act: The Preferred Alternative will cross Smith Creek which is covered under Section 10 Rivers and Harbors Act of 1899. Since Smith Creek is not considered a navigable waterway of the US, the proposed structure will not require a permit through the USACE.

Direct, Indirect, and Cumulative Effects: The proposed project is not anticipated to have any negative direct, indirect, or cumulative effects to the environment, on the Village of Deering. It is fully anticipated that the proposed project will have only positive effects that will directly, indirectly, and cumulatively impact the community. The direct positive effect is that the residents will have an enhanced/expanded road infrastructure. Cumulative effects include reliable access to the airstrip and enhanced emergency evacuation/access route.

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5.0 LIST OF PREPARERS

Name/Title/Company	Expertise Applied to Environmental Assessment
Isaac Pearson, P.E. Senior Engineer, Bristol	Project Manager, QA/QC
Eric Lindeen Environmental Scientist, Bristol	Environmental research, author, impact assessement, QA/QC
Robert Burdick, EIT Staff Engineer, Bristol	Calculations and estimates/development of road design.
Kraig Hughes, P.E. Senior Engineer, Bristol	Calculations and estimates/development of bridge design.

(Intentionally Blank)

6.0 REFERENCES

Alaska Department of Commerce, Community, and Economic Development (DCCED 2014), *Alaska Community Database website, Community Profiles Online: Deering*, Website: http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.cfm

Alaska Department of Environmental Conservation (ADEC 2014), *Contaminated Sites Database Search*, Website: http://www.dec.state.ak.us/spar/csp/search/results.asp

Alaska Department of Environmental Conservation (ADEC 2014), Division of Spill prevention and response, (2014), *Spills Database Online Query*, Website: http://www.dec.state.ak.us/spar/perp/search/search.asp

Alaska Department of Fish and Game (ADFG 2014), *Anadromous Fish Stream Viewer*, Website: http://gis.sf.adfg.state.ak.us/AWC_IMS/viewer.htm

Environmental Data Resources (EDR 2013), *The EDR Radius Map Report with GeoCheck; West Airport Road Project Deering, AK 99736,* Inquiry number: 3773872, October 2013

Environmental Protection Agency (EPA 2014), *Nonattainment areas for Critical Pollutants*, Website: http://www.epa.gov/oar/oaqps/greenbk/

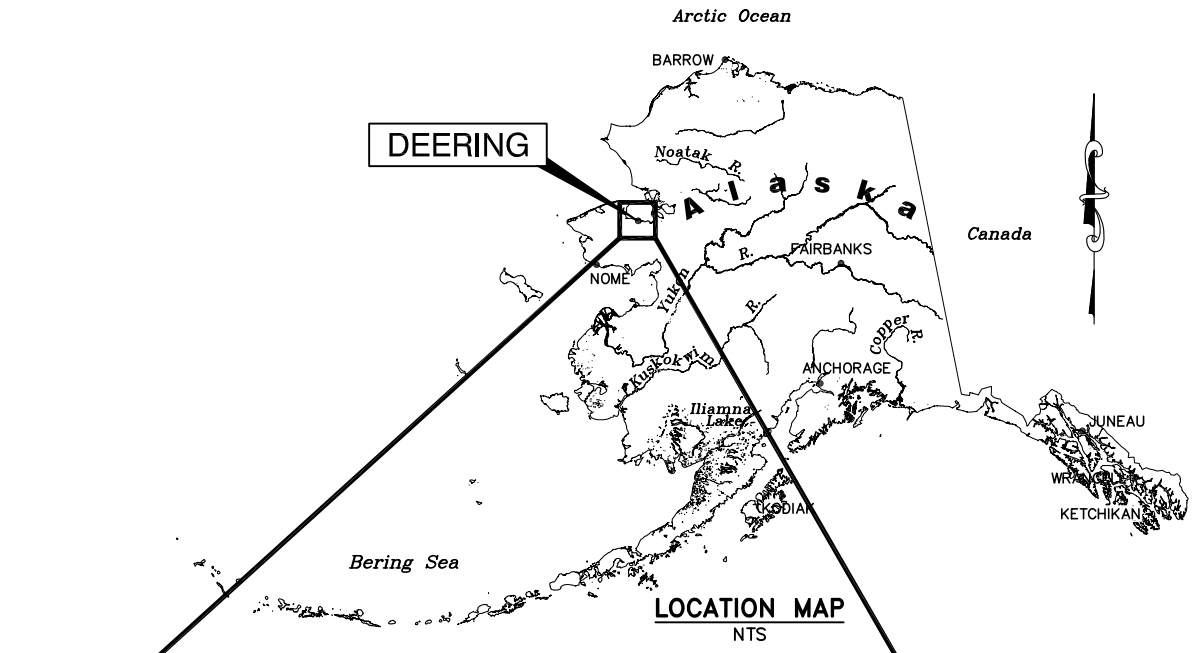
True North Sustainable Development Solutions (2013). *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska.*

Selkregg, Lidia L., ed., (1976*), Alaska Regional Profiles: Northwest Region, Volume V*, University of Alaska, Arctic Environmental Information and Data Center, Anchorage, Alaska.

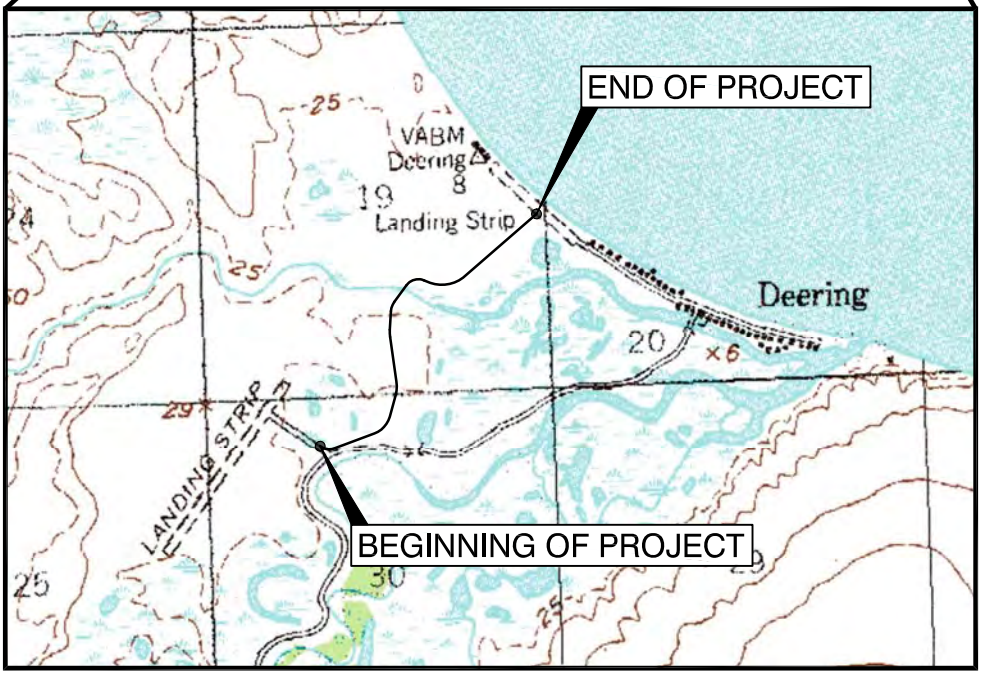
U.S. Forest Service (USFS), 1995. *Ecological Subregions of the United States*, Chapter 2, Section 125A – Kotzebue Sound Lowlands, Website: http://www.fs.fed.us/land/pubs/ecoregions/intro.html

U.S. Army Corps of Engineers (COE), (2014), *Flood Hazard Data: Deering* Website: http://www.poa.usace.army.mil/en/cw/fld_haz/.htm

FIGURES



LOCATION MAP
NTS



VICINITY MAP
SCALE: NTS
SOURCE: U.S.G.S. QUAD
KOTZEBUE A2

FIGURE 1
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
VICINITY MAP

Bristol
ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 1
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	

PHOTO SOURCE: 2013 DCCED AEROMETRIC PHOTO

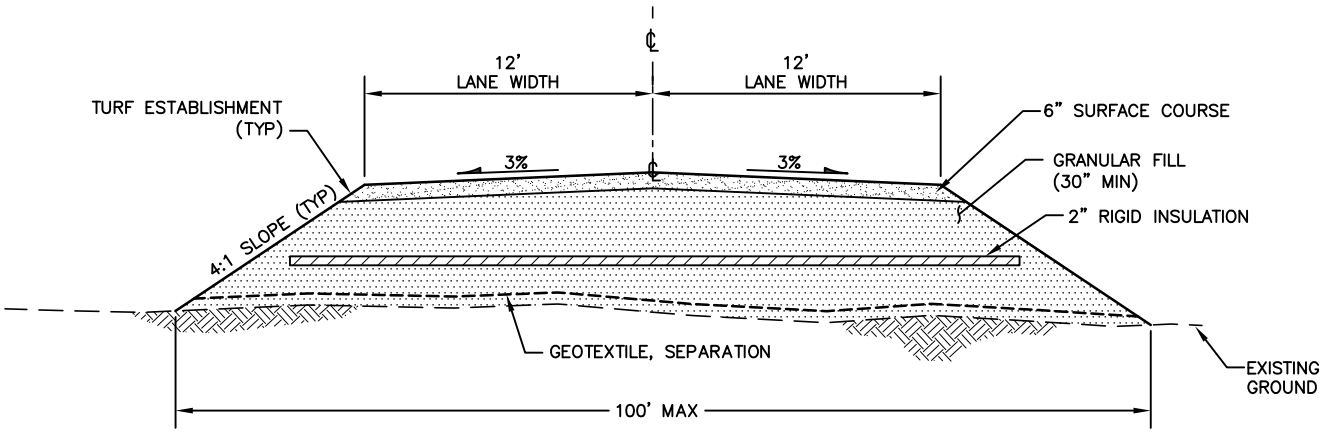
0 250 500
SCALE IN FEET

FIGURE 2
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
SITE PLAN

Bristol
ENGINEERING SERVICES CORPORATION

DATUM: -	DATE	MAY 2017	SHEET 2
PROJECTION: -	DWN.	JDW	of
PROJECT No. 32140053	SCALE	SHOWN	7
	APPRVD.	IPP	

Drawing: K:\JOBS\32140053 WEST AIRPORT RD\ACAD-ENVIRO\EA & ESA FIGS\32140053_FIG2_EA.DWG – Layout: FIG2
User: JWANDER Apr 27, 2017 – 3:59pm Xrefs: BR_85X11P.DWG – Images: DEERINGAREAN2013.TIF



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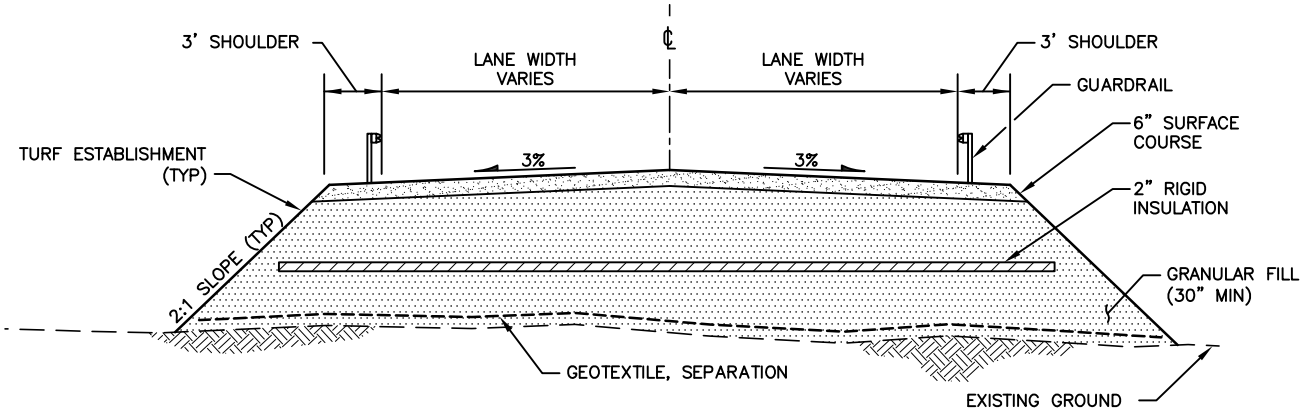
SCALE: NTS



2 — TWO–LANE CROWN SECTION WITH GUARDRAIL
SCALE: NTS

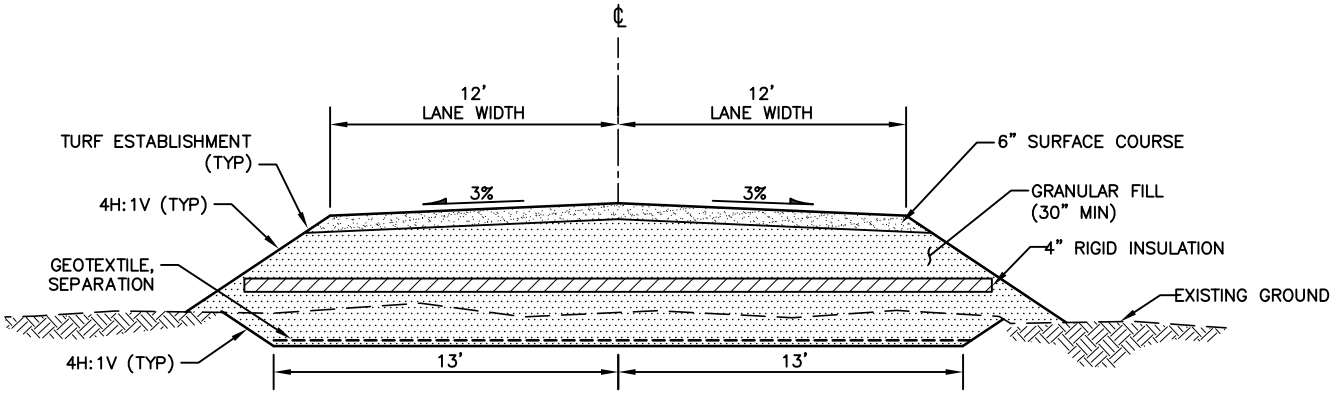
FIGURE 3
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS

Bristol
ENGINEERING SERVICES CORPORATION

DATUM: -
PROJECTION: -
PROJECT No. 32140053

DATE MAY 2017
DWN. JDW
SCALE SHOWN
APPRVD. IPP

SHEET 3 of 7



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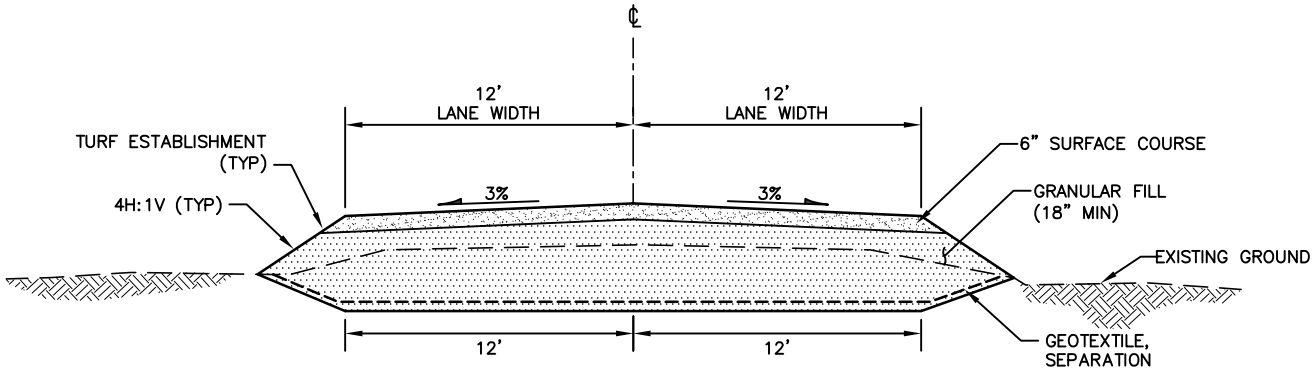

2 — TWO–LANE CROWN ROAD RECONSTRUCTION

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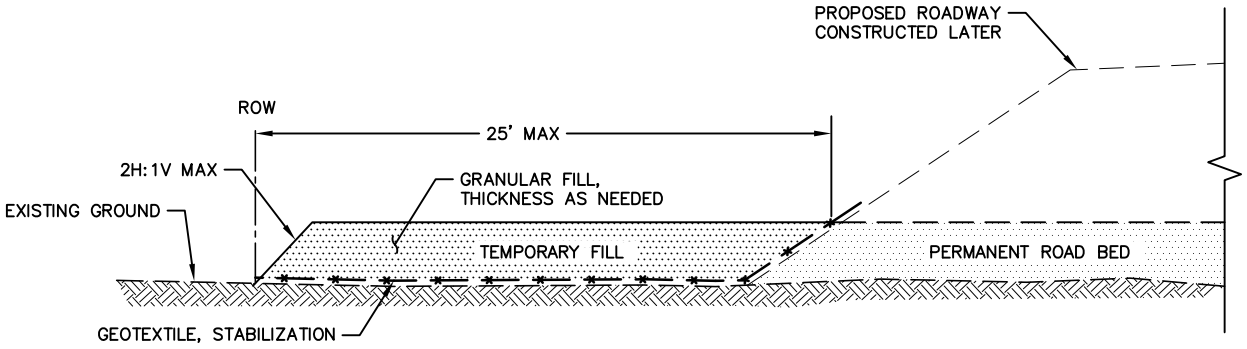

3 — TEMPORARY CONSTRUCTION PAD

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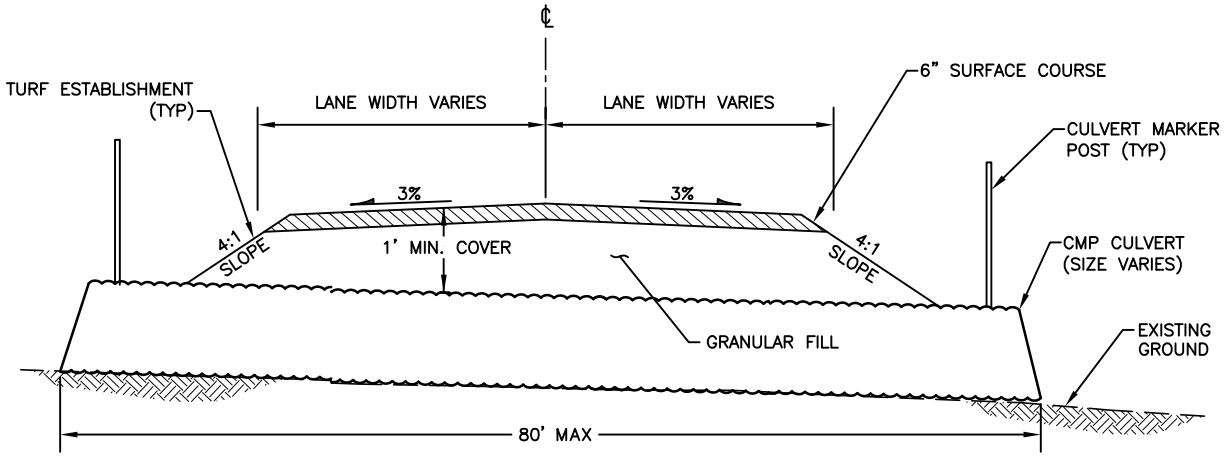
FIGURE 4
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS

Bristol
ENGINEERING
SERVICES CORPORATION

DATUM: -	DATE	MAY 2017	SHEET 4
PROJECTION: -	DWN.	JDW	of
PROJECT No. 32140053	SCALE	SHOWN	7
	APPRVD.	IPP	



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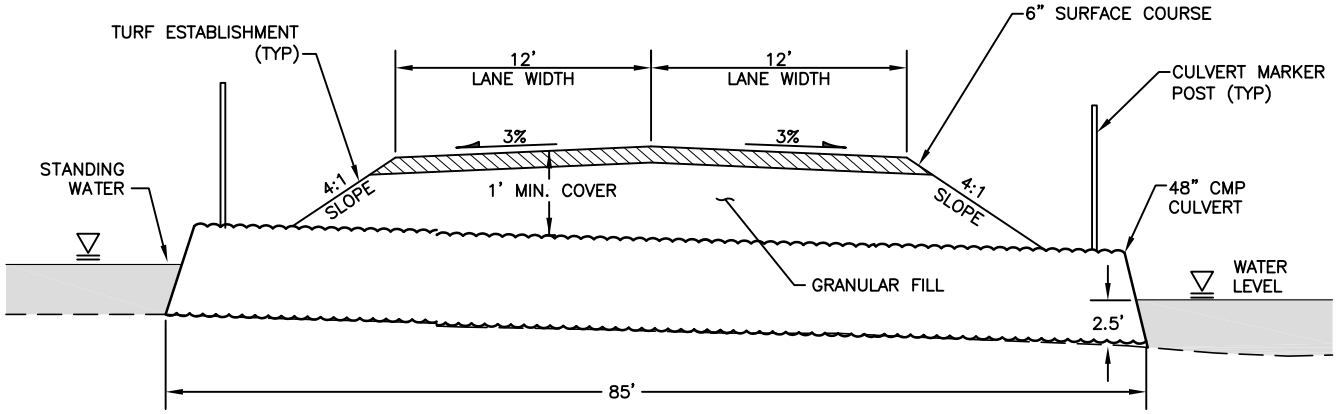
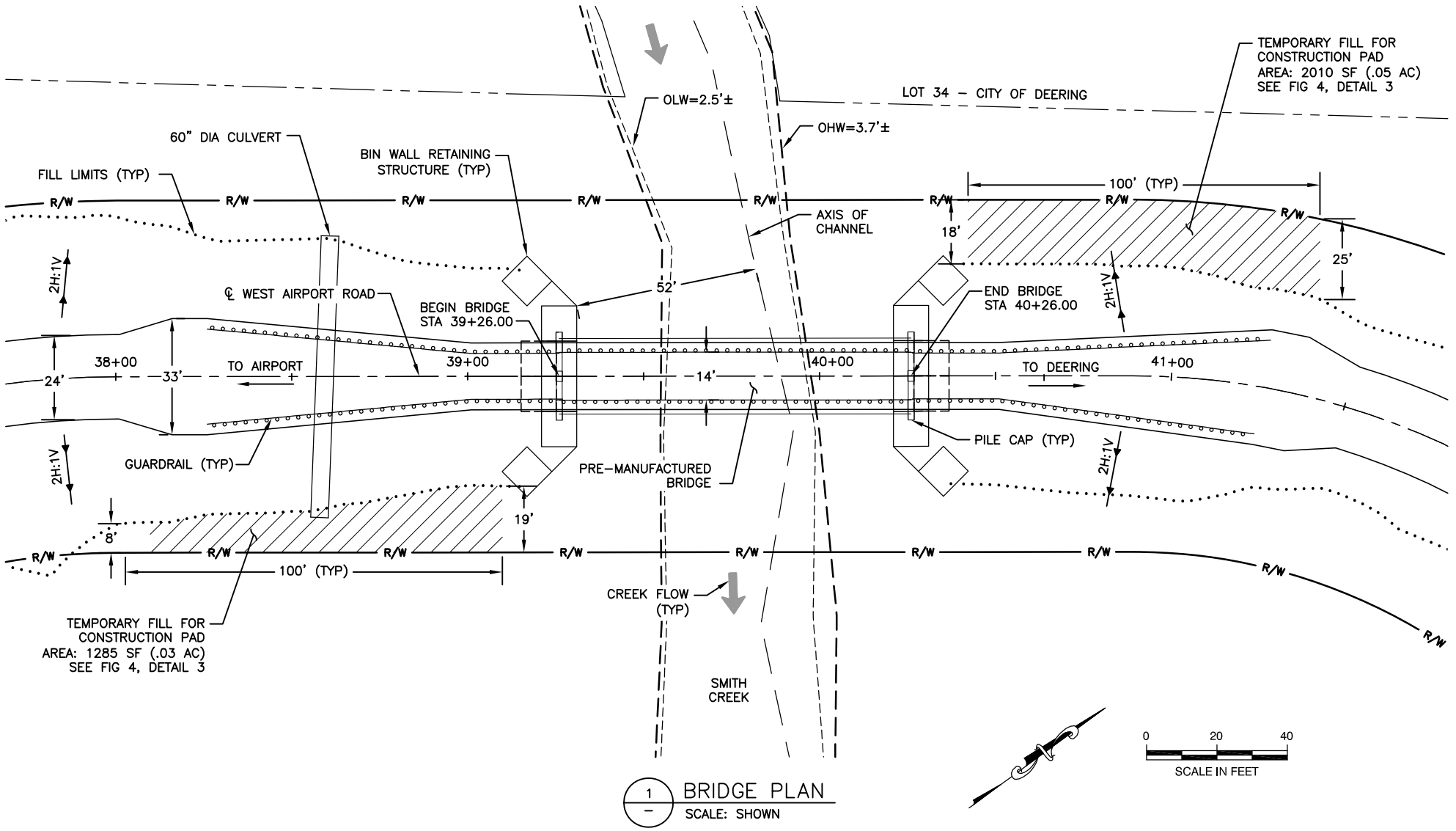


2 — SPECIAL CULVERT SECTION
SCALE: NTS

FIGURE 5
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS

Bristol ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 5
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	



1 / - BRIDGE PLAN
SCALE: SHOWN

NOTES

1. VEHICULAR BRIDGE FOR PUBLIC USE WILL BE AASHTO-LRFD COMPLIANT.
2. NO FILL WILL BE PLACED BELOW OHW.

ABBREVIATIONS

OHW = ORDINARY HIGH WATER (SEPTEMBER 2013)
OLW = ORDINARY LOW WATER (SEPTEMBER 2013)

MAP INFO

PARCEL OWNER
NANA REGIONAL CORPORATION INC.

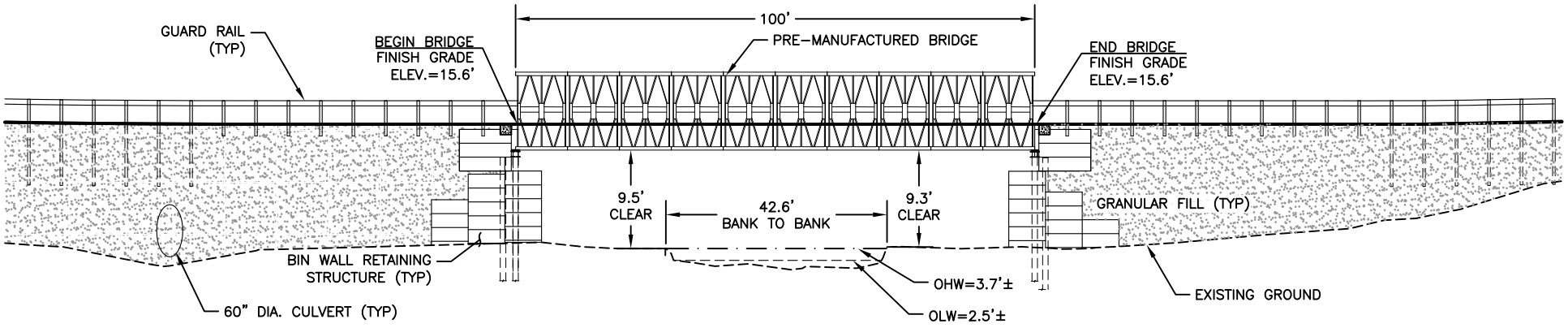
HORIZONTAL DATUM:
ALASKA STATE PLANE NAD83, ZONE 7, U.S. FEET

VERTICAL DATUM:
NAVD88

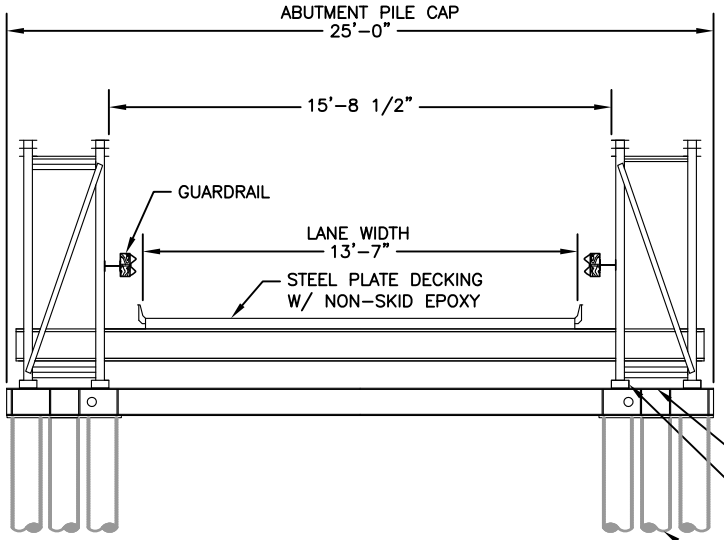
FIGURE 6
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
BRIDGE PLAN

Bristol ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 6
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	



1 – BRIDGE ELEVATION AT BRIDGE ℄
SCALE: SHOWN



2 – VEHICULAR BRIDGE SECTION
SCALE: NTS

NOTES

1. VEHICULAR BRIDGE FOR PUBLIC USE WILL BE AASHTO-LRFD COMPLIANT.

HORIZONTAL DATUM:
ALASKA STATE PLANE NAD83, ZONE 7, U.S. FEET

VERTICAL DATUM:
NAVD88

FIGURE 7
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
BRIDGE ELEVATION & SECTION

Bristol ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 7
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	

APPENDIX A

SCOPING DOCUMENTS

Bristol
ENGINEERING
SERVICES CORPORATION

111 W. 16th Avenue, Third Floor
Anchorage, AK 99501-5109
907-563-0013 Phone
907-563-6713 Fax

March 7, 2014

Subject: Agency Scoping Request for Comments
West Airport Road Project, Deering, Alaska

Dear Agency Representative:

The Native Village of Deering has contracted Bristol Engineering Services Corporation (Bristol) to develop plans, complete environmental permitting and the NEPA process, for new road and bridge construction in Deering, Alaska. The proposed project will improve the road infrastructure and establish an emergency evacuation route for the Community (Figures 1 & 2).

Funding for this project will be through the Bureau of Indian Affairs (BIA) – Indian Reservations Roads (IRR) Program; therefore this is a federal undertaking. In accordance with the National Environmental Policy Act (NEPA), Bristol is soliciting comments from potentially interested parties to determine if the proposed project could significantly impact the natural environment. Responses and recommendations received by Bristol as a result of this action will be used to determine the appropriate NEPA documentation procedure.

PROJECT LOCATION

The Native Village of Deering is located on Kotzebue Sound at the mouth of the Inmachuk River, approximately 57 miles southwest of Kotzebue. It is built on a flat sand and gravel spit approximately 300 feet wide and approximately half-mile long. It lays at approximately 66.07° North Latitude and -162.71° west Longitude (Sections 19 and 30, Township 008 North, Range 019 West, Kateel River Meridian). The area encompasses 5.1 sq. miles of land and 0.1 sq. miles of water (DCCED, 2013). Deerong is located in the Cape Nome Recording District.

PROPOSED PROJECT

The proposed project will consist of construction a new road (Figure2) the will serve as an evacuation route for the village residents. The road driving surface will be approximately 24 feet wide by 1 mile long and include a bridge crossing over Smith Creek. Placement of fill into wetlands will be unavoidable and will consist of no more than 10 acres.

At this early stage it is anticipated the bridge will likely be a single span/rail car bridge with earthen abutments. The bridge structure will allow a minimum of 6 feet of vertical clearance from ordinary high water (OHW) and a minimum of 10 feet horizontal clearance between

abutments at OHW. The plan is to have significantly more horizontal clearance than the required minimum. At this time there are no in-stream piers planned.

Culverts will be appropriately placed along the proposed road corridor to ensure drainage patterns. Culvert placement and drainage patterns along the road corridor will be evaluated during the design phase of the project. No stream culverts are associated with this project.

PURPOSE AND NEED

The proposed project will improve the infrastructure and safety of travel within the Native Village of Deering. The new road and bridge will serve as the primary egress for emergency evacuation from the village to the airport area during seasonal and tidal flooding when the existing Deering Airport Road is typically washed out. A new bridge over Smith Creek will have the load-bearing capacity necessary to move heavy equipment into and out of Deering year round as the existing bridge over Smith Creek on Deering Road is not strong enough to support these heavy loads.

PROPOSED ACTION

Borrow Source

Borrow material will come from existing, permitted borrow sites located along Airport Road.

Right Of Way Status

The right-of-way (ROW) and surface rights belong to the Native Village of Deering. The road and bridge ROW will need to be acquired by the City of Deering prior to construction.

Construction

Construction events and descriptions are as follows:

- Geotextile will be placed over the ground surface, followed by placement of fill material to create the desired road shape.

- Placement of Culverts – Culverts will be appropriately placed along the proposed road corridor to ensure drainage patterns are maintained and adjacent to the bridge to increase flow, especially during break-up and flooding conditions.

- Placement of Sub-Base and Base Course –Gravel sub-base course will be used to create the embankment for the road reconstruction/resurfacing. The fill will come from a permitted borrow source.

- Placement of Surface Course –The surface course will be crushed aggregate.

PERMITTING

Permits identified for this project consist of:

- USACE Jurisdictional Determination (JD) and Section 10/404/401 Permit Application
- ADNR, State Historic Preservation Office (SHPO) – Compliance with Section 106 of the National Historic Preservation Act
- ADNR- MLW - Temporary Water Use Permit Application
- ADF&G – Habitat Division Fish Habitat (Title 41) Permit – Water withdrawal
- U.S. Coast Guard Bridge Permit Application

RESPONSE REQUEST

Bristol wishes to solicit comments regarding the potential effects of the project, and requests any comments you may have regarding:

- Additional permits and/or clearances not identified that must be obtained from your agency for the proposed project;
- Information and data with respect to the base floodplains, regulatory floodways, and/or specialized flood hazard area associated with drainages that will be affected by the proposed project;
- Identification of any potential conflicts the project may have with the goals or objectives of the local land use plans, and development;
- Water quality concerns;
- Information or data on sensitive fish and wildlife habitats potentially affected by the proposal;
- Information with respect to public road use, access problems, land use concerns, subsistence issues, and/or any other special conditions that may be affected by the proposed project; and
- The presence of sites, structures and objects of historic, architectural, or cultural sensitivity.

There is no agency meeting planned for this project at this time; however, if sufficient interest is indicated, an agency meeting will be scheduled.

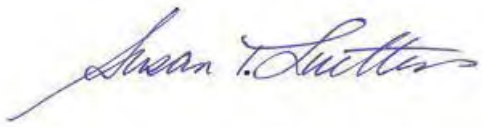
Please share with us any comments or recommendations you may have regarding the described project. **We would appreciate receiving your comments by April 9, 2014**. If you have any questions about the proposed project or would like to comment verbally, please call me at 907-743-9316 or e-mail your comments to sluetters@bristol-companies.com; if you would like to mail in your comments, please mail them to:

Ms. Susan Luetters
Bristol Engineering Services Corporation
111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501

Thank you for your assistance.

Sincerely,

Bristol Engineering Services Corporation



Susan T. Luetters
Sr. Environmental Scientist

Attachments: Figure 1: Vicinity Map
Figure 2: Site Location Map
Attachment A: Preliminary Research Results

RECIPIENTS:

State of Alaska

Mr. Jim Rypkema	ADEC - Water Quality
Ms. Judith Bittner	ADNR - SHPO
Mr. Gary Mendivil	ADEC - Commissioners Office
Mr. Bill Morris	ADNR – Habitat Division, Fairbanks Office
Ms. Taunnie Boothby	ADNR – DCCED

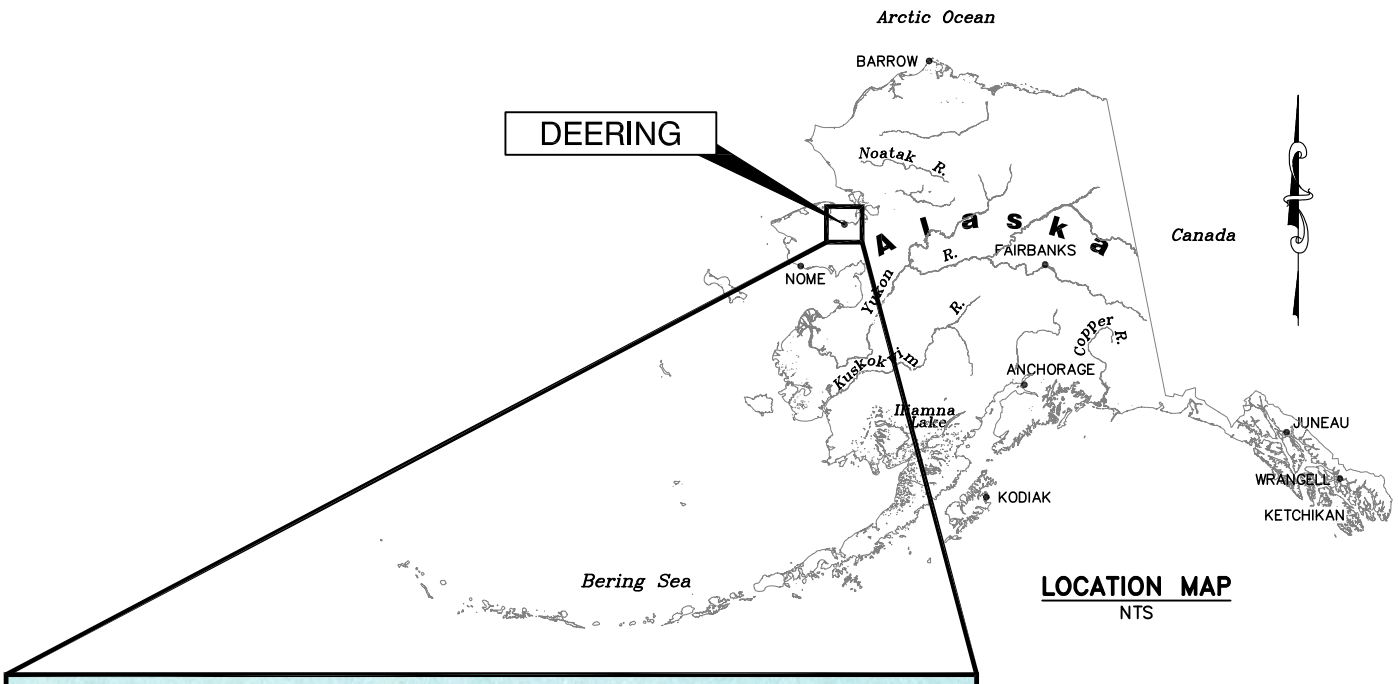
Federal

Mr. Ted Swem	USFWS – Endangered Species
Ms. Jewel Bennett	USFWS – Conservation Planning
Mr. Mike Holley	USACE – Regulatory, North Branch
Ms. Kaiti Ott	USFWS – Threatened & Endangered Species

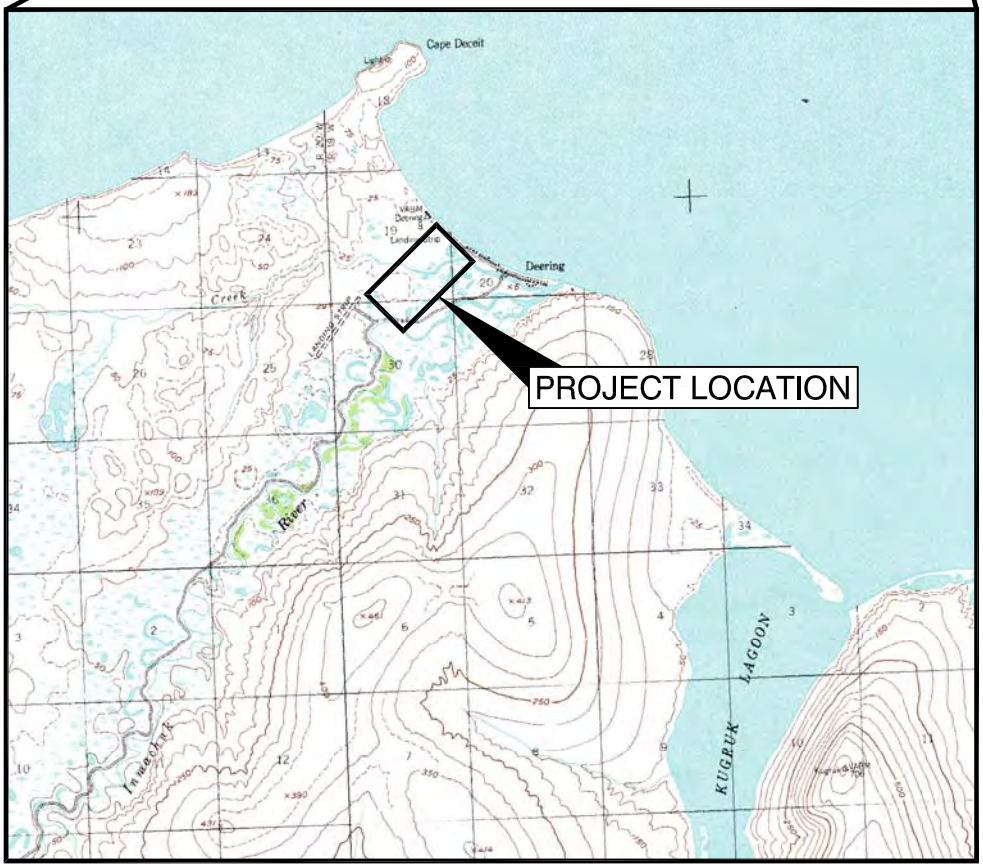
Mr. Ricky Hoff	BIA – Archaeology
Mr. Mark Kahklen	BIA – Environmental
Mr. Kevin Kearny	USCG – Bridge Permitting

Local/Native

Ms. Delores Iyatunguk	Native Village of Deering – Tribal Administrator
Mr. Ronald Moto Sr.	City of Deering – Mayor
Mr. Walter Sampson	NANA Regional Corporation - Lands Manager



LOCATION MAP
NTS



VICINITY MAP
SCALE: NTS
SOURCE: U.S.G.S. QUAD
KOTZEBUE A2

FIGURE 1
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
VICINITY MAP

Bristol
ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 32140053

DATUM:	DATE FEB 2014	SHEET 1
NONE	DWN. CLC	
PROJECTION:	SCALE SHOWN	of
NONE	APPRVD. TRI	2

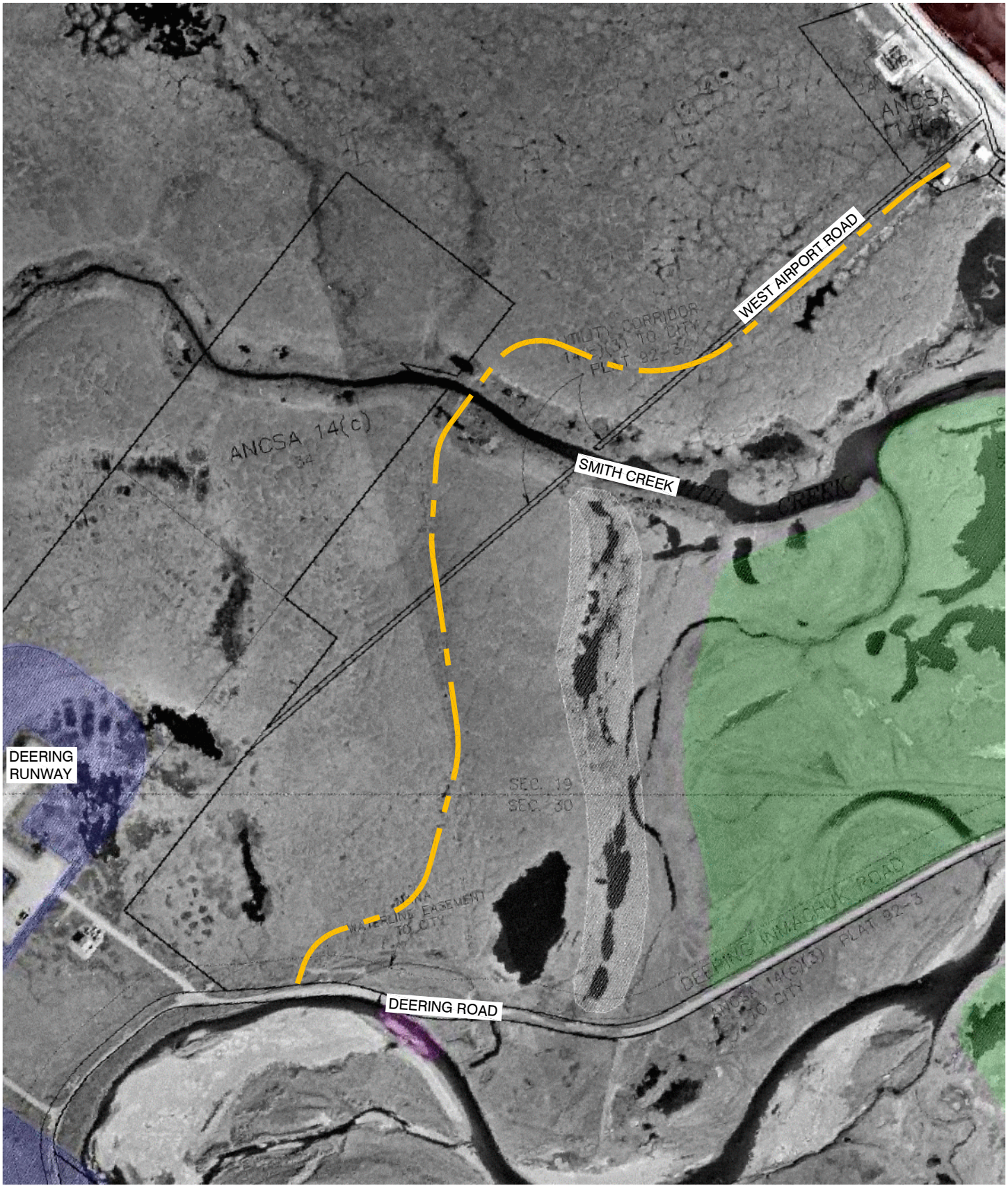


PHOTO SOURCE: 1997 DCED AREA USE MAPPING

0 250 500
SCALE IN FEET

FIGURE 2
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
SITE PLAN

Bristol
ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 32140053

DATUM: NONE	DATE FEB 2014	SHEET 2
PROJECTION: NONE	DWN. CLC	
	SCALE SHOWN	of
	APPRVD. TRI	2

Drawing: K:\JOBS\32140053 WEST AIRPORT RD\ACAD-ENVIRO\SCOPING\321340053_FIG2.DWG – Layout: FIG2
User: CCHRISTIANSON Feb 07, 2014 – 3:34pm Xrefs: BR_85X11P.DWG – Images: DEERINGAREA-1997.SID

ATTACHMENT A
Preliminary Research Results

Preliminary research results for the proposed West Airport Road Project.

Anadromous Fish Streams: Review of the Alaska Department of Fish & Game (ADFG) Anadromous Fish Distribution Database (FDD) shows the proposed project corridor is located in proximity (~0.5 mile) to the Inmachuk River, which empties into Kotzebue Sound to the north/northeast of the project corridor. The Inmachuk River has been cataloged in the ADFG/FDD with a catalogue number of 331-00-10750, showing the presence of rearing Coho Salmon, Pink Salmon, and Dolly Varden. There is a bridge that is associated with this project will crossover Smith Creek. Though this Creek dumps into the Inmachuk River at the mouth, the ADFG FDD does not identify it as an anadromous stream. The proposed project will take place entirely inland therefore the construction is not anticipated to affect area anadromous fish.

The project's anticipated water needs, for the purpose of compaction and as a dust palliative during construction, will require water withdrawal from the Inmachuk River. Appropriately sized screens will be fitted on all pumps to ensure no fish are impacted by the water withdrawal. The required water withdrawal is not anticipated to negatively affect area anadromous fish.

Coastal Zone Management: The ADNR - Alaska Coastal Management Plan (ACMP) was dismantled; effective July 1, 2011.

Contaminated Sites, Spills and Underground Storage Tanks: According to the DEC Contaminated Sites Program (CSP) Database, there is 1 active contaminated sites listed within Deering, involving fuel contamination at the Old Bulk Fuel Tank Farm. The site appears to be outside the vicinity (>0.5 mile) of the project area. The listed site is not anticipated to negatively affect the proposed project or be a cause for environmental concern.

A search on the online DEC Spills Database yielded results for 4 separate spills in the Deering area. All 4 of the reported spills appear to have not occurred in or near the proposed project corridor and have been assigned the status of "Case Closed, No Further Action" and therefore will not affect the proposed project.

A search of the DEC Underground Storage Tank Database reported no sites for the Deering area.

Critical Habitat and Sanctuaries: The USFWS ECOS Mapper shows that the proposed project is located within the recently vacated by the federal courts, polar bear critical habitat. A review of ADFG webpage of State Refuges, Critical Habitat Areas, and Sanctuaries found no State Refuges, Critical Habitat Areas, and/or Sanctuaries in or near Deering or the proposed project corridor.

Eagles: According to the United States Fish and Wildlife Service (USFWS) Alaska Bald Eagle Nest Atlas no known bald eagle nests occur in or near Nome or the project area. The fact that there were no known nests may be attributed to there having not been any reported nests and therefore no surveys in the area, but due to the habitat type of the

project area it is highly unlikely to attract and support nesting eagles. Prior to construction the contractor will perform a site survey to confirm that nesting eagles are not present. In the event that nesting eagles are present, the contractor will take steps to ensure that temporary disturbances are kept a minimum of 660 feet away from the nest tree, and construction activities are scheduled to avoid times when the birds are nesting (April through September).

Essential Fish Habitat: The NOAA website on Essential Fish Habitat (EFH) was consulted to determine the status of the area of the project. The project will take place entirely on land and therefore EFH will not be encountered.

Floodplain Management: According to FEMA, the area is not mapped for flood data. The USACE flood hazard data showed that Deering is not a participant in the National Flood Insurance Program (NFIP). The proposed project involves summer road and bridge construction, and is not anticipated to be impacted by a coastal flooding event.

Historical, Archaeological, and Cultural Properties: This is a federally funded project, therefore Section 106 is in effect and all requirements will be met prior to construction. An archaeological survey will be completed for the proposed project corridor by Mr. Robert Meinhardt of trueNORTH Sustainable Development Solutions, LLC. The survey will be submitted to BIA-Archaeology for their concurrence and subsequent submittal to SHPO for review and approval.

Local Government: The City of Deering is an unorganized, 2nd Class City with a population of 142. Elected/Appointed Officials include a Mayor and City Council.

Material Source and Disposal Sites: The borrow material for this project will come from an existing, permitted, borrow source. At this time there does not seem to be any material excavation associated with the proposed project.

National Forests: The proposed project corridor is not located within a National Forest.

National Parks, Preserves, and Monuments: The proposed project corridor is not located within or near any National Parks, Preserves or Monuments.

National Wildlife Refuges: The proposed project corridor is not located within a National Wildlife Refuge.

Navigability: Not applicable.

State Parks: The project area is not located within a State Park.

Threatened and Endangered Species: The data from the USFWS Information, Planning and Conservation (IPaC) system was requested as part of this preliminary research. The U.S. Fish and Wildlife Service provides species lists for actions authorized, funded or carried out by federal agencies. The species list fulfills the requirement, under section 7(c) of the Endangered Species Act, to provide a list of threatened and endangered species upon request for federal actions and National Environmental Policy Act (NEPA) compliance. Since this is a new website that is still under development the list generated from IPaC will not deliver information on candidate species in the action area. The IPaC consultation report, tracking number 07CAFB00-2014-SLI-0023, is included as an attachment.

The IPaC information was requested on February 14, 2014 and the following three threatened/endangered species were identified as potentially present in the area:

Polar bear (*Ursus maritiimus*) – Deering is located within the Polar bears distribution/range.

Spectacled eider (*Somateria fischeri*) - Deering is located within the Spectacled eiders historical breeding range but not within their current breeding range or near their wintering/molting areas.

Wetlands: Bristol scientists will perform a wetland delineation along the proposed corridor. The wetland impacts associated with the proposed project will be calculated and submitted to the USACE in the Section 404 Permit Application and Wetland Delineation Report.

Wild and Scenic Rivers: The project will not occur in or near any wild and scenic rivers.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Field Office
101 12TH AVENUE, ROOM 110
FAIRBANKS, AK 99701
PHONE: (907)456-0203 FAX: (907)456-0208

Consultation Tracking Number: 07CAFB00-2014-SLI-0023 February 10, 2014
Project Name: West Airport Rd., Deering

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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

United States Department of Interior
Fish and Wildlife Service

Project name: West Airport Rd., Deering

Official Species List

Provided by:

Fairbanks Fish and Wildlife Field Office
101 12TH AVENUE
ROOM 110
FAIRBANKS, AK 99701
(907) 456-0203

Consultation Tracking Number: 07CAFB00-2014-SLI-0023
Project Type: Transportation
Project Description: Road cpnstruction witha bridge over Smith Creek

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-162.7479039 66.078958, -162.735407 66.0818881, -162.735407 66.0822361, -162.7245494 66.0773361, -162.7420846 66.0748475, -162.7527448 66.0678849, -162.7633878 66.0728285, -162.7479039 66.078958)))

Project Counties: Northwest Arctic, AK

Endangered Species Act Species List

There are a total of 3 threatened, endangered, or candidate species on your 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. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Polar bear *(Ursus maritimus)*

Population: Entire

Listing Status: Threatened

Spectacled eider *(Somateria fischeri)*

Population: Entire

Listing Status: Threatened

Has Critical Habitat: Final designated

Steller's Eider *(Polysticta stelleri)*

Population: AK breeding pop.

Listing Status: Threatened

Has Critical Habitat: Final designated

Critical habitats that lie within your project area

There are no critical habitats within your project area.

APPENDIX B

CONSULTATION RESPONSES AND CORRESPONDENCE

Luetters, Susan

From: Wait, Alexander J (DNR) <aj.wait@alaska.gov>
Sent: Tuesday, November 24, 2015 1:09 PM
To: Luetters, Susan
Subject: Deering Smith Creek Project

Ms. Luetters
The Department of Natural Resources, Division of Mining, Land and Water, Northern Region Lands Section received a partial application for a bridge project over Smith Creek within K008N019W19. Within the application, it indicated that the creek was no more than 45' wide between OHW. Based on this information, 11 AAC 51.035 (b), the State of Alaska Navigable Waterbodies Database, and the US Rectangular survey, it appears that Smith Creek is **not** navigable and therefore the bed of the creek was not transferred to the State of Alaska via the Submerged Lands Act, thus no DNR Easement is required. Should Smith Creek be determined to be navigable in the future, and authorization may be required at that time.

Thanks
AJ Wait
Permits and Easements Manager
DNR/DMLW, NRO Lands
451-2777

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Field Office
101 12th Avenue, Room 110
Fairbanks, Alaska 99701
April 15, 2014

Susan Luetters
Bristol Engineering Services Corporation
111 W. 16th Avenue, Third Floor
Anchorage, AK 99501

Re: POA-2014-121
West Airport Road
Deering, AK

Dear Ms. Luetters:

This letter is in response to your request for informal consultation on endangered and threatened species, and critical habitats pursuant to section 7 of the Endangered Species Act of 1973 (ESA), as amended.

THE PROPOSED ACTION

We understand the Native Village of Deering with funding from the Bureau of Indian Affairs proposes to construct a new road and bridge for improved access to the runway near Deering, Alaska (Figure 1). Gravel placement would occur on approximately 10 acres (0.04 km^2) of wetlands and new gravel infrastructure would be underlain with geotextile fabric. Fill material would be sourced from existing borrow sites along Airport Road. The proposed work is expected to take place from June through September beginning in 2015, with estimated project completion in September 2016. Specific project components include:

West Airport Road
A 1 mi (1.6 km) gravel road would be constructed from the existing Inmachuk Road beginning near the airstrip and terminating northwest of Deering at its intersection with Jeep Road (Figure 1). The road would be approximately 24 ft (7.4 m) wide with one bridge crossing at Smith Creek (Figure 2). Culverts would be placed appropriately to ensure maintenance of drainage patterns.

Smith Creek Bridge
The proposed bridge would likely be a single span/rail car bridge with earthen abutments. The bridge structure would allow a minimum of 6 ft (1.8 m) vertical clearance above the ordinary high water mark.

The Service has reviewed the proposed action to determine if it would adversely affect listed species under our jurisdiction. Three species listed as threatened under the ESA may occur in the project area: spectacled eiders (*Somateria fischeri*), Alaska-breeding Steller's eiders (*Polysticta stelleri*), and polar bears (*Ursus maritimus*).

THE ACTION AREA

The action area is located between the Deering runway and the community of Deering, Alaska near the coast of Kotzebue Sound (Figures 1 and 2).

EFFECTS OF THE ACTION ON LISTED SPECIES

Project effects on listed eiders

The Service listed the spectacled eider on May 10, 1993 (58 FR 27474) and the Alaska-breeding population of the Steller's eider as threatened on June 11, 1997 (62 FR 31748). Listed eiders may migrate through the project area, but neither species currently nests in the region. While migrating eiders may rest and feed in freshwater or terrestrial habitat within the action area, we expect disturbance to migrating eiders would be minor because these birds can respond to human presence or disturbance by moving to a perceived safe distance. Because listed eider density in the action area is extremely low and disturbance to migrating eiders would be so minor that injury or death would not occur, we expect project effects to these birds would be insignificant.

Project effects on polar bears

The Service listed the polar bear as a threatened species under the ESA on May 15, 2008 (73 FR 28212). Polar bears may occasionally pass through or den in the area, although their density is very low and encounters are expected to be rare. Transient (non-denning) bears that enter the action area could be disturbed by the presence of humans or equipment noise. However, we expect disturbances would be minor and temporary because transient bears would be able to respond to human presence or disturbance by departing the area. Furthermore, in the event that personnel encounter polar bears during project activities, they will follow the attached *Polar Bear Interaction Guidelines*.

Due to lack of preferred denning habitat, polar bears rarely den near Deering. Additionally, given that the proposed activity would be limited to snow-free months, effects of the proposed action on denning polar bears would not occur.

Because (1) the density of polar bears in the action area is very low; (2) encounters with polar bears are expected to be rare; (3) behavioral effects to transient bears would be minor and temporary; (4) mitigation measures are included in the interaction guidelines to minimize potential impacts in the event that transient polar bears are encountered; and (5) effects on denning polar bears are not anticipated, we expect effects of the proposed action on polar bears would be insignificant.

CONCLUSION

The proposed action could temporarily disturb listed eiders or polar bears in the project area; however, due to low densities of these species and minimization measures in place, we expect the effects of disturbance to be insignificant. Therefore the Service concludes that the proposed action is not likely to adversely affect listed eiders or polar bears. Preparation of a Biological Assessment or further consultation under section 7 of the ESA is not necessary at this time. Thank you for the opportunity to comment on this project. If you need further assistance, please contact Kaithryn Ott at (907) 456-0277.

Sincerely,

Ted Swem

Ted Swem
Branch Chief
Endangered Species

cc: Estrella Campellone, USACE, Anchorage

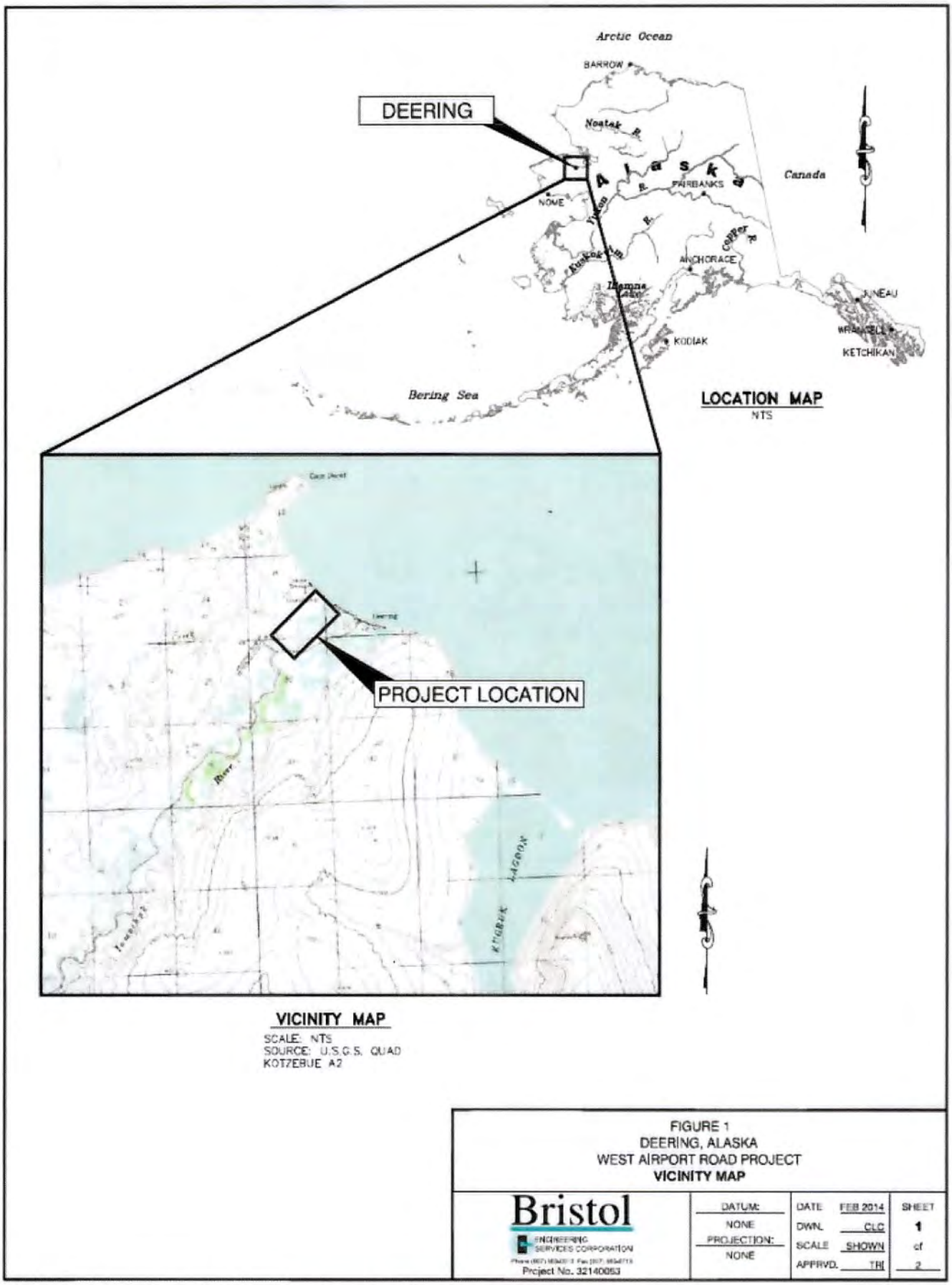


Figure 1. Location of the proposed road project northwest of Deering, Alaska.

Figure 2. Approximate route of the proposed West Airport Road near Deering, Alaska.

15. POLAR BEAR INTERACTION GUIDELINES

These Polar Bear Interaction Guidelines (Guidelines) were developed to ensure that activities are conducted in a manner that avoids conflicts between humans and polar bears. Polar bears are protected under the Marine Mammal Protection Act (MMPA), and were listed as a threatened species under the Endangered Species Act (ESA) in 2008. The MMPA and ESA both prohibit the "take" of polar bears without authorization. Take includes disturbance/harassment, as well as physical injury and killing of individuals.

In addition to sea ice, polar bears use marine waters and lands in northern Alaska for resting, feeding, denning, and seasonal movements. They are most likely to be encountered within 25 miles of the coastline, especially along barrier islands during July-October. Polar bears may also be encountered farther inland, especially females during the denning period (October-April). Polar bears may react differently to noise and human presence. The general methods for minimizing human-bear conflicts are to: 1) avoid detection and close encounters; 2) minimize attractants; and 3) recognize and respond appropriately to polar bear behaviors. These Guidelines provide information for avoiding conflicts with polar bears during air, land, or water-based activities.

Unusual sightings or questions/concerns can be referred to: Susanne Miller or Craig Perham, Marine Mammals Management Office (MMM Office), 1-800-362-5148; or to Sarah Conn (907) 456-0499 of the Fairbanks Fish & Wildlife Field Office (FFWFO).

When operating aircraft:

- If a polar bear(s) is encountered, divert flight path to a minimum of 2,000 feet above ground level or ½ mile horizontal distance away from observed bear(s) whenever possible.

When traveling on land or water:

- Avoid surprising a bear. Be vigilant—especially on barrier islands, in river drainages, along bluff habitat, near whale or other marine mammal carcasses, or in the vicinity of fresh tracks.

- Between October and April special care is needed to avoid disturbance of denning bears. If activities are to take place in that time period the MMM Office should be contacted to determine if any additional mitigation is required. In general, activities are not permitted within one mile of known den sites.

- Avoid carrying bear attractants (such as strongly scented snacks, fish, meat, or dog food) while away from camp; if you must carry attractants away from camp, store foods in air-tight containers or bags to minimize odor transmission until you return them to "bear-resistant" containers.*

- If a polar bear(s) is encountered, remain calm and avoid making sudden movements. Stay downwind if possible to avoid allowing the bear to smell you. Do not approach polar bears. Allow bears to continue what they were doing before you encountered them. Slowly leave the vicinity if you see signs that you've been detected. Be aware that safe viewing distances will vary with each bear and individual situation. Remember that the closer you are to the animal, the more likely you are to disturb it.

- If a bear detects you, observe its behavior and react appropriately. Polar bears that stop what they are doing to turn their head or sniff the air in your direction have likely become aware of your presence. These animals may exhibit various behaviors:

  - *Curious* polar bears typically move slowly, stopping frequently to sniff the air, moving their heads around to catch a scent, or holding their heads high with ears forward. They may also stand up.

  - *A threatened or agitated* polar bear may huff, snap its jaws together, stare at you (or the object of threat) and lower its head to below shoulder level, pressing its ears back and swaying from side to side. These are signals for you to begin immediate withdrawal by backing away from the bear. If this behavior is ignored, the polar bear may charge. Threatened animals may also retreat.

  - In rare instances you may encounter a *predatory* bear. It may sneak or crawl up on an object it considers prey. It may also approach in a straight line at constant speed without exhibiting curious or threatened behavior. This behavior suggests the bear is about to attack. Standing your ground, grouping together, shouting, and waving your hands may halt the bear's approach.

- If a polar bear approaches and you are in the bear's path—or between a mother and her cubs—get out of the way (without running). If the animal continues to approach, stand your ground. Gather people together in a group and/or hold a jacket over your head to look bigger. Shout or make noise to discourage the approach.

- If a single polar bear attacks, defend yourself by using any deterrents available. If the attack is by a surprised female defending her cubs, remove yourself as a threat to the cubs.

When camping:

- Avoid camping or lingering in bear high-use areas such as river drainages, coastal bluffs and barrier islands.

- Store food and other attractants in "bear-resistant" containers*. Consider the use of an electric fence as additional protection. Do not allow the bear to receive food as a reward in your camp. A food-rewarded bear is likely to become a problem bear for you or someone else in the future.

- Maintain a clean camp. Plan carefully to: minimize excess food; fly unnecessary attractants out on a regular basis (i.e. garbage, animal carcasses, excess anti-freeze or petroleum products); locate latrines at least ¼ mile from camp; and wash kitchen equipment after every use.

- If a polar bear approaches you in camp, defend your space by gathering people into a large group, making noise and waving jackets or tarps. Continue to discourage the bear until it moves off. Have people watch the surrounding area in case it returns later, keeping in mind that polar bears are known to be more active at night. Additional measures to protect your camp, such as electric fences or motion sensors can be used.

Harassment of polar bears is not permissible, unless such taking (as defined under the MMPA) is imminently necessary in defense of life, and such taking is reported to FWS within 48 hours.

*Containers must be approved and certified by the Interagency Grizzly Bear Committee as "bear-resistant." Information about certified containers can be found at http://www.igbconline.org/html/container.html.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Field Office
101 12TH AVENUE, ROOM 110
FAIRBANKS, AK 99701
PHONE: (907)456-0203 FAX: (907)456-0208

Consultation Tracking Number: 07CAFB00-2014-SLI-0023 February 10, 2014
Project Name: West Airport Rd., Deering

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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

United States Department of Interior
Fish and Wildlife Service

Project name: West Airport Rd., Deering

Official Species List

Provided by:

Fairbanks Fish and Wildlife Field Office
101 12TH AVENUE
ROOM 110
FAIRBANKS, AK 99701
(907) 456-0203

Consultation Tracking Number: 07CAFB00-2014-SLI-0023
Project Type: Transportation
Project Description: Road cpnstruction witha bridge over Smith Creek

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-162.7479039 66.078958, -162.735407 66.0818881, -162.735407 66.0822361, -162.7245494 66.0773361, -162.7420846 66.0748475, -162.7527448 66.0678849, -162.7633878 66.0728285, -162.7479039 66.078958)))

Project Counties: Northwest Arctic, AK

Endangered Species Act Species List

There are a total of 3 threatened, endangered, or candidate species on your 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. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Polar bear *(Ursus maritimus)*

Population: Entire

Listing Status: Threatened

Spectacled eider *(Somateria fischeri)*

Population: Entire

Listing Status: Threatened

Has Critical Habitat: Final designated

Steller's Eider *(Polysticta stelleri)*

Population: AK breeding pop.

Listing Status: Threatened

Has Critical Habitat: Final designated

Critical habitats that lie within your project area

There are no critical habitats within your project area.

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, ALASKA 99506-0898

APR 14 2014

Regulatory Division
POA-2014-121

U.S. Fish and Wildlife Service
Fairbanks Fish and Wildlife Field Office
Attention: Mr. Ted Swem
101 12th Avenue, Room 110
Fairbanks, AK 99701

Dear Mr. Swem:

This is in regard to the Department of the Army permit application for Bristol Engineering Services Corporation, which proposes the construction of a new 24-foot wide by 1-mile long road and a single span/rail-car bridge with earthen abutments crossing over Smith Creek. The proposed project purpose would be to provide an evacuation route to residents of the Village of Deering and would require placement of fill in approximately 10 acres of wetlands. The proposed project is located within Section 19 and 30, T. 8 N., R. 19 W., Kateel River Meridian; USGS Quad Kotzebue A-2; Latitude 66.0700° N., Longitude -162.7100° W.; Cape Nome Recording District, at approximately 57 miles Southwest of the City of Kotzebue, Alaska. It has been assigned number POA-2014-121, Kotzebue Sound, which should be referred to in all correspondence with us.

The U.S. Army Corps of Engineers (Corps) believes consultation under section 7 of the Endangered Species Act is required for species under your jurisdiction. We hereby designate Ms. Susan Luetters, Sr. Environmental Scientist for Bristol Engineering Services Corporation, as our non-Federal representative to conduct section 7 consultation. Ms. Luetters may be reached via email at sluetters@bristol-companies.com and by phone at (907) 743-9316. The Corps remains responsible for the content of the assessment and for the findings of effect.

Please contact me at Michiel.E.Holley@usace.army.mil, by phone at (907) 753-2777, or Estrella Campellone at Estrella.f.campellone@usace.army.mil, by phone at (907) 753-2518, if you have any questions. For additional information about our Regulatory Program, visit our web site at www.poa.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Mike Holley

Mike Holley
North Section Chief

10.10.14 3130-1K BIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGION

Branch of Regional Archeology
3601 C Street, Suite 1200
Anchorage, Alaska 99503
(907) 271-4003

6 October 2014

Judith E. Bittner
State Historic Preservation Officer
DNR/Division of Parks and Outdoor Recreation
Office of History and Archaeology
550 West 7th Ave., Suite 1310
Anchorage, Alaska 99501

Dear Ms. Bittner,

Enclosed you will find a copy of *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska.* This report was prepared by Robert L. Meinhardt, Amy Ramierz, Annalisa Heppner, and Phillip T. Ashlock II of True North Sustainable Development Solutions (TNSDS). The Native Village of Deering, the Tribe, has received funds from the Bureau of Indian Affairs' Indian Reservation Roads Program to design an evacuation road from the village center to the airport for flooding, as well as for the movement of heavy machinery in and out of the village. In turn, the Tribe has contracted with Bristol Engineering Services Corporation (BESC) to develop the final design for the West Airport Road Project (BIA Project Number E04117C4). BESC has subcontracted with TNSDS to perform a cultural resource investigation within the proposed APE. The proposed APE consists of a 16 to 20 foot-wide corridor that extends approximately one mile in length for the road itself. Gravel for the project will be sourced locally from two borrow pits; both sources were also included in the APE, and were inventoried as part of this project.

Regional Archeology has reviewed the accompanying cultural resource survey report and finds there are no historic properties within the APE of the project. An on-the-ground cultural resources survey, including subsurface testing, of the APE was conducted. No cultural resources were identified within the project area. If you have any questions regarding this document, please contact me at 271-4003.

No Historic Properties Affected AHP
Alaska State Historic Preservation Officer
Date: 10.10.14 File No.: 3130-1KBIA
Please review: 36 CFR 800.13 / A.S. 41.35.070(d)

Sincerely,

Rita L. Mueglue

ACTING FOR Ricky Hoff
Regional Archeologist

Attachments:
1) Office of History and Archaeology Cover Sheet
2) *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska (Meinhardt, et al. 2013)*

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, ALASKA 99506-0898

APR 29 2015

Regulatory Division
POA-2014-121

Bristol Engineering Services Corporation
Attention: Ms. Susan Luetters
111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501-5109

Dear Ms. Luetters:

This is in response to your March 13, 2015, request on behalf of the Native Village of Deering for a Department of the Army (DA) jurisdictional determination for the West Airport Road Project. Your request has been assigned US Army Corps of Engineers (USACE) file number POA-2014-121, the same number established previously with the scoping process you initiated.

The property and project are located within Sections 19 and 30, T. 8 N., R. 19 W., Kateel River Meridian; US Geological Survey Quadrangle Map Alaska Kotzebue A-2; approximate Latitude 66.0734° and Longitude -162.7500° NAD 83 decimal degrees; at Deering, Alaska.

Section 404 of the Clean Water Act requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). The USACE defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Based on our review of the information you provided, including your Wetland Delineation/Preliminary Jurisdictional Determination Report, West Airport Road, Deering Alaska, Bristol Project No. 32140053, July 2014 (Wetland Delineation Report) and our existing file records, we have determined the proposed project would involve a discharge of dredged and/or fill material into waters of the US under our regulatory jurisdiction.

Please review and sign the enclosed Preliminary Jurisdictional Determination (PJD) Form and return it to our office. This PJD is not appealable. You may request and obtain an Approved Jurisdictional Determination (AJD) for this proposal at any time which can be appealed. If you intend to request an AJD, do not begin work until one is obtained.

A review of our file records, including your Wetland Delineation Report, indicates the proposed road route may not be the least environmentally damaging practicable alternative available for the project. We look forward to reviewing the environmental assessment you are preparing for the Bureau of Indian Affairs to aid in our eventual permit application evaluation process.

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Please contact me via email at harry.a.baij@usace.army.mil, by mail at the address above, by phone at (907) 753-2784, or toll free from within Alaska at (800) 478-2712, if you have questions or to request paper copies of the regional and/or general conditions. For more information about the Regulatory Program, please visit our website at www.poa.usace.army.mil/Missions/Regulatory.

Sincerely,

H. Baij

Harry A. Baij Jr.
Project Manager
North Section

Enclosure

APPENDIX C

PERMITS

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Fish and Game

DIVISION OF HABITAT
Fairbanks Regional Office

1300 College Road
Fairbanks, Alaska 99701-1551
Main: 907.459.7289
Fax: 907.459-7303

FISH HABITAT PERMIT

FH16-III-0022

ISSUED: January 28, 2016
EXPIRES: October 31, 2021

Kevin Moto, President
Native Village of Deering
P.O. Box 36089
Deering, AK 99736

Dear Mr. Moto:

RE: Water Withdrawal for Dust Suppression and Compaction – West Airport Road Project
Inmachuk River (Stream No. 331-00-10750)
Section 30, T8N R19W, KRM; Kotzebue A-2 Quad

Pursuant to AS 16.05.871(b), the Alaska Department of Fish and Game (ADF&G), Division of Habitat, has reviewed your proposal to withdraw water from the Inmachuk River at the referenced location. Project information was taken from the fish habitat permit application received December 2, 2015 and from the A2015-139 temporary water use authorization application, received by email on January 25, 2016.

Project Description

The Native Village of Deering is constructing West Airport Road, a new access road between the airport and the community. Water will be needed to achieve the desired compaction during construction and for dust suppression. Portable pumps with intake sizes from two inches to six inches will be used to pump between 180 and 1700 gallons of water per minute from the Inmachuk River. Up to 10,000 gallons per day and 200,000 gallons per year will be withdrawn.

Anadromous Fish Act

The Inmachuk River has been specified as being important for the spawning, rearing, or migration of anadromous fishes pursuant to AS 16.05.871(a). The river provides spawning and migration habitat for chum salmon, pink salmon, and Dolly Varden, as well as resident fish species including Arctic grayling. Your project as proposed should not have adverse effects on anadromous fish or their habitat and should not obstruct the free passage of fish.

In accordance with AS 16.05.871(d), project approval is hereby given subject to the project description above with the following stipulation:

1) The pump intakes shall be centered in a screened enclosure to exclude fish. The effective screen opening may not exceed ¼ inch. To reduce fish impingement on the screened surfaces, water velocity at the screen surface may not exceed 0.5 feet per second when the pump is operating. When possible, position the intake in the vertical middle third of the water column.

You are responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved project. For any activity that significantly deviates from the approved plan, you shall notify the Division of Habitat and obtain written approval in the form of a permit amendment before beginning the activity. Any action that increases the project's overall scope or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this permit will be deemed a significant deviation from the approved plan. The final determination as to the significance of any deviation and the need for a permit amendment is the responsibility of the Division of Habitat. Therefore, it is recommended you consult the Division of Habitat immediately when a deviation from the approved plan is being considered.

For the purpose of inspecting or monitoring compliance with any condition of this permit, you shall give an authorized representative of the state free and unobstructed access, at safe and reasonable times, to the permit site. You shall furnish whatever assistance and information as the authorized representative reasonably requires for monitoring and inspection purposes.

This letter constitutes a permit issued under the authority of AS 16.05.871 and must be retained on site during project activities. Please be advised that this determination applies only to activities regulated by the Division of Habitat; other agencies also may have jurisdiction under their respective authorities. This determination does not relieve you of your responsibility to secure other permits; state, federal, or local. You are still required to comply with all other applicable laws.

In addition to the penalties provided by law, this permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. The department reserves the right to require mitigation measures to correct disruption to fish and game created by the project and which was a direct result of the failure to comply with this permit or any applicable law.

You shall indemnify, save harmless, and defend the department, its agents, and its employees from any and all claims, actions, or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or your performance under this permit. However, this

provision has no effect if, and only if, the sole proximate cause of the injury is the department's negligence.

This permit decision may be appealed in accordance with the provisions of AS 44.62.330-630.

Any questions or concerns about this permit may be directed to Habitat Biologist Jim Durst at (907) 459-7254 or emailed to james.durst@alaska.gov.

Sincerely,

Sam Cotten, Commissioner

BY: Audra L. J. Brase, Regional Supervisor
Division of Habitat
Alaska Department of Fish and Game

ecc:

Jim Menard, ADF&G CF, Nome
Al Ott, ADF&G HAB, Fairbanks
Brendan Scanlon, ADF&G SF, Fairbanks
Scott Ayers, ADF&G SF, Anchorage
Tim Pilon, ADEC, Fairbanks
Lesli Schick, ADNR Water, Anchorage
COE Regulatory, Anchorage
NOAA Fisheries, Anchorage
Bob Henszey, USFWS, Fairbanks
Susan Luetters, Bristol Engineering Svcs, Anchorage

AB/jdd

ALASKA DEPARTMENT OF NATURAL RESOURCES
Division of Mining, Land, and Water
Water Resources Section
550 West 7th Avenue, Suite 1020, Anchorage, AK 99501-3562

TEMPORARY WATER USE AUTHORIZATION
TWUA A2015-139

Pursuant to AS 46.15, as amended and the rules and regulations promulgated thereunder, permission is hereby granted to the Native Village of Deering (hereinafter authorization holder), PO Box 36089, Kotzebue, AK 99736, and its contractors, to withdraw up to **10,000 gallons of water per day (subject to a combined seasonal maximum of 200,000 gallons of water) from May 1, 2016 through October 31, 2021 from the below described sources of water.** Water withdrawals are for dust control and compaction associated with the West Airport Road Project in Deering.

SOURCES OF WATER:

Inmachuk River in Section 30 of Township 8 North, Range 19 West, Kateel River Meridian.

STRUCTURES TO BE CONSTRUCTED AND USED:

Certified water intake structure, water trucks, pump with a 1,700 gpm maximum output, hose and/or pipe and other water removal, distribution and discharge equipment.

Changes in the natural state of water are to be made as stated herein and for the purposes indicated.

The authorization holder shall comply with the following conditions:

CONDITIONS:

1. This authorization does not authorize the authorization holder to enter upon any lands until proper rights-of-way, easements, or permission documents, from the appropriate landowner, have been obtained.

2. Follow acceptable engineering standards in exercising the privilege granted herein.

3. Comply with all applicable laws, and any rules and/or regulations issued thereunder.

4. Except for claims or losses arising from negligence of the State, defend and indemnify the State, the State's agents, and the State's employees against and hold each of them harmless from any and all claims, demands, suits, loss, liability, and expense, including attorney fees, for injury to or death of persons and damages to or loss of property arising out of or connected with the exercise of the privileges covered by this authorization.

5. Notify the Water Resources Section upon change of address.

6. The authorization holder is responsible for obtaining and complying with other permits/approvals (state, federal, or local) that may be required prior to beginning activities pursuant to this

authorization including but not limited to fish habitat permits from the Alaska Department of Fish and Game (ADF&G), Habitat Division and any adjacent landowner or agency.

7. The authorization holder shall allow an authorized representative of the Water Resources Section to inspect, at reasonable times, any facilities, equipment, practices, or operators regulated or required under this authorization.

8. Failure to respond to a request for additional information during the term of the authorization may result in the termination of this authorization.

9. This authorization, or a copy thereof, shall be kept at the site of the authorized project described herein. The authorization holder is responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved project, and shall ensure that workers are familiar with the requirements and conditions of this authorization. For any activity that significantly deviates from the approved project during its siting, construction, or operation, the authorization holder is required to contact the Water Resources Section and obtain approval before beginning the activity.

10. The Water Resources Section may modify this authorization to include different limitations, expand monitoring requirements, evaluate impacts or require restoration at the site.

11. Any false statements or representations, in any application, record, report, plan, or other document filed or required to be maintained under this authorization, may result in the termination of this authorization.

12. Pursuant to 11 AAC 93.220(f), this authorization may be suspended or terminated by the Department of Natural Resources to protect the water rights of other persons or the public interest.

13. Monitor water withdrawals and/or diversions for each day of actual use for each authorized water source and when withdrawals and/or diversions for each authorized water source reached 90% of the authorized limit for that water source submit this information to this office prior to the initiation of any further withdrawals and/or diversions of the respective water source.

14. Operations shall be conducted in such a way as to prevent any petroleum products or other hazardous substances from contaminating surface or ground water. Pumps and equipment will not be fueled or serviced within 100 feet of a pond, lake, stream, or river unless they are situated within a catch basin designed to contain any spills. Vehicles will not be fueled or serviced within 100 feet of a pond, lake, stream or river. In case of accidental spills, absorbent pads shall be readily available at the water collection point. All spills must be reported to the Alaska Department of Environmental Conservation and the Alaska Department of Natural Resources.

15. In-water activity will be limited to placement and removal of the intake structure only. No other in-water activities will occur.

16. Any water intake structure in fish bearing waters, including a screened enclosure, well-point, sump, or infiltration gallery, must be designed, operated and maintained to prevent fish entrapment, entrainment or injury at the maximum diversion rate, unless specifically exempted by the ADF&G Habitat Division.

17. Adequate flow and water levels, as determined by ADF&G Habitat Division, must remain to support indigenous aquatic life and provide for the efficient passage and movement of fish. Issuance of this authorization does not give the authorization holder the right to block or dam a water course.

18. There shall be no wheeled, tracked, excavating, other machinery or equipment (with the exception of the non-motorized screened intake and ice auger) operated in open water below ordinary high water line.

19. All equipment used at or adjacent to water bodies must be clean and free from contamination and invasive species (terrestrial and aquatic) at all times to prevent the introduction of contamination and invasive species to the water body.

20. Any suction hose used should be in water of sufficient depth so that sediments are not disturbed during any water extraction process.

21. Water bodies shall not be altered to facilitate water withdrawal or disturbed in any way. If banks, shores, or beds are inadvertently disturbed, excavated, compacted, or filled by activities attributable to this project, they shall be immediately stabilized to prevent erosion and resultant sedimentation of water body which could occur both during and after operations. Any disturbed areas shall be recontoured and revegetated with native vegetation.

22. Water intake structure must be enclosed and centered within a screened box or cylinder with a maximum screen-mesh size of 0.25 inches or smaller screen mesh size. To reduce fish impingement at the screen/water interface, water velocity may not exceed 0.5 feet per second rate specified by the Alaska Department of Fish and Game when the pump is operating.

23. The authorization holder shall inspect the intake screen for damage (torn screen, crushed screen, screen separated from intake ends, etc.) after each use and prior to each deployment. Any damage observed must be repaired prior to use of the structure. The structure must always conform to the original design specifications while in use.

24. Water discharge (including runoff) shall not be discharged at a rate or location resulting in sedimentation, erosion, or other disruptions to the bed or banks of water bodies, causing water quality degradation.

25. Per 11 AAC 05.010. (a)(8)(M), an annual administrative service fee shall be assessed on this authorization.

This Temporary Water Use Authorization is issued pursuant to 11 AAC 93.220. No water right or priority is established by a temporary water use authorization issued pursuant to 11 AAC 93.220. Water so used is subject to appropriation by others (11 AAC 93.210 (b)).

Pursuant to 11 AAC 93.210 (b), authorized temporary water use is subject to amendment, modification, or revocation by the Department of Natural Resources if the Department of Natural Resources determines that amendment, modification, or revocation is necessary to supply water to lawful appropriators of record or to protect the public interest.

This authorization shall expire on October 31, 2021.

Date issued: February 29, 2016

Approved: Henry CB Cook

Manager, South Central Region, Water Resources Section
ADNR/DMLW

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGION

Branch of Regional Archeology
3601 C Street, Suite 1100
Anchorage, Alaska 99503
(907) 271-4003

TO: NATIVE VILLAGE OF DEERING
ALVIN IYATUNGUK, SR., PRESIDENT
PO BOX 36089
DEERING, ALASKA 99736

UNDERTAKING: **West Airport Road, Deering, Alaska**

FINDINGS OF SECTION 106 REVIEW: No Historic Properties Affected

RECOMMENDATION: Proceed with the **West Airport Road, Deering, Alaska Project.**

IDENTIFICATION EFFORTS: Identification included a review of records and previous archeological surveys in the area conducted by Robert L. Meinhardt, et al. of True North Sustainable Development Solutions. The archeological review and investigation report, *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska*, was prepared by Robert L. Meinhardt, Amy Ramirez, Annalisa Heppner, and Phillip T. Ashlock II in September 2013.

AREA OF POTENTIAL EFFECT (APE): The project involves the construction of a new road and bridge, which will serve as the primary evacuation route from the village to the airport during seasonal and tidal flooding, when the existing road is typically washed out. The new road will be between 16 and 20 feet wide, and will include a bridge over Smith Creek with a minimum load capacity of 50,000 pounds. Gravel for the road will be taken from existing gravel borrows along the existing Deering Airport Road. Additional details of the APE are described in the above noted cultural resource survey report.

AHRS SITES: No archeological resources were identified within the APE.

CONSULTED PARTIES: Native Village of Deering
Alaska State Historic Preservation Office (SHPO)
Bureau of Indian Affairs

MANAGEMENT RECOMMENDATIONS: The Bureau of Indian Affairs is issuing a finding of "No Historic Properties Affected" for the proposed **West Airport Road, Deering, Alaska.** These findings are based on the results of a cultural resources inventory, including a pedestrian survey of the subject area by cultural resource professionals from True North Sustainable Development Solutions, under the supervision of Archeologist and Architectural Historian Robert Meinhardt. The report of the investigation (*2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska)*, was prepared by Robert L. Meinhardt, Amy Ramirez, Annalisa Heppner, and Phillip T. Ashlock II in September 2013. In compliance with Section 106 of the National Historic Preservation Act (16 USC 470*f*) of 1966 and 36 CFR §800, the Bureau of Indian Affairs is recommending the **West Airport Road, Deering, Alaska Project** proceed. The Alaska State Historic Preservation Officer's concurrence for no historic properties is on file.

There were no archeological sites identified within the APE of the project and no archeological monitoring will be required. The finding of no historic properties affected only applies to the current project. Any additional work outside of the current project's footprint may require additional section 106 review. In accordance with 36 CFR §800.4 any changes to the project design may require further section 106 review.

The construction contract will include the following language:

"NATIVE VILLAGE OF DEERING will comply with the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470*f*), plus the Native American Graves Protection and Repatriation Act of 1990 (25 U. S. C. 3001-3013), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm), and all implementing regulations."

"If any previously unknown archeological or historic remains are discovered, either during the life of this revocable use permit, or in the course of associated activities on this property, the NATIVE VILLAGE OF DEERING shall protect them from disturbance pending further recommendations from the BIA Regional Archeologist (36 CFR §800.13[b])."

"If any previously unknown human remains or associated cultural items are discovered either during the life of this revocable use permit (lease), or in the course of associated activities on this property, the NATIVE VILLAGE OF DEERING shall protect them from disturbance pending further recommendations from the Regional Archeologist. Any person who knows of the discovery of human remains or associated cultural items must provide notification by telephone, and follow up in writing, to the BIA Regional Archeologist (43 CFR §10.4)."

15 October 2014
Ricky Hoff Date
Regional Archeologist

cc: Susan Leutters, Bristol Engineering Services Corporation
Gregory Smith, Civil Engineer, Transportation, Bureau of Indian Affairs, Alaska Region

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, AK 99506-0898

OCT 04 2016

Regulatory Division
POA-2014-121

The Native Village of Deering
Attention: Mr. Kevin Moto
P. O. Box 36089
Deering, Alaska 99736

Dear Mr. Moto:

Enclosed is the signed Department of the Army permit, file number POA-2014-121, Smith Creek, which authorizes the construction of a new evacuation route out of Deering. The project site is located within Sections 19 & 30, T. 8 N., R. 19 W., Kateel River Meridian; USGS Quad Map Kotzebue A-2; Latitude 66.0743° N., Longitude 162.7463° W.; near Deering, Alaska. Also enclosed is a Notice of Authorization which should be posted in a prominent location near the authorized work.

If changes to the plans or location of the work are necessary for any reason, plans must be submitted to us immediately. Federal law requires approval of any changes before construction begins.

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Please contact me via email at mary.r.romero@usace.army.mil, by mail at the address above, by phone at (907) 753-2773, or toll free from within Alaska at (800) 478-2712, if you have questions. For more information about the Regulatory Program, please visit our website at http://www.poa.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Mary Romero
Project Manager

Enclosures

This notice of authorization must be conspicuously displayed at the site of work.

United States Army Corps of Engineers
SMITH CREEK

A permit to: CONSTRUCTION OF A NEW EVACUATION ROUTE OUT OF DEERING

at: SECTIONS 19 & 30, T. 8 N., R. 19 W., KATEEL RIVER MERIDIAN; USGS QUAD MAP KOTZEBUE A-2; LATITUDE 66.0743 N., LONGITUDE 162.7463 W.

has been issued to: NATIVE VILLAGE OF DEERING

on: OCT 0 4 2016 **and expires on:** OCT 0 4 2021

Address of Permittee:

Permit Number:

POA-2014-121

FOR: ***District Commander***
MARY ROMERO
PROJECT MANAGER
REGULATORY DIVISION

ENG FORM 4336, Jul 81 (33 CFR 320-330) EDITION OF JUL 70 MAY BE USED **(Proponent: CECW-O)**

DEPARTMENT OF THE ARMY PERMIT

Permittee: Native Village of Deering

Permit No.: POA-2014-121, Smith Creek

Issuing Office: U.S. Army Engineer District, Alaska

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The placement of 25,800 cubic yards (cy) of fill material and 2,300 cy of aggregate surface course material into 6.86 acres of jurisdictional wetlands to create a 5,280' x 50' road to the Deering Airport, the road will include a bridge over Smith Creek (avoiding 0.019 acre of R2UB waters) and will provide an evacuation route from the community often stranded when seasonal flooding overflows or washes out the existing road to the airport. The bridge will be a 65' single span structure, with earthen abutments and 125' approaches on either side. The bridge will allow a minimum of 9' of vertical clearance from ordinary high water and a 42.6' navigational opening.
Grubbing of the project will take place either before May 20th or after July 20th in order to not disturb potential migratory bird nests. Placement of fill is expected to take place from June through September 2016 with completion of the project in 2017.

All work will be performed in accordance with the attached plan, sheets **1-14,** dated May17, 2016.

Project Location: The project is located within Sections 19 & 30, T. 8 N., R. 19 W., Kateel River Meridian; USGS Quad Map Kotzebue A-2; Latitude 66.0743° N., Longitude 162.7463° W.; near Deering, Alaska.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **August 31, 2021**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. Prior to initiation of construction activities within waters of the U.S. the permittee shall develop and submit a Mitigation Plan for Corps approval to this office.

2. The Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the authorized work area as detailed on sheets #7-12 of 14. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion.

3. The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete blocks with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

4. The permittee shall comply with the United States Fish and Wildlife Service Conditions dated June 9, 2016, and provided as an attachment to this permit. The permittee shall comply with the Federal Endangered Species Act, you must implement all of the mitigating measures identified in the enclosed U.S. Fish and Wildlife Service letter of concurrence (Number FWS POA-2014-121, Smith Creek, dated June 9, 2016) including those ascribed to the Corps therein. If you are unable to implement any of these measures, you must immediately notify the Corps, the U.S. Fish and Wildlife Office so we may consult as appropriate, prior to initiating the work, in accordance with Federal law.

5. Within 10 days from the date of initiating the work authorized by this permit, the Permittee shall provide a written notification of the date of commencement of authorized work to the Corps.

6. Within 60 days of completion of the work authorized by this permit, the Permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification By Professional Engineer" form to the Corps. The as-built drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint, as shown on the permit drawings, with transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets or PDF. The plan view drawing should show all "earth disturbance," including wetland impacts and water management structures.

b. A list of any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the attached "As-Built Certification By Professional Engineer" form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or "As-Built Certification By Professional Engineer" form does not constitute approval of any deviations by the Corps.

c. Include the Department of the Army permit number on all sheets submitted.

7. All contractors involved in this permitted activity shall be provided copies of this permit in its entirety. A copy shall remain on site at all times during construction.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a revaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Ken Hott President — 9.8.16

(PERMITTEE) AND TITLE — (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

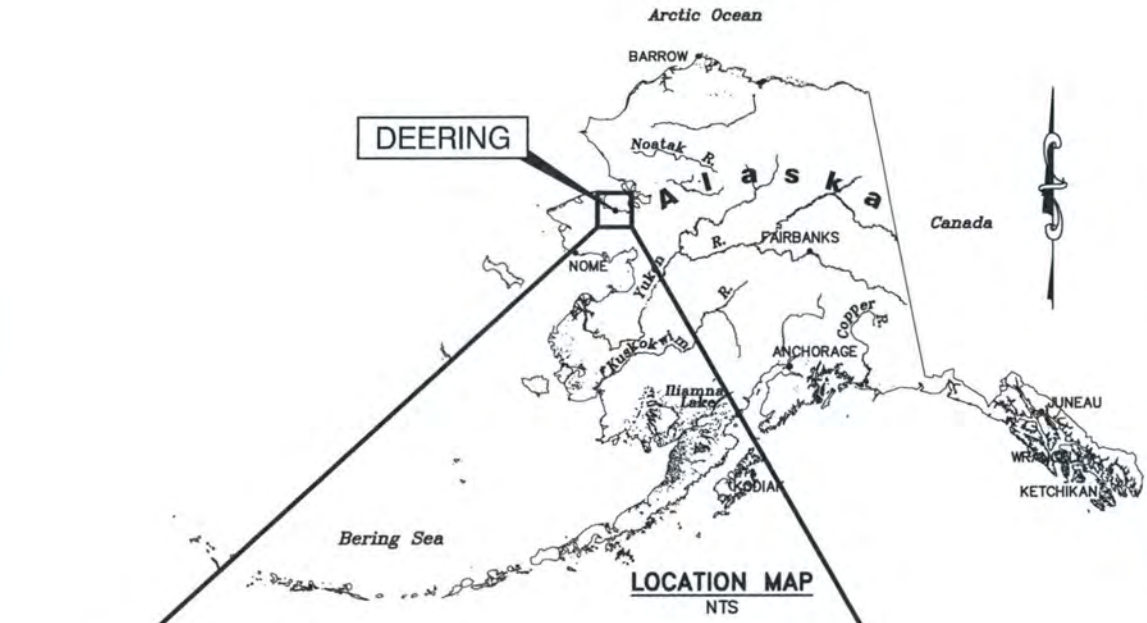
Mary Romero — 3 October 2016

FOR (DISTRICT COMMANDER) — (DATE)
Colonel Michael S. Brooks
Mary Romero, Project Manager
North Branch, Regulatory Division

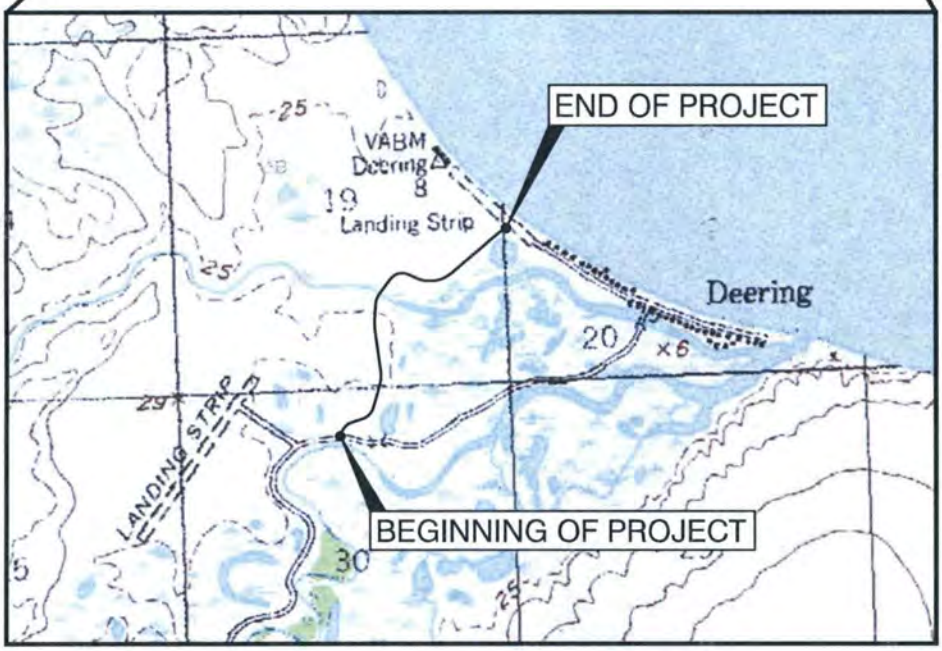
When the structures or work authorized by this permit are still in existence at the time the property is transferred the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions have the transferee sign and date below.

(TRANSFEREE) — (DATE)

VICINITY MAP



LOCATION MAP
NTS

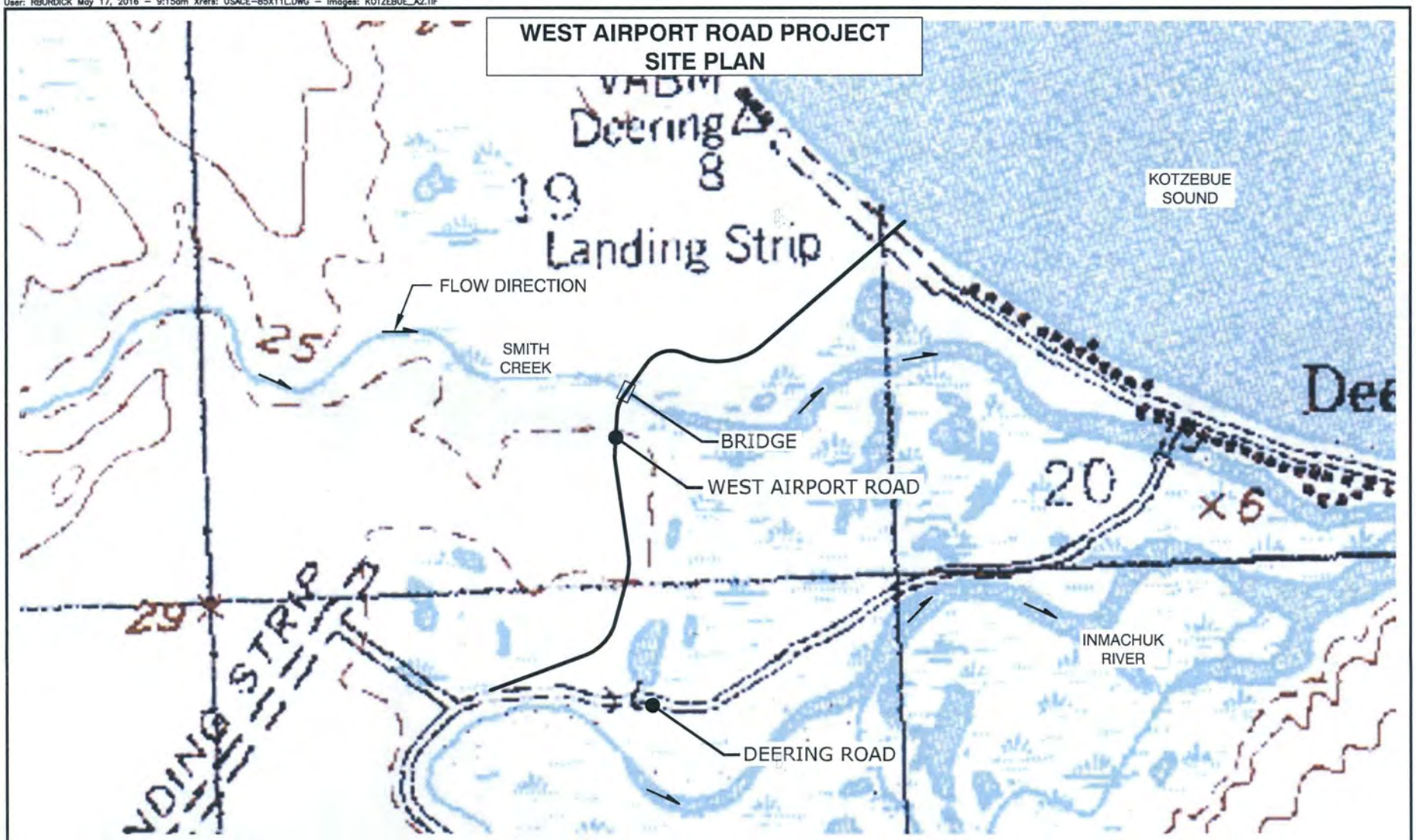


VICINITY MAP
SCALE: NTS
SOURCE: U.S.G.S. QUAD
KOTZEBUE A2

Deering, Alaska
Directions to site: From the airport take Deering Road east for 0.1 miles. The project begins on the north side of Deering Road.

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 1 of 14 Date: 05 /17 /2016

WEST AIRPORT ROAD PROJECT SITE PLAN



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File No. : POA-2014-121
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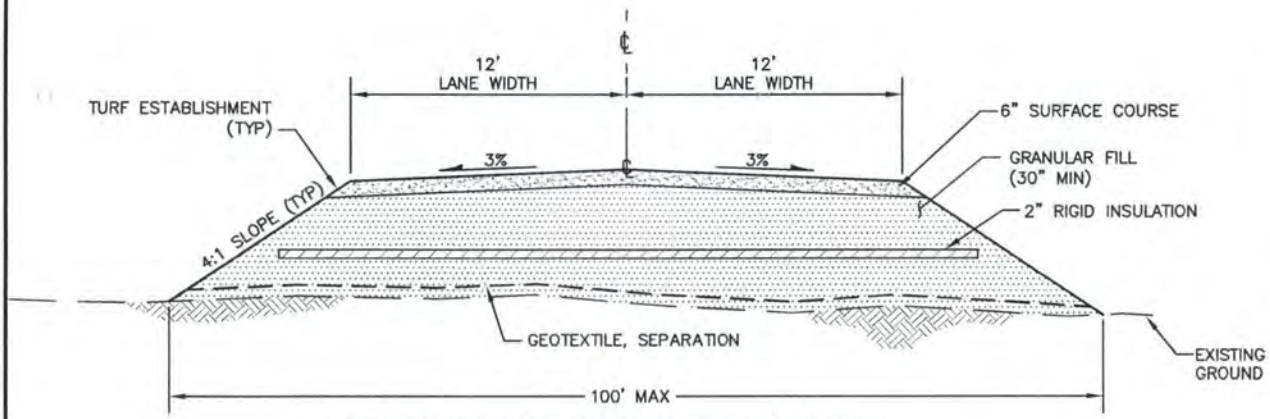
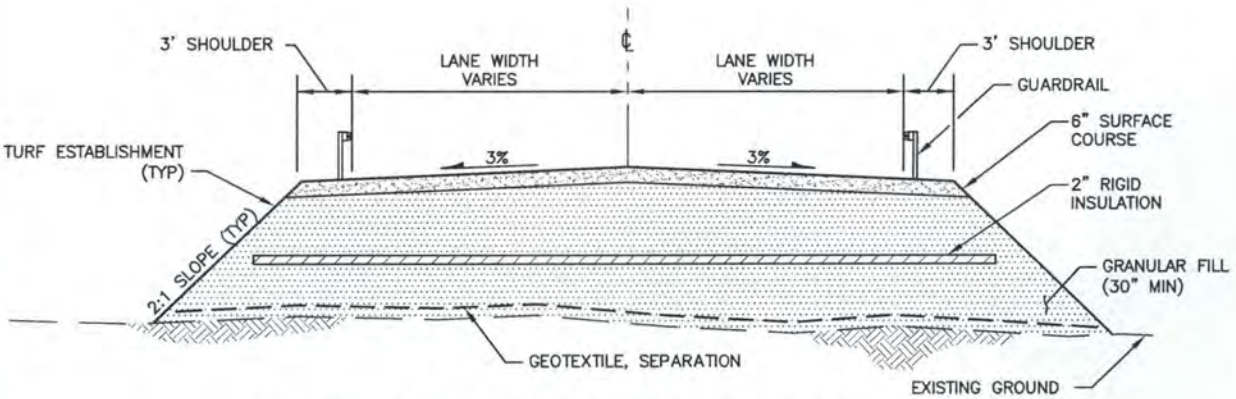
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 2 of 14 Date: 05 /17 /2016

WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS



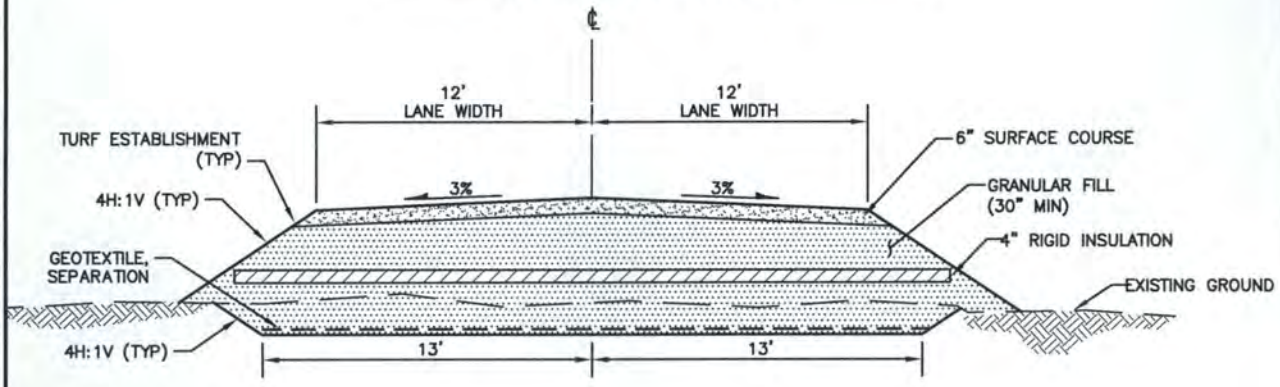
1 — **TWO-LANE CROWN FILL SECTION**
SCALE: NTS



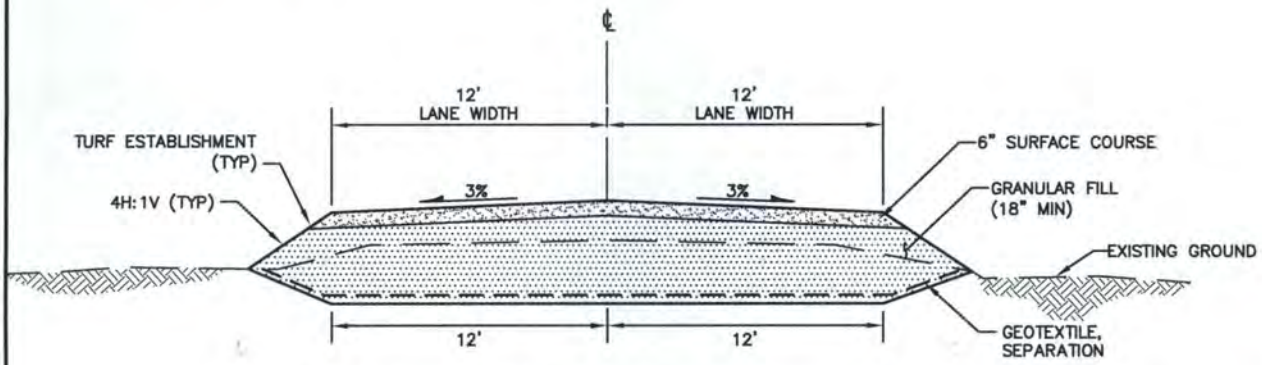
2 — **TWO-LANE CROWN SECTION WITH GUARDRAIL**
SCALE: NTS

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 3 of 14 Date: 05 /17 /2016

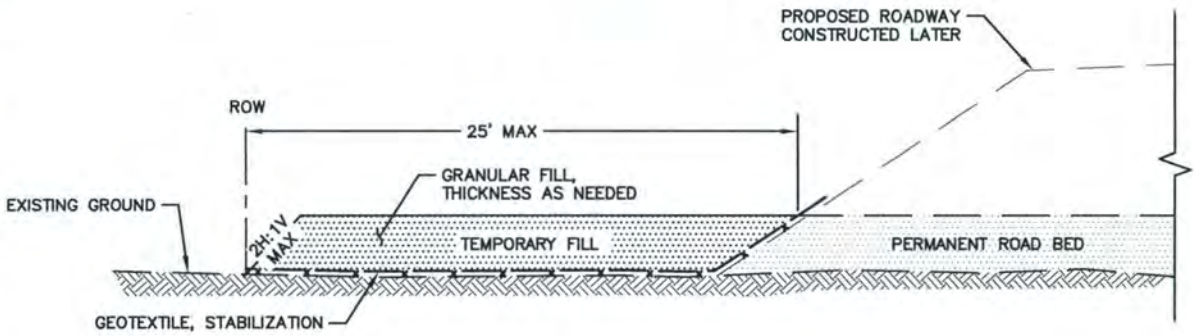
WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS



1 — **TWO-LANE CROWN FILL SECTION WITH EXCAVATION**
SCALE: NTS



2 — **TWO-LANE CROWN ROAD RECONSTRUCTION**
SCALE: NTS

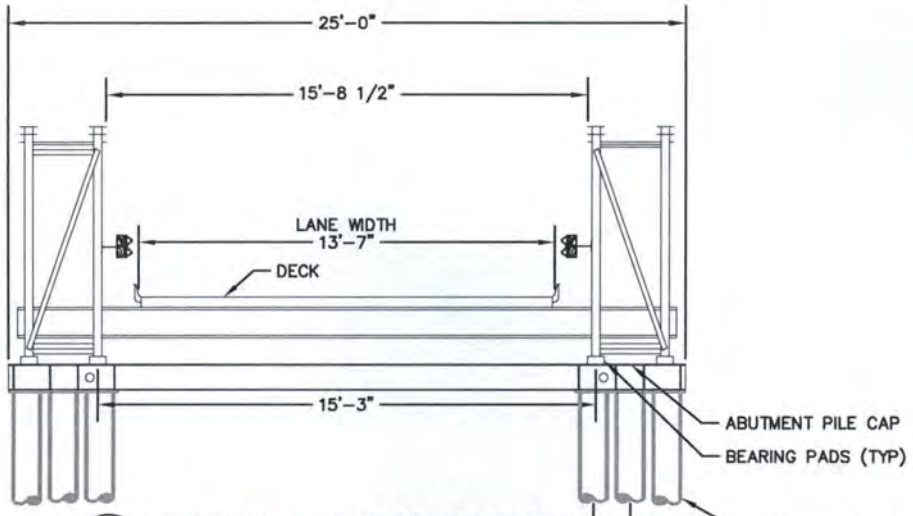


3 — **TEMPORARY CONSTRUCTION PAD**
SCALE: NTS

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 4 of 14 Date: 05 /17 /2016

Drawing: K:_JOBS\32140053 WEST AIRPORT RD\ACAD-ENV\RD\USACE\32140053_FIG3-5_CDE.DWG - Layout: FIG4
User: RBURDICK May 17, 2016 - 9:09am Xrefs: USACE-85X11P.DWG - Images: None

WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS



1 — **VEHICULAR BRIDGE SECTION**
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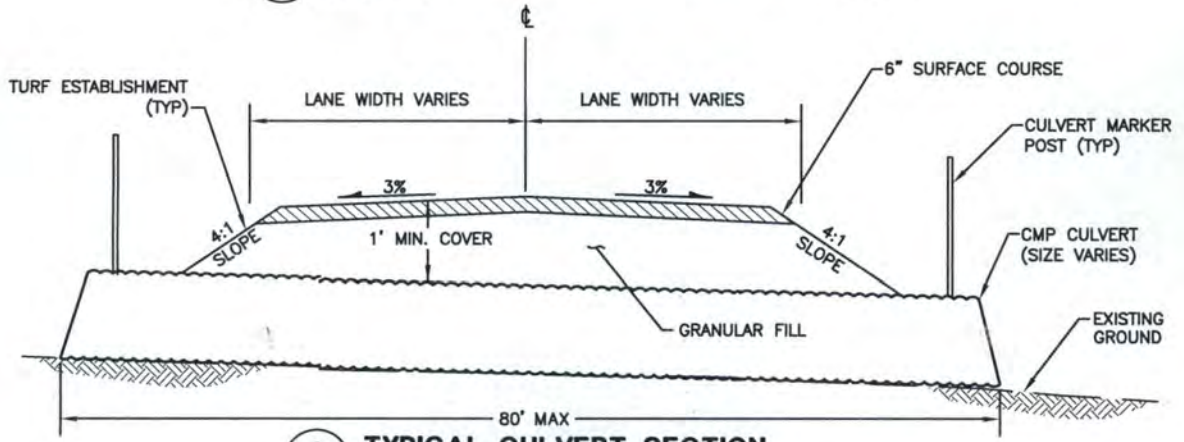
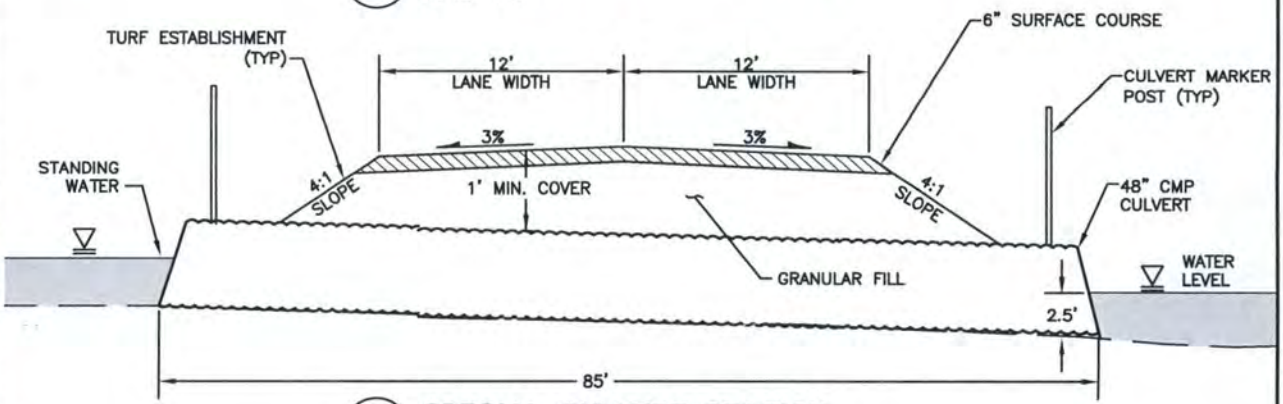


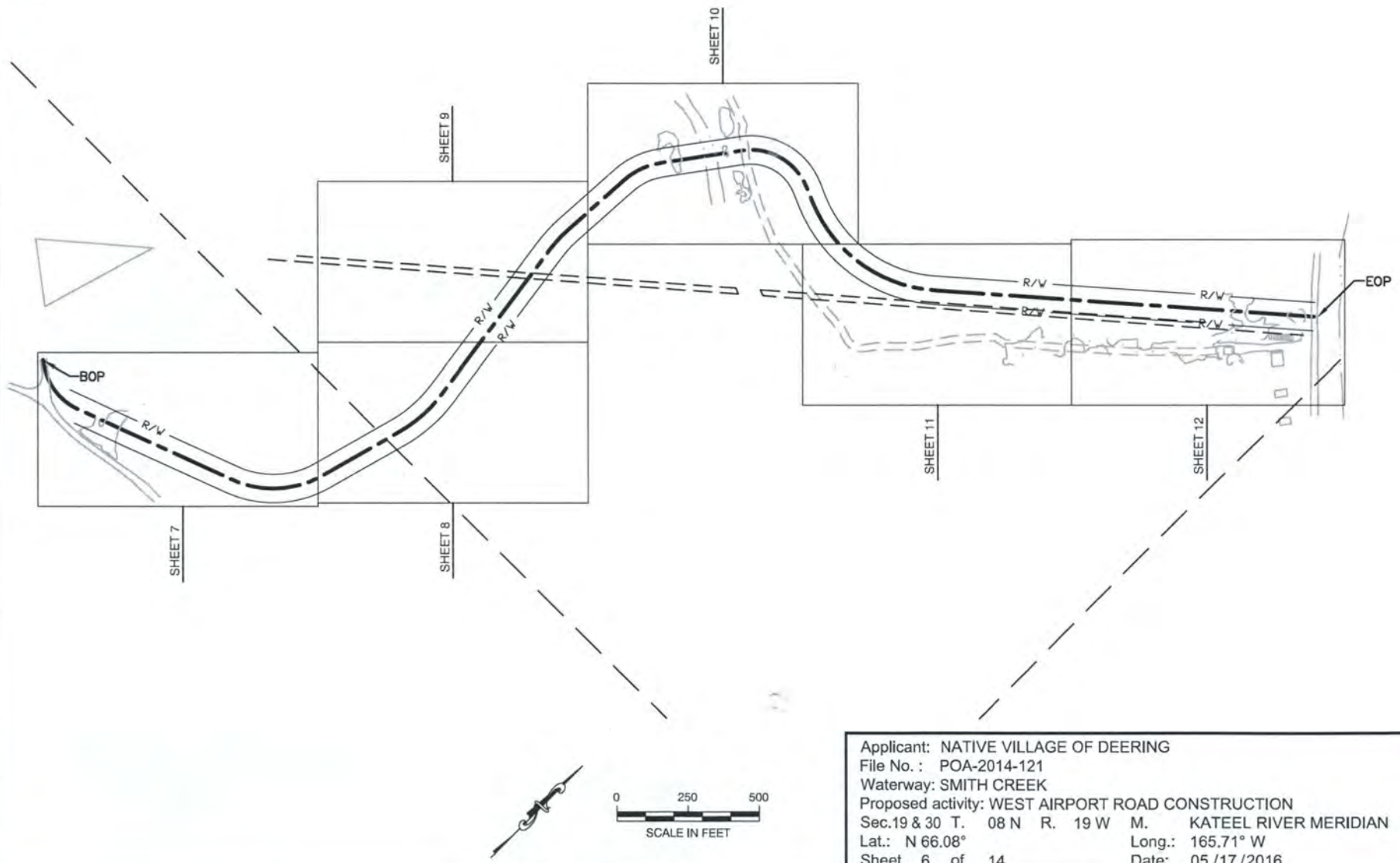
2 — **TYPICAL CULVERT SECTION**
SCALE: NTS



3 — **SPECIAL CULVERT SECTION**
SCALE: NTS

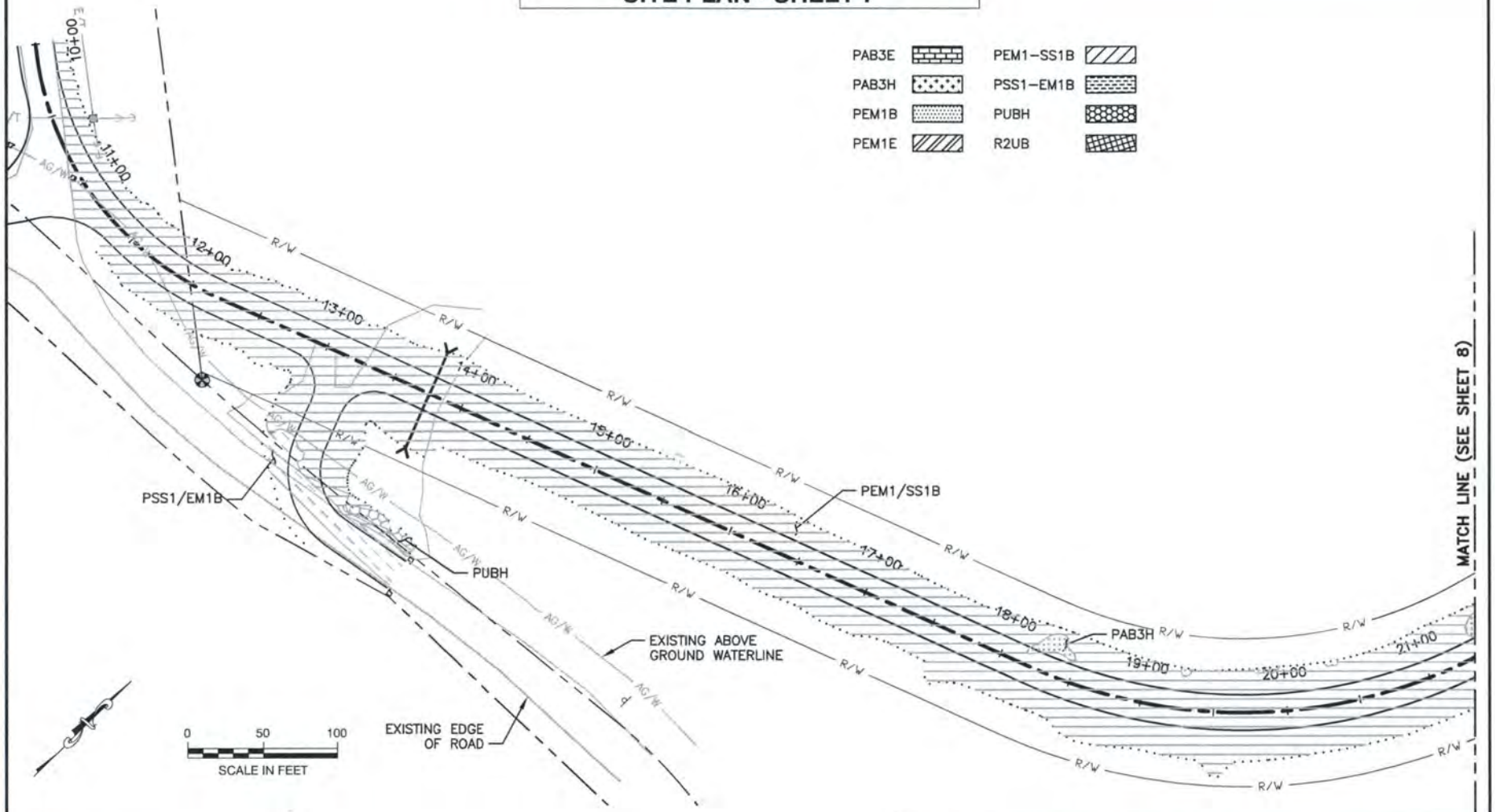
Applicant: NATIVE VILLAGE OF DEERING					
File No. : POA-2014-121					
Waterway: SMITH CREEK					
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION					
Sec.19 & 30 T.	08 N	R.	19 W	M.	KATEEL RIVER MERIDIAN
Lat.: N 66.08°				Long.:	165.71° W
Sheet 5 of 14				Date:	05 /17 /2016

WEST AIRPORT ROAD PROJECT
SITE PLAN - KEY MAP



Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 6 of 14 Date: 05 /17 /2016

WEST AIRPORT ROAD PROJECT
SITE PLAN - SHEET 7

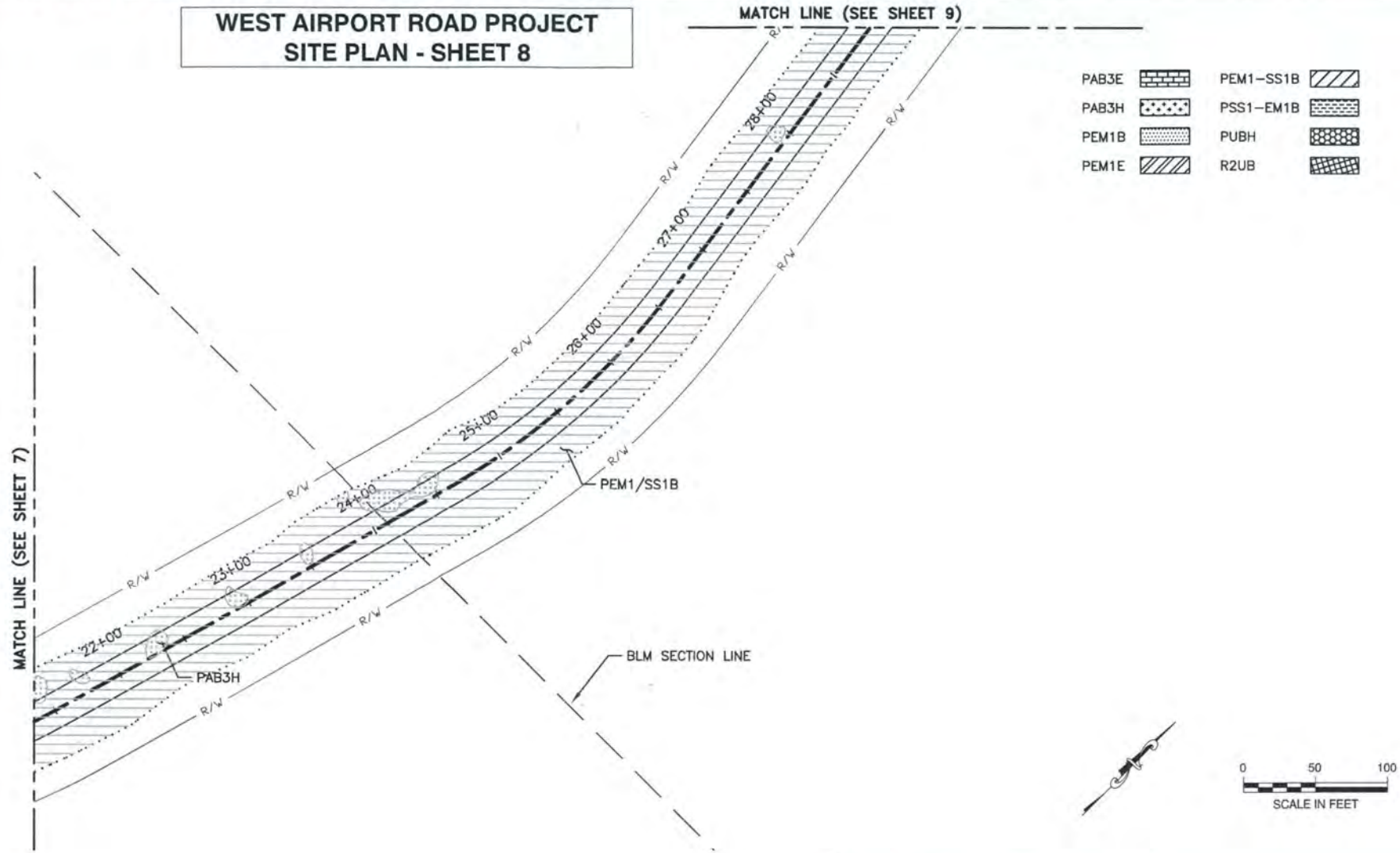


LEGEND

PROPOSED ROAD TOE OF FILL		PROPOSED GUARDRAIL	
PROPOSED ROAD SHOULDER		PROPOSED CMP	
PROPOSED ROAD CENTERLINE		PROPOSED RIGHT OF WAY	R/W
EXISTING RIGHT OF WAY		EXISTING WATER BODY	

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 7 of 14 Date: 05 /17 /2016

WEST AIRPORT ROAD PROJECT
SITE PLAN - SHEET 8

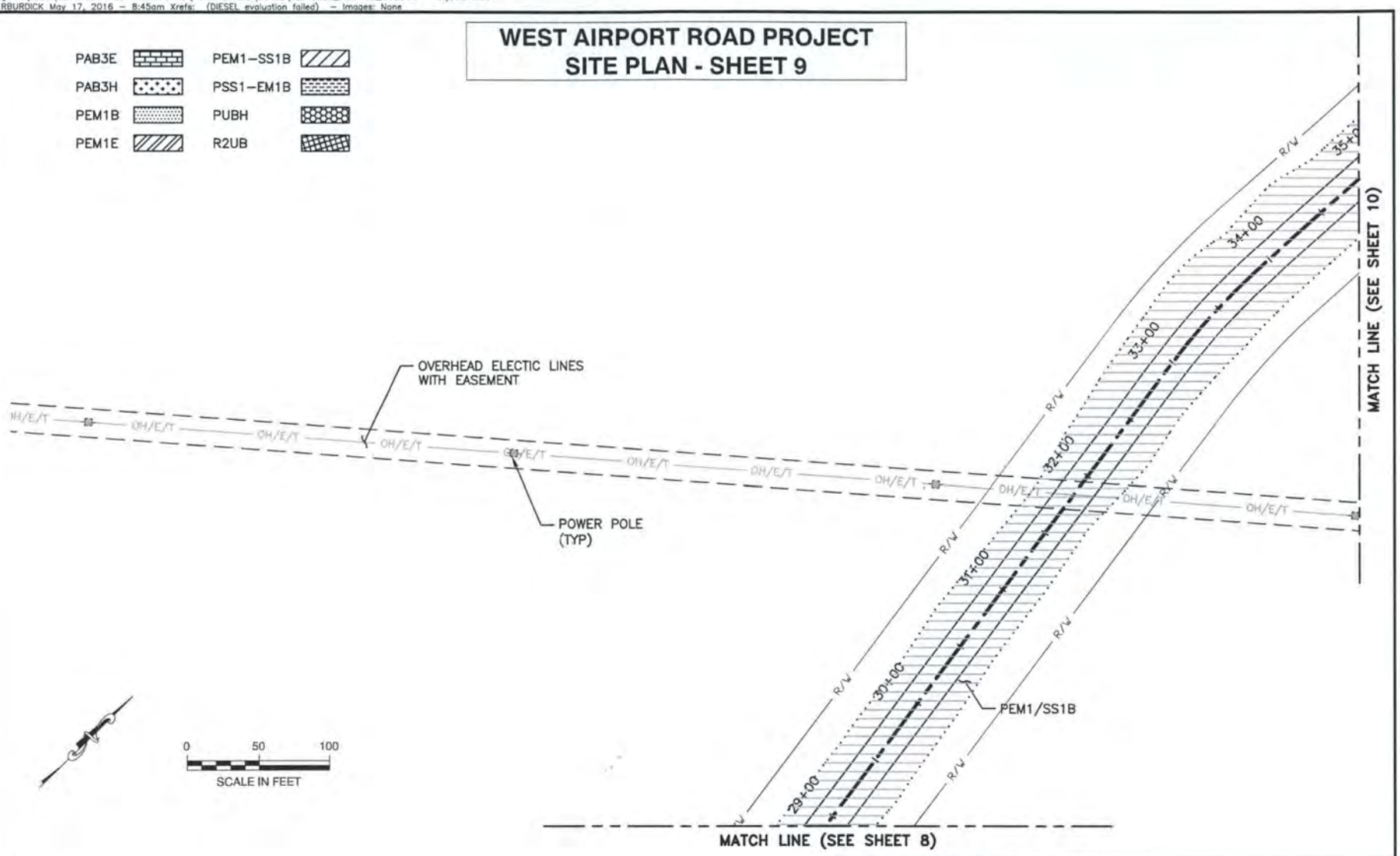


LEGEND

PROPOSED ROAD TOE OF FILL		PROPOSED GUARDRAIL	
PROPOSED ROAD SHOULDER		PROPOSED CMP	
PROPOSED ROAD CENTERLINE		PROPOSED RIGHT OF WAY	R/W
EXISTING RIGHT OF WAY		EXISTING WATER BODY	

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 8 of 14 Date: 05 /17 /2016

WEST AIRPORT ROAD PROJECT
SITE PLAN - SHEET 9

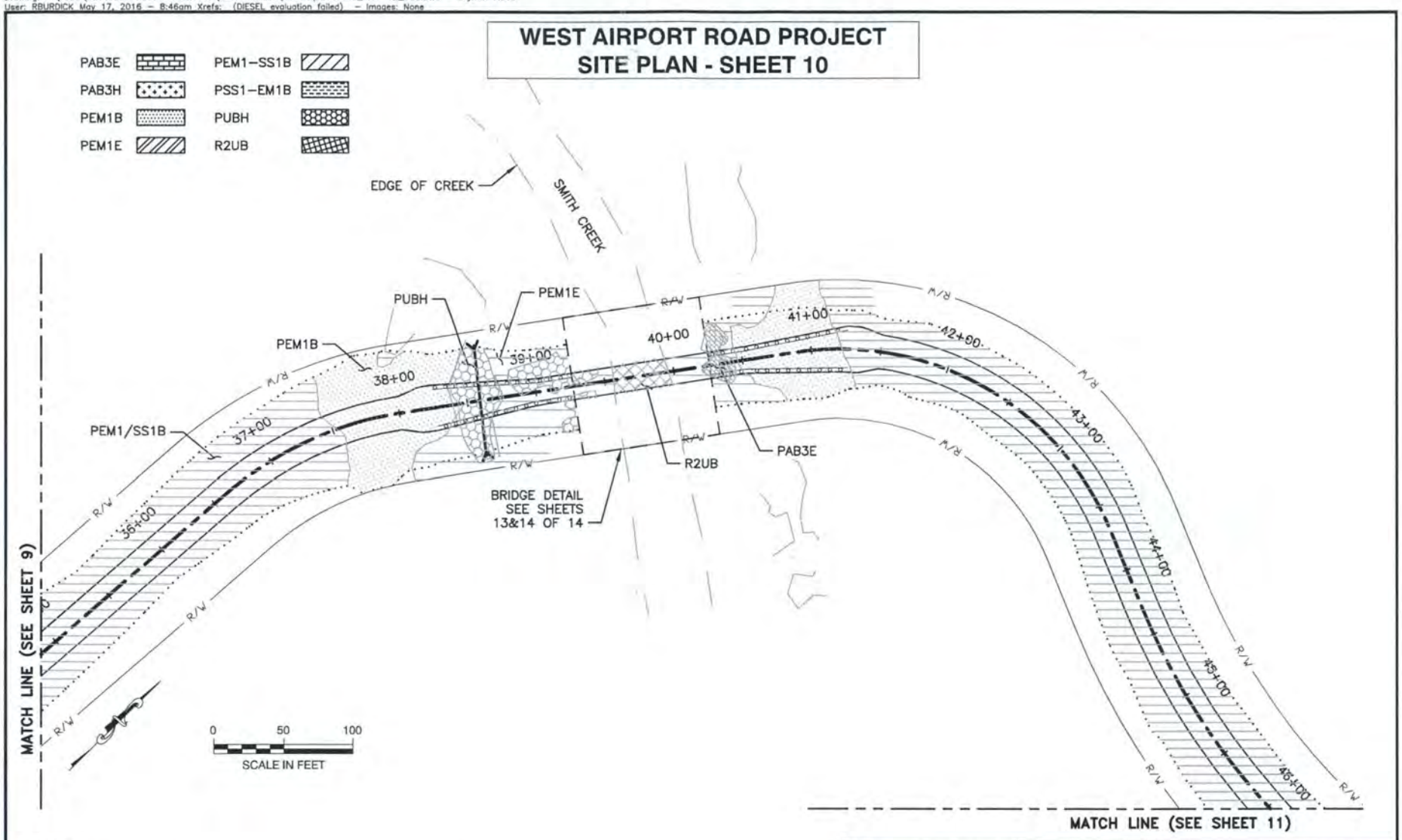


LEGEND

PROPOSED ROAD TOE OF FILL		PROPOSED GUARDRAIL	
PROPOSED ROAD SHOULDER		PROPOSED CMP	
PROPOSED ROAD CENTERLINE		PROPOSED RIGHT OF WAY	R/W
EXISTING RIGHT OF WAY		EXISTING WATER BODY	

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 9 of 14 Date: 05 /17 /2016

WEST AIRPORT ROAD PROJECT
SITE PLAN - SHEET 10

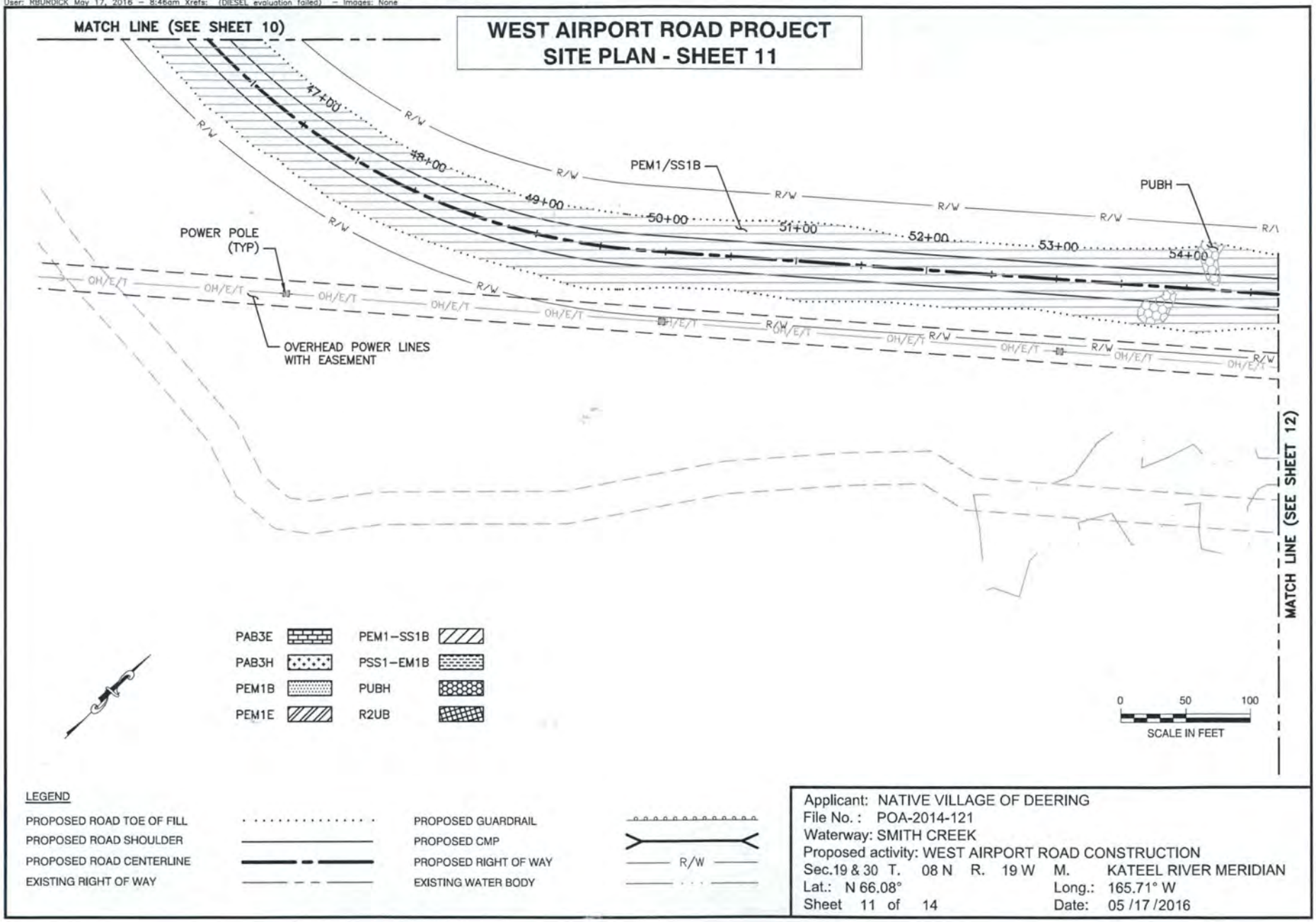


LEGEND

PROPOSED ROAD TOE OF FILL		PROPOSED GUARDRAIL	
PROPOSED ROAD SHOULDER		PROPOSED CMP	
PROPOSED ROAD CENTERLINE		PROPOSED RIGHT OF WAY	R/W
EXISTING RIGHT OF WAY		EXISTING WATER BODY	

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 10 of 14 Date: 05 /17 /2016

Drawing: K:\JOBS\32140053 WEST AIRPORT RD\ACAD-ENVIRO\USACE\32140053_FIG8-12_COE.DWG - Layout: FIG11
User: RBURDICK May 17, 2016 - 8:46am Xrefs: (DIESEL evaluation failed) - Images: None



LEGEND

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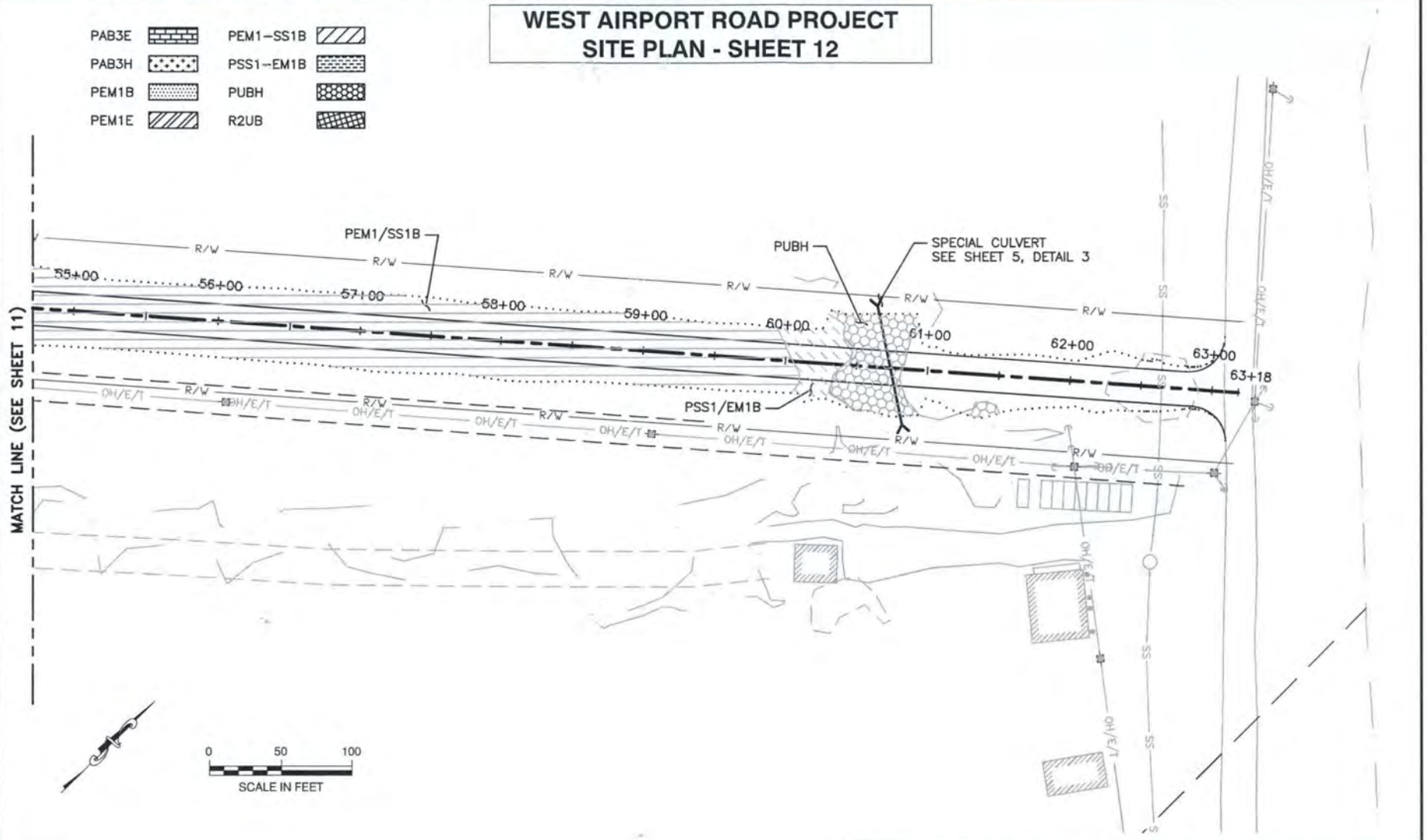
PROPOSED ROAD SHOULDER		PROPOSED CMP	
PROPOSED ROAD CENTERLINE		PROPOSED RIGHT OF WAY	R/W
EXISTING RIGHT OF WAY		EXISTING WATER BODY	

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 11 of 14 Date: 05 /17 /2016

WEST AIRPORT ROAD PROJECT
SITE PLAN - SHEET 12



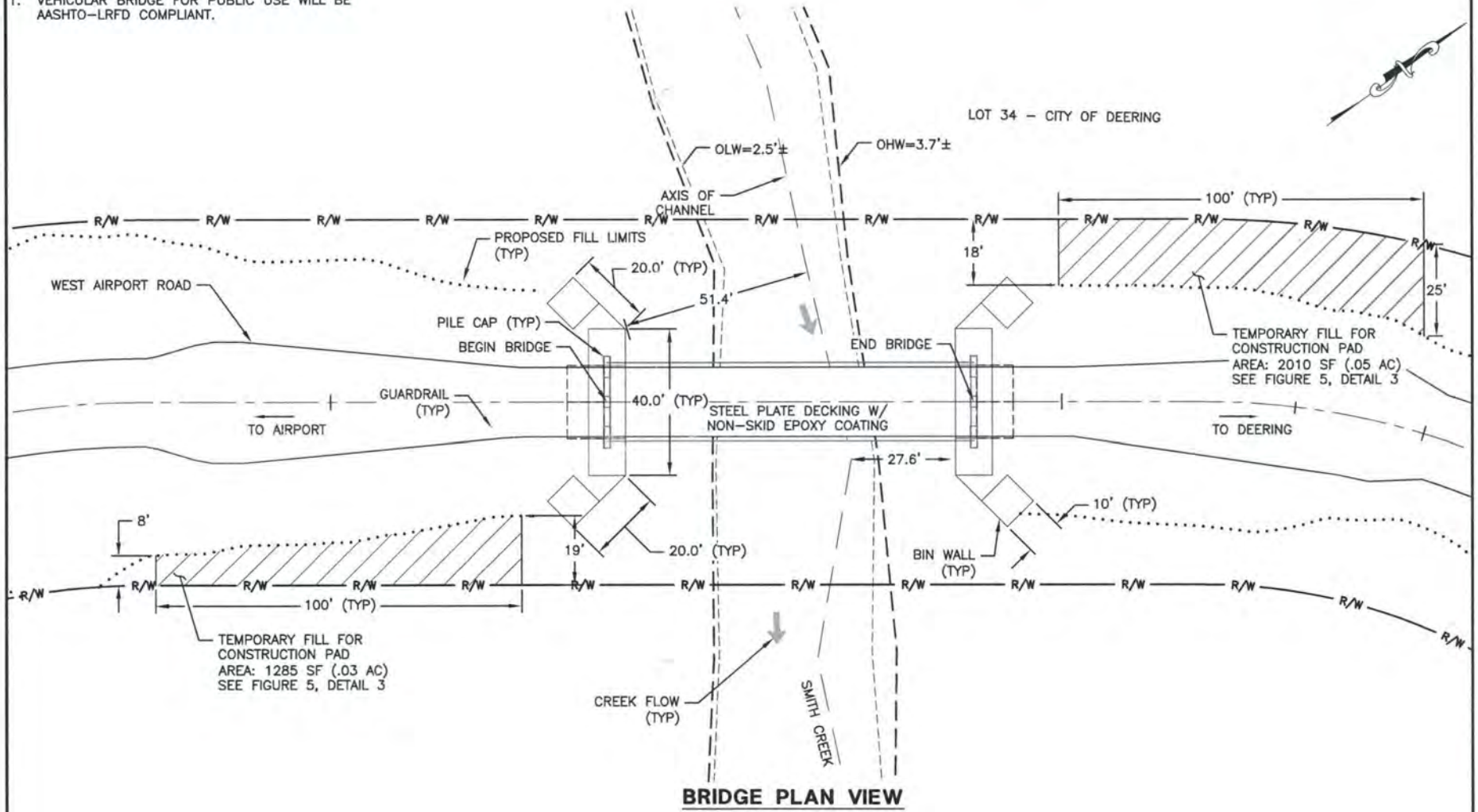
LEGEND

PROPOSED ROAD TOE OF FILL		PROPOSED GUARDRAIL	
PROPOSED ROAD SHOULDER		PROPOSED CMP	
PROPOSED ROAD CENTERLINE		PROPOSED RIGHT OF WAY	R/W
EXISTING RIGHT OF WAY		EXISTING WATER BODY	

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 12 of 14 Date: 05 /17 /2016

NOTES

1. VEHICULAR BRIDGE FOR PUBLIC USE WILL BE AASHTO–LRFD COMPLIANT.



BRIDGE PLAN VIEW

PARCEL OWNER:
NANA REGIONAL COROPORATION INC.

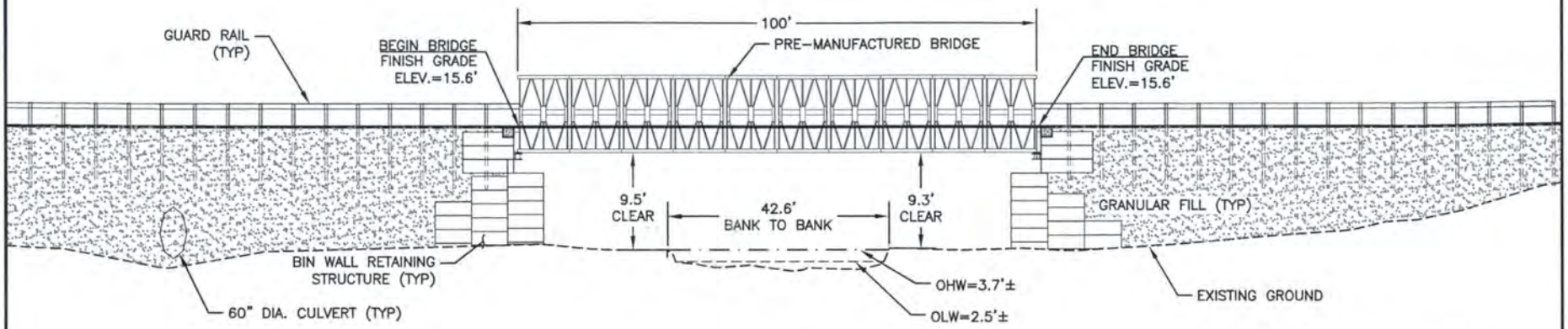
ABBREV:
OHW = ORDINARY HIGH WATER (SEPTEMBER 2013)
OLW = ORDINARY LOW WATER (SEPTEMBER 2013)

NOTES:
NO FILL WILL BE PLACED BELOW OHW.

HORIZONTAL DATUM:
ALASKA STATE PLANE NAD83, ZONE 7, U.S. FEET

VERTICAL DATUM:
NAVD88

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 13 of 14 Date: 05 /17 /2016

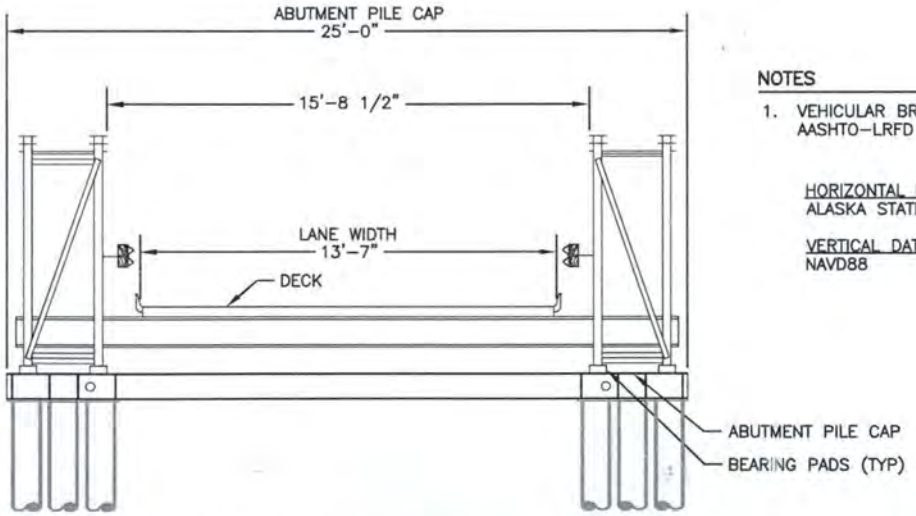


BRIDGE ELEVATION

AT BRIDGE ℄

0 15 30

SCALE IN FEET



VEHICULAR BRIDGE SECTION

SCALE: NTS

NOTES

1. VEHICULAR BRIDGE FOR PUBLIC USE WILL BE AASHTO-LRFD COMPLIANT.

HORIZONTAL DATUM:
ALASKA STATE PLANE NAD83, ZONE 7, U.S. FEET

VERTICAL DATUM:
NAVD88

Applicant: NATIVE VILLAGE OF DEERING
File No. : POA-2014-121
Waterway: SMITH CREEK
Proposed activity: WEST AIRPORT ROAD CONSTRUCTION
Sec.19 & 30 T. 08 N R. 19 W M. KATEEL RIVER MERIDIAN
Lat.: N 66.08° Long.: 165.71° W
Sheet 14 of 14 Date: 05 /17 /2016

THE STATE
of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF WATER
Wastewater Discharge Authorization Program

555 Cordova Street
Anchorage, Alaska 99501-2617
Main: 907.269.6285
Fax: 907.334.2415
www.dec.alaska.gov/water/wwdp

July 8, 2016

Native Village of Deering
Attention: Kevin Moto
P.O. Box 36089
Deering, Alaska 99736

Re: Native Village of Deering, Deering Airport Road
POA-2014-121, Smith Creek

Dear Mr. Moto:

In accordance with Section 401 of the Federal Clean Water Act of 1977 and provisions of the Alaska Water Quality Standards, the Department of Environmental Conservation (DEC) is issuing the enclosed Certificate of Reasonable Assurance for placement of dredged and/or fill material in waters of the U.S., including wetlands and streams, associated with the development of a new road route to the Deering Airport, also serving as an emergency evacuation route, in Deering, Alaska.

DEC regulations provide that any person who disagrees with this decision may request an informal review by the Division Director in accordance with 18 AAC 15.185 or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. An informal review request must be delivered to the Director, Division of Water, 555 Cordova Street, Anchorage, AK 99501, within 15 days of the permit decision. Visit http://dec.alaska.gov/commish/ReviewGuidance.htm for information on Administrative Appeals of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, PO Box 111800, Juneau, AK 99811-1800, within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

By copy of this letter we are advising the U.S. Army Corps of Engineers of our actions and enclosing a copy of the certification for their use.

Sincerely,

James Rypkema
Program Manager, Storm Water and Wetlands

Enclosure: 401 Certificate of Reasonable Assurance

cc: (with encl.)
Mary Romero, USACE, Anchorage
Eric Lindeen, Bristol Eng. Service Corp.
Jack Winters, ADF&G
USFWS Field Office Fairbanks
Gayle Martin, EPA Operations, Anchorage

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CERTIFICATE OF REASONABLE ASSURANCE

In accordance with Section 401 of the Federal Clean Water Act (CWA) and the Alaska Water Quality Standards (18 AAC 70), a Certificate of Reasonable Assurance, is issued to Native Village of Deering, attention: Kevin Moto, at P.O. Box 36089, Deering, Alaska 99736, for placement of dredged and/or fill material in waters of the U.S. including wetlands and streams in association with the development of a new road to the Deering Airport which also serves as an evacuation route from the community which is stranded when seasonal flooding overflows or washes out the existing road to the airport.

The project would discharge 25,800 cubic yards (cy) of fill material and 2,300 cy of aggregate surface course material into 6.86 acres of jurisdictional wetlands to create a 5,280 foot by 50 foot road to the Deering Airport. The road would include a bridge over Smith Creek. The bridge would be a 65 foot single span structure, with earthen abutments and 125 foot approaches on either side.

A state issued water quality certification is required under Section 401 because the proposed activity will be authorized by a U.S. Army Corps of Engineers permit (POA-2014-121) and a discharge of pollutants to waters of the U.S. located in the State of Alaska may result from the proposed activity. Public notice of the application for this certification was given as required by 18 AAC 15.180 in the Corps Public Notice POA-2014-121 posted from May 19, 2016 to June 20, 2016.

The proposed activity is located within Sections 19 and 30, T. 8 N., R. 19 W., Kateel River Meridian; Latitude 66.0743° N., -162.7463° W., in Deering, Alaska.

The Department of Environmental Conservation (DEC) reviewed the application and certifies that there is reasonable assurance that the proposed activity, as well as any discharge which may result, will comply with applicable provisions of Section 401 of the CWA and the Alaska Water Quality Standards, 18 AAC 70, provided that the following additional measures are adhered to.

1. Reasonable precautions and controls must be used to prevent incidental and accidental discharge of petroleum products or other hazardous substances. Fuel storage and handling activities for equipment must be sited and conducted so there is no petroleum contamination of the ground, subsurface, or surface waterbodies.
2. During construction, spill response equipment and supplies such as sorbent pads shall be available and used immediately to contain and cleanup oil, fuel, hydraulic fluid, antifreeze, or other pollutant spills. Any spill amount must be reported in accordance with Discharge Notification and Reporting Requirements (AS 46.03.755 and 18 AAC 75 Article 3). The applicant must contact by telephone the DEC Area Response Team for Northern Alaska at (907) 451-2121 during work hours or 1-800-478-9300 after hours. Also, the applicant must contact by telephone the National Response Center at 1-800-424-8802.
3. Runoff discharged to surface water (including wetlands) from a construction site disturbing one or more acres must be covered under Alaska's General Permit for Storm Water Discharges from Large and Small Construction Activities in Alaska (AKR100000). This permit requires a Storm Water Pollution Prevention Plan (SWPPP). For projects that disturb more than five acres, this SWPPP must also be submitted to DEC (William Ashton, 907-269-6283) prior to construction.

4. During the work on the culverts and bridges, construction equipment shall not be operated below the ordinary high water mark if equipment is leaking fuel, oil, hydraulic fluid, or any other hazardous material. Equipment shall be inspected and recorded in a log on a daily basis for leaks. If leaks are found, the equipment shall not be used and pulled from service until the leak is repaired.
5. All work areas, material access routes, and surrounding wetlands involved in the construction project shall be clearly delineated and marked in such a way that equipment operators do not operate outside of the marked areas.
6. Natural drainage patterns shall be maintained, to the extent practicable, without introducing ponding or drying.
7. Excavated or fill material, including overburden, shall be placed so that it is stable, meaning after placement the material does not show signs of excessive erosion. Indicators of excess erosion include: gullying, head cutting, caving, block slippage, material sloughing, etc. The material must be contained with siltation best management practices (BMPs) to preclude reentry into any waters of the U.S., which includes wetlands.
8. Include the following BMPs to handle storm water and total storm water volume discharges as they apply to the site:
    a. Divert storm water from off-site around the site so that it does not flow onto the project site and cause erosion of exposed soils;
    b. Slow down or contain storm water that may collect and concentrate within a site and cause erosion of exposed soils;
    c. Place velocity dissipation devices (e.g., check dams, sediment traps, or riprap) along the length of any conveyance channel to provide a non-erosive flow velocity. Also place velocity dissipation devices where discharges from the conveyance channel or structure join a water course to prevent erosion and to protect the channel embankment, outlet, adjacent stream bank slopes, and downstream waters.
9. Fill material (including dredge material) must be clean sand, gravel or rock, free from petroleum products and toxic contaminants in toxic amounts.
10. Any disturbed ground and exposed soil not covered with fill must be stabilized and re-vegetated with endemic species, grasses, or other suitable vegetation in an appropriate manner to minimize erosion and sedimentation, so that a durable vegetative cover is established in a timely manner.

This certification expires five (5) years after the date the certification is signed. If your project is not completed by then and work under U.S Army Corps of Engineers Permit will continue, you must submit an application for renewal of this certification no later than 30 days before the expiration date (18 AAC 15.100).

Date: July 8, 2016

James Rypkema, Program Manager
Storm Water and Wetlands

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Field Office
Planning and Consultation Branch
101 12th Avenue, Room 110
Fairbanks, Alaska 99701
June 9, 2016

U.S. Army Corps of Engineers
Alaska District
Attn: Colonel Michael Brooks
P.O. Box 6898
JBER, Alaska, 99506-0898

Re: POA-2014-121
Smith Creek

Dear Colonel Brooks:

The U.S. Fish and Wildlife Service (Service) has reviewed the referenced Public Notice of Application (PN) by The Native Village of Deering (applicant) to place about 25,800 cubic yards of gravel into 6.86 acres (0.03 km^2) of wetlands for the purpose of constructing an emergency access road from Deering, Alaska, to their airport.

The proposed project would construct a 5,280 ft × 50 ft (1.6 km × 15.2 m) road between the community of Deering and the existing airport (Figure 1). The project would also include a 65 ft (19.8 m) single-span bridge with earthen abutments over Smith Creek (Figure 2). The bridge would allow a minimum of 9 ft (2.7 m) vertical clearance from ordinary high water and 42.6 ft (13 m) navigational opening. Grubbing of the project area would take place before May 20 or after July 20 to avoid impacts to nesting migratory birds. Placement of fill would occur from June through September 2016, with project completion expected in 2017. The proposed mitigation for aquatic-resource impacts includes avoidance and minimization measures, and partial compensatory mitigation.

Recommendations: The Service appreciates the applicant's proposed plans to help conserve wetlands; including reducing the original wetland fill from 10 acres to 6.86 acres, proposing a new road alignment outside the floodplain of Smith Creek, and constructing a full-span bridge rather than a culvert at the Smith Creek crossing. We offer the following recommendations to help further reduce adverse impacts from the proposed project to fish and wildlife habitat.

Threatened and Endangered Species: The proposed project is within the range of three species listed as threatened under the Endangered Species Act of 1973 (ESA), as amended: spectacled eiders (*Somateria fischeri*), Alaska-breeding Steller's eiders (*Polysticta stelleri*), and polar bears (*Ursus maritimus*). The Service originally consulted on this project in a letter dated April 15, 2014. The project description and timing have changed, however, because the description of the proposed activities has not changed substantially, and the size of the proposed wetland impact area has decreased (10 acres reduced to 6.86 acres), we would not expect additional appreciable

impacts to listed species. This letter acknowledges the proposed changes, and constitutes an amendment to the Service's April 2014, consultation pursuant to section 7 of the ESA. Preparation of an additional Biological Assessment or further consultation regarding this project is not necessary at this time.

Migratory Birds: Migratory bird nests, eggs, or nestlings could be destroyed if work is conducted in nesting habitats during the spring and summer breeding season, which is generally May 20 through July 20 in the proposed project area. The Migratory Bird Treaty Act (MBTA) prohibits the willful killing or harassment of migratory birds. To minimize disturbance to nesting birds and help comply with the MBTA, we recommend land disturbing activities (e.g., clearing, excavation, fill, brush hogging, etc.) not occur from May 20 to July 20. For more information on timing guidelines for land disturbance activities, please refer to the following link: http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/pdf/vegetation_clearing.pdf (please also note these guidelines are currently under revision).

We appreciate the applicant's plans to disturb (grub) the project area either before May 20 or after July 20 to avoid and minimize impacts to ground-nesting migratory birds.

Mitigation: Service policy regarding impacts to fish and wildlife habitat includes first avoiding, then minimizing, and finally compensating for any remaining unavoidable impacts. These impacts include direct, indirect, and temporal impacts. If there are unavoidable project impacts, then the Service recommends compensatory mitigation for the unavoidable impacts by restoring or permanently protecting equal or higher-value wetlands as described in the 2008 Final Compensatory Mitigation Rule (33 CFR 325 and 332).

We appreciate the applicant's proposed avoidance (e.g., road alignment outside the floodplain), and minimization measures (e.g., culverts where appropriate and a full-span bridge over Smith Creek). We also recognize appropriate compensatory mitigation opportunities are limited in much of rural Alaska, such as mitigation banks and in-lieu fee programs. We appreciate the proposed permittee-responsible mitigation; including removal and disposal of refuse and debris from within and adjacent to the project area, removal and disposal of abandoned equipment and vehicles near the southern terminus of the proposed alignment, and removal of about 7,700 square feet (0.18 acres) of gravel from the existing Deering Road.

We recommend the applicant consider additional permittee-responsible compensatory mitigation opportunities if practicable to match the proposed unavoidable wetland impacts. These opportunities might include salvaging gravel and reclaiming additional portions of the existing Deering Road which may no longer be used, or reclaiming exhausted material sites along the Smith River south of Deering.

Conclusion: The Service does not object to permit issuance provided the following conditions are included in the permit.

1. Land disturbing activities (e.g., clearing, excavation, fill, brush hogging, etc.) not occur from May 20 to July 20 to minimize the likelihood of disturbing nesting migratory birds.

2. Refuse and debris, and abandoned equipment and vehicles are removed from wetlands within and adjacent to the project area; and abandoned portions of the existing Deering

road are reclaimed by salvaging gravel and restored to their native plant-community condition.

3. No fill, equipment or construction materials shall be stockpiled or stored on wetlands that do not have DA authorization for those activities.

4. Natural drainage patterns shall be maintained to the extent practicable by the installation of culverts in sufficient number and size under access roads and trails to prevent ponding, diversion, or concentrated runoff that would result in adverse impacts to adjacent wetlands and other fish and wildlife habitats.

5. All disturbed, stockpile and fill areas shall be stabilized to prevent erosion. Increased water turbidity and accumulation of sediment in drainages, sloughs, and other wetlands shall be evidence of insufficient stabilization.

These comments are submitted in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 844), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended: 16 U.S.C. 661 et esq.), and constitute the report of the Department of Interior. These comments are also for your use in your determination of 404 (b)(1) guidelines compliance (40 CFR 230), and in your public interest review (33 CFR 320.4) relating to protection of fish and wildlife resources.

We appreciate this opportunity for comment. If you need further assistance, please contact Kaithryn Ott at 907-456-0277 or *kaithryn_ott@fws.gov*.

Sincerely,

Robert J. Henszey
Branch Chief
Planning and Consultation

ecc: Mary Romero, USACE, JBER
Kevin Moto, Native Village of Deering
Eric Lindeen, Bristol Engineering, Anchorage
Audra L.J. Brase, ADF&G Division of Habitat, Fairbanks
James Rypkema, ADEC, Anchorage
Gayle Martin, EPA, Anchorage

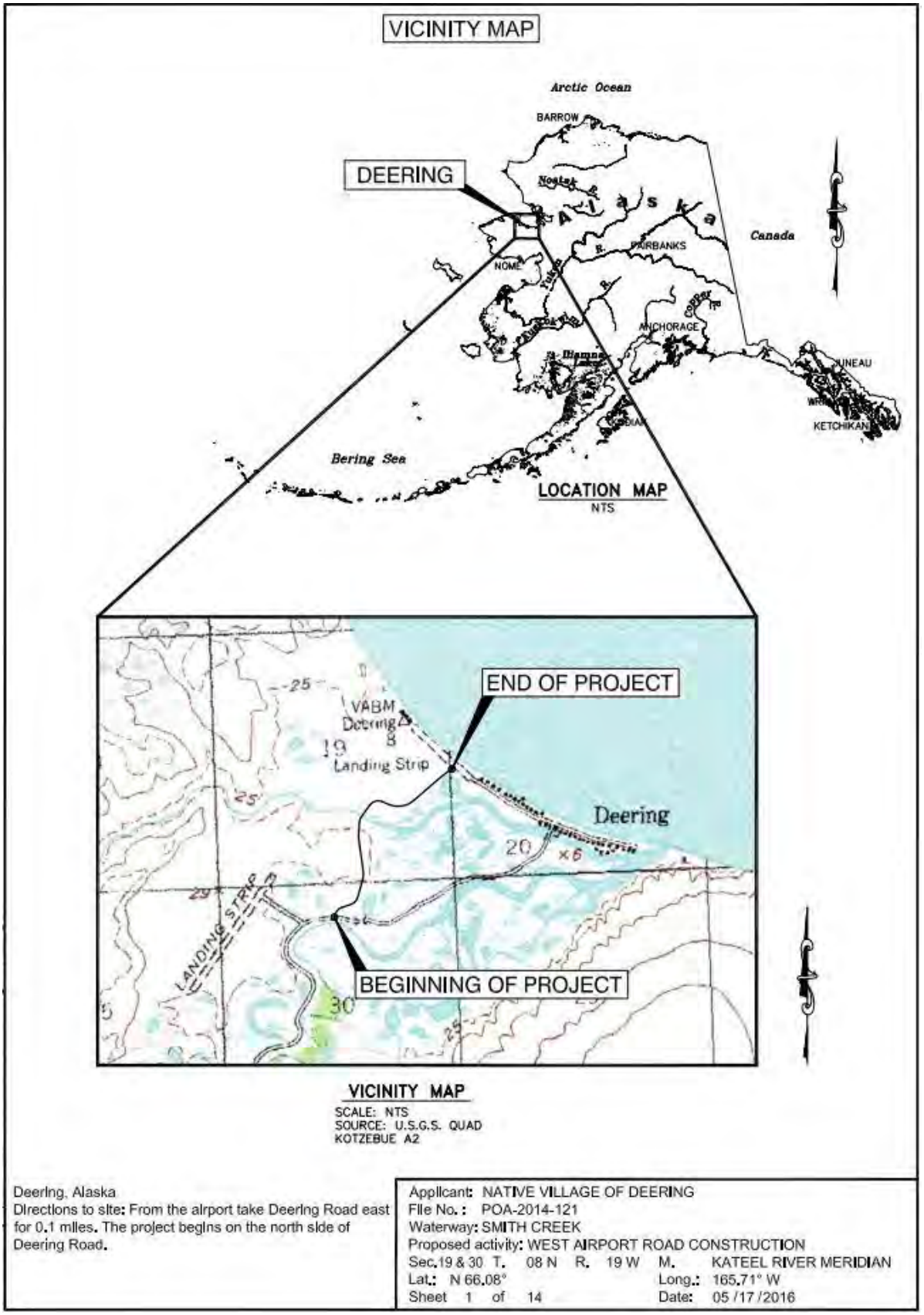


Figure 1. Location of the proposed road construction project in between the community of Deering, Alaska, and the nearby landing strip.

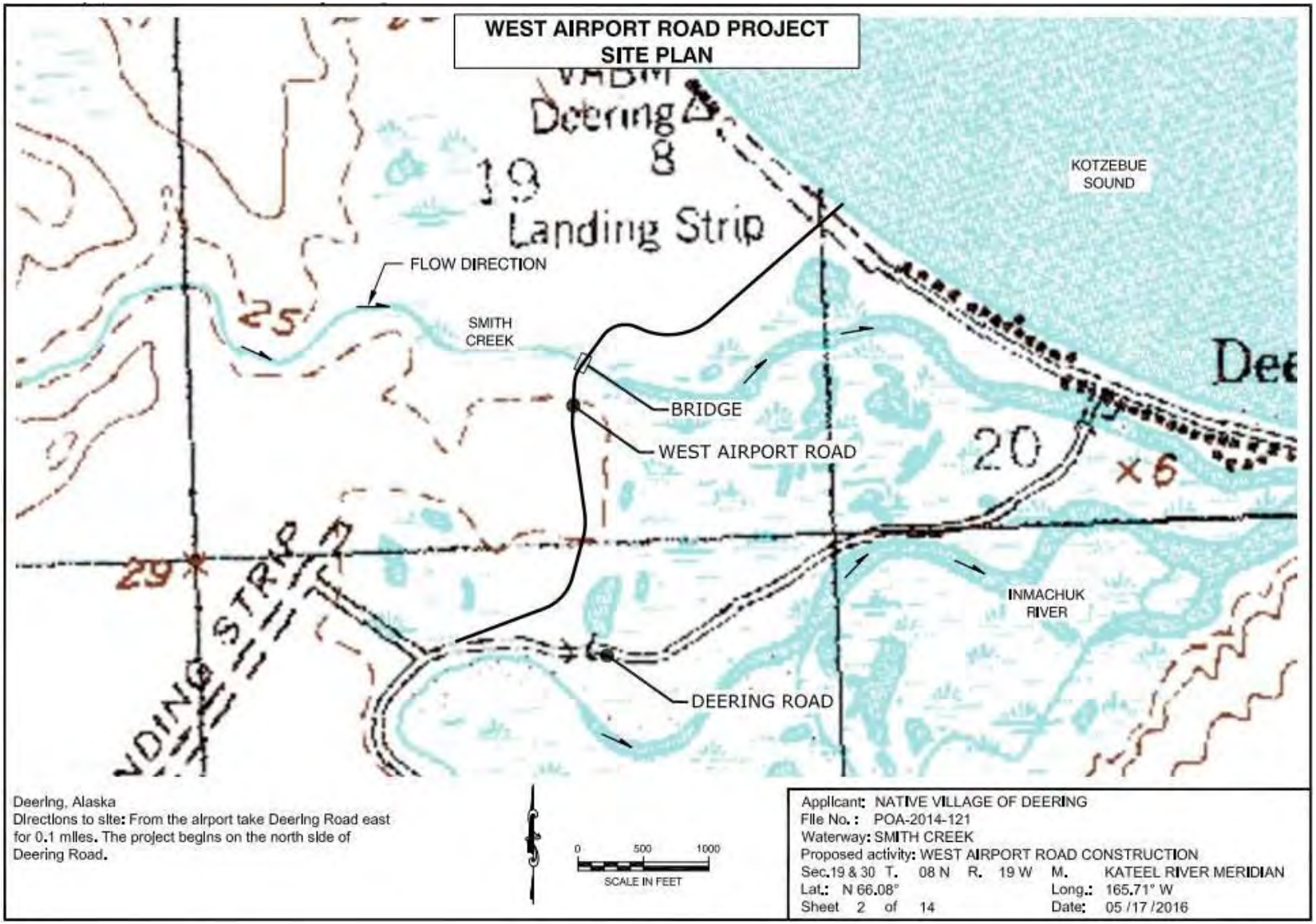


Figure 2. Detail of the proposed Smith Creek bridge and road alignment between the community of Deering, Alaska, and the nearby landing strip.

APPENDIX D

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

West Airport Road Project
Deering, Alaska 99736

Bristol Project No. 32140053

May 2017

Prepared For:

The Native Village of Deering
P.O. Box 30689
Deering, AK 99736

Prepared By:

Bristol
ENGINEERING SERVICES CORPORATION

111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501-5109
Phone (907) 563-0013
Fax (907) 563-6713

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FIGURES

APPENDICES

1.0 SUMMARY

This report presents the results of a Phase I Environmental Site Assessment (ESA) for the construction of the approximately one-mile West Airport Road, which includes a bridge that will span Smith Creek in Deering, Alaska. The ESA report was prepared in May 2017 by Bristol Engineering Services Corporation (Bristol) for the Native Village of Deering. The ESA services included the limited research and data reviews specified herein and a site reconnaissance.

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2.0 INTRODUCTION

Bristol Engineering Services Corporation (Bristol) has been contracted to prepare a Phase I ESA Report for the construction of the West Airport Road and bridge over Smith Creek in Deering, Alaska.

The Village of Deering is a second-class city located in the Northwest Arctic Borough situated on a thin spit of land along the southern edge of Kotzebue Sound within the northern coast of the Seward Peninsula. Deering is located at the mouth of the Inmachuk River, 57 miles southwest of Kotzebue. Deering is located at approximately 66.08° North Latitude and -162.71° West Longitude (Sections19, 20, 30, and 29 T8N R19W, Kateel River Meridian) (ADCED 2013).

The proposed new road will begin near the city garage/maintenance building and extend southwest for approximately 1,620 feet, then continue west for 500 feet, then southwest for 500 feet including a 100-foot span over Smith Creek. Crossing over the bridge the road will then extend south for 1,150 feet, then southwest for 600 feet, then west for the last 950 feet to the terminus at the intersection with Airport Road to the Deering Airport (See Figures). Deering Road will intersect with West Airport Road approximately 300 feet before the terminus at Unnamed Road.

The proposed road corridor will have a 24-foot wide driving surface and will be approximately 5,320 feet in length, including a bridge crossing over Smith Creek. Additionally, the proposed project will have a total project footprint of approximately 7.2 acres.

The bridge spanning Smith Creek will be a 100-foot single span pre-manufactured modular steel bridge stabilized with thermal helix piles and metal bin-wall abutments. The driving surface of the bridge will consist of steel plate decking coated with a non-skid epoxy. There will be 125-foot approaches on either side of the bridge. The road on both sides of the bridge will be two-lane roads that, at the approaches on the north and south sides, will flair first to 35 feet across at the widest point to accommodate pullouts for vehicles to allow oncoming traffic over the bridge to pass.

2.1 PURPOSE

The purpose of conducting the Phase I ESA was to estimate the potential, as of the date of the assessment, for hazardous substances to be present on the project corridor at levels likely to warrant mitigation under the current State of Alaska environmental laws and regulations.

2.2 DETAILED SCOPE-OF-SERVICES

An ESA comprises a number of individual elements whose basic nature and extent are determined in accordance with the standard of care for ESAs. The standard of care is commonly defined as the care applied by the ordinary practitioner in the area where the ESA was performed. It is Bristol's belief that we have complied with the applicable standard of care in performing this ESA.

The basic scope of services included the limited research and data reviews specified herein and a site reconnaissance. The activities performed to obtain information about the project corridor included the following:

- A Site Reconnaissance of the project corridor was conducted by Bristol personnel on July 29, 2014.
- A review of data obtained from a search of federal, state, and local databases performed by Environmental Data Resources Inc. (EDR). The resulting data was compiled into a report by EDR that is given in Appendix C. A discussion of the prominent databases consulted and subsequent search results is presented in Section 5.0, Records Review.
- Historical Aerial Photo Review from the years 1962, 1974, 1984, 1998 and 2013.

2.3 SIGNIFICANT ASSUMPTIONS

See Sections 2.2, Detailed Scope-of-Services and 2.4, Limitations and Expectations.

2.4 LIMITATIONS AND EXPECTATIONS

Generally, our services intentionally do not include specific surveys for asbestos containing materials (ACM), radon, methane gas, wetland delineation, lead in paint, lead in domestic water supply, polychlorinated biphenyls (PCBs) in caulk, or the investigation or detection of any Biological Pollutants present in or around any structure. The term "biological pollutants"

includes, but is not limited to; molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organism.

Although the scope of this work included searching the governmental databases listed in Section 4.4, Table 1, for indications of nearby properties documented under these systems, it did not include reviews of the individual files for these entries. No other environmental sampling or research work was included in the ESA activities unless specifically referenced in this report.

The findings presented in Section 8.0 of this report are based solely upon the information obtained during the ESA. Furthermore, the conclusions and recommendations include our assessment of the potential for the project corridor to have been environmentally impacted from past activities on or near the project corridor. Although the findings and considerations represent Bristol's best judgment, they do not represent a *certification* of the environmental status of the project corridor. American Society for Testing and Materials (ASTM) E 1527-13 states that, generally, an ESA has a shelf life of 180 days from the publication of the report.

Conditions and information observed by Bristol during these activities are subject to change. Indicators of the presence of hazardous materials that were latent at the time of this ESA may subsequently become observable. Information and representations obtained from individuals interviewed for this report were relied on unless incidents of conflicting data were noted. Bristol accepts no responsibility for inaccuracies or deficiencies in this report resulting from omissions or misrepresentations by the persons interviewed. Additionally, records or other information sources that Bristol did not review, because the research effort commonly associated with an ESA did not indicate their existence, may contain important information that could not have been considered in the formulation of the conclusions found in this report.

2.5 SPECIAL TERMS AND CONDITIONS

This ESA report (Report), which includes all of the supporting information gathered for purposes of the ESA, was prepared for the benefit of the Client. The Client may also distribute the Report to third parties, who may then use it at their discretion. However, any reliance upon the Report by a party other than the Client shall be solely at the risk of such third party and without legal recourse against Bristol. The Report shall not be used by any third party that does not agree to the conditions in this paragraph.

2.6 USER RELIANCE

See Sections 2.4, Limitations and Expectations and 2.5, Special Terms and Conditions.

3.0 SITE DESCRIPTION

The Native Village of Deering is located on Kotzebue Sound at the mouth of the Inmachuk River, approximately 57 miles southwest of Kotzebue. It is built on a flat sand and gravel spit approximately 300 feet wide and approximately half-mile long. It lays at approximately 66.07° North Latitude and -162.71° West Longitude (Sections 19, 20, and 30, Township 008 North, Range 019 West, Kateel River Meridian). See Figures 1 and 2, Vicinity Map and Site Location Map.

The proposed West Airport Road project corridor is currently undeveloped. Historically there was a trail and bridge in the general vicinity and a very faint trace of the former trail is discernable in aerial photographs; however, the bridge is no longer in place and, for all intents and purposes, neither is the road.

The proposed new road will begin near the city garage/maintenance building and extend southwest for approximately 1,620 feet, then continue west for 500 feet, then southwest for 500 feet to the proposed bridge approach, which will span Smith Creek. Crossing over the bridge the road will then extend south for 1,150 feet, then southwest for 600 feet, then west for the last 950 feet to the terminus at the intersection with an Unnamed Road to the airport (See Figures). Deering Road will intersect with West Airport Road approximately 300 feet before the terminus at Unnamed Road.

The proposed road corridor will have a 24-foot wide driving surface and will be approximately 5,320 feet in length, including a 100-foot bridge crossing over Smith Creek. Additionally, the proposed project will have a total project footprint of approximately 7.2 acres.

The bridge spanning Smith Creek will be a 100-foot single span pre-manufactured modular steel bridge stabilized with thermal helix piles and metal bin-wall abutments. The driving surface of the bridge will consist of steel plate decking coated with a non-skid epoxy. There will be 125-foot approaches on either side of the bridge. The road on both sides of the bridge will be two-lane roads that, at the approaches on the north and south sides, will flair first to 35 feet across at the widest point to accommodate pullouts for vehicles to allow oncoming traffic over the bridge to pass.

3.1 RECORDED DOCUMENTS

No recorded documents were obtained for the Report. For a list of federal and state records consulted for the Report see Section 2.2, Detailed Scope of Services.

3.2 SITE AND VICINITY GENERAL CHARACTERISTICS

The project corridor extends in a southwesterly direction following the utility corridor located at the western end of the village. At approximately 1,620 feet the road will curve to the west for about 500 feet where it will connect to the bridge crossing. The bridge crossing over Smith Creek will be a single span pre-manufactured modular steel bridge. Once on the other side the road will continue on west-southwest, avoiding FAA property, where it will meet up with Airport Road. The proposed road will also intersect with Deering Road, which is the other road leading out of the village. See Site Reconnaissance Notes and Photo Log in Appendices A & B, respectively.

The proposed project will acquire new right-of-way (ROW) over lands that are owned by the Native Village of Deering and managed by the Northwest Arctic Borough. Subsurface rights are owned by the NANA Regional Corporation, Inc.

3.3 CURRENT USE OF THE *PROJECT CORRIDOR*

The project corridor is currently undeveloped.

3.4 DESCRIPTION OF STRUCTURES, ROADS, AND OTHER IMPROVEMENTS ON THE PROJECT CORRIDOR

There are no structures located within the proposed project corridor.

3.5 CURRENT USES OF THE ADJOINING PROPERTIES

The properties adjacent to the project corridor consist of undeveloped land.

4.0 USER PROVIDED INFORMATION

Most of the information contained in the Report was gathered by Bristol and was not provided by the client.

4.1 TITLE RECORDS

No Title Records were obtained for the project corridor, at the time of this Report's generation. A review of historical aerial photographs dating back to 1966 indicates that the property adjacent to the project corridor has not been developed in modern times and therefore has a low probability of having been subjected to contamination.

4.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

No environmental liens were found to apply to the proposed project corridor.

4.3 SPECIALIZED KNOWLEDGE

All knowledge used in the preparation of the Report is commonly known or reasonably ascertainable information.

4.4 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

See Sections 2.2, Detailed Scope of Services and 5.1, Standard Environmental Record Sources for a list of sources, including federal and state databases and lists, consulted for the preparation of the Report.

Bristol contracted EDR to perform a search of federal, state, and local databases. A records search for the project corridor was conducted (Appendix C). The search radius was the industry standard one-mile radius and originated from the approximate center of the project corridor.

The EDR report includes a list of "orphan" records that have "poor or inadequate" location information. Because the location of these sites cannot be mapped/determined due to inadequate information, a discussion of orphan list records is not included in this Report. The orphan records are listed in the EDR Report (Appendix C).

The results of the EDR search were compiled into a report, which is located in Appendix C, and are listed in Tables 1-3 of this report.

Table 1 – Federal Agency Findings Summary

List Name	Acronym	Status
National Priority List	NPL	No Listing
Delisted NPL	Delisted NPL	No Listing
Comprehensive Environmental Response, Compensation, and Liability Information Systems	CERCLIS FEDERAL FACILITY	No Listing No Listing
CERCLIS No Further Remedial Action Planned	CERCLIS-NFRAP	No Listing
Resource Conservation and Recovery Act - Corrective Action Report	RCRA-CORRACTS	No Listing
RCRA Non-CORRACTS Treatment, Storage and Disposal	RCRA-CORRACTS TSD	No Listing No Listing
RCRA Generators	RCRA-LQG RCRA-SQG RCRA-CESQG	No Listing No Listing No Listing
Institutional Controls / engineering Controls registry	US ENG Controls US INST Control LUCIS	No Listing No Listing No Listing
Emergency Response Notification System	ERNS	No Listing

Table 2 – State Agency Findings Summary

List Name	Acronym	Status
State- and Tribal – equivalent CERCLIS	SHWS	No Listing
State and tribal landfill and/or solid waste disposal site lists	SWF/LF	No Listing
State and tribal leaking storage tank lists	LUST INDIAN LUST	No Listing
State and tribal registered storage tank lists	UST, AST, INDIAN UST, FEMA UST	No Listing
State and tribal intuitional control/engineering control registries	ENG CONTROLS INST CONTROLS	No Listing
State and tribal Brownfield sites	BROWNFIELDS	No Listing

Table 3 - Additional Environmental Findings Summary

List Name	Acronym	Status
Local Brownfields lists	US BROWNFIELDS	No Listing
Local lists of Landfill/ Solid waste Disposal Sites	ODI, DEBRIS REGION 9, SWRCY, INDIAN ODI	No Listing

Local Lists of Hazardous Waste / Contaminated Sites	US CDL, CDL,US HIST CDL	No Listing
Local Land Records	LEINS 2	No Listing
Records of Emergency Release Reports	HMIRS, SPILLS	No Listing
Other Ascertainable Records	RCRA-Non Gen	No Listing
	DOT OPS	No Listing
	DOD	No Listing
	FUDS	No Listing
	CONSENT	No Listing
	ROD	No Listing
	UMTRA	No Listing
	MINES	No Listing
	TRIS	No Listing
	TSCA	No Listing
	FTTS	No Listing
	HIST FTTS	No Listing
	SSTS	No Listing
	ICIS	No Listing
	PADS	No Listing
	MLTS	No Listing
	RADINFO	No Listing
	FINDS	1*
	RAATS	No Listing
	UIC	No Listing
	DRYCLEANERS	No Listing
	NPDES	No Listing
	AIRS	No Listing
	INDIAN RESERV	No Listing
	SCRD DRYCLEANERS	No Listing
	FINANCIAL ASSURANCE	No Listing
	COAL ASH	No Listing
	PBC TRANSFORMER	No Listing
	COAL ASH EPA	No Listing
	US FIN ASSUR	No Listing
	EPA WATCH LIST	No Listing
	PRP	No Listing
	2020 COR ACTION	No Listing
	COAL ASH DOE	No Listing
	COAL ASH EPA	No Listing
	Financial Assurance	No Listing
	COAL ASH	No Listing
	US AIRS	No Listing
	LEAD SMELTERS	No Listing
	2020 CO ACTION	No Listing

*= Site(s) were determined to be of sufficient distance from the project corridor as to not pose a threat.

4.5 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

No major environmental issues were encountered in local, state, or federal records reviews of the proposed project corridor.

During the July 29, 2014 site reconnaissance visit, some issues of environmental concern were encountered at the beginning of the proposed road corridor in proximity to the City garage/maintenance building, which are discussed in further detail in Section 6.3.

4.6 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The project corridor is unoccupied. The surface rites reside with the Native Village of Deering and the subsurface rites residing with NANA Regional Corporation.

4.7 REASON FOR PERFORMING *PHASE I*

The purpose of conducting the ESA was to estimate the potential, as of the date of the assessment, for hazardous substances to be present within and adjacent to the project corridor at levels likely to warrant mitigation under the current State of Alaska environmental laws and regulations.

4.8 OTHER

Not applicable.

5.0 RECORDS REVIEW

Bristol contracted Environmental Data Resources Inc. (EDR) to search federal, state, and local databases and prepare a report detailing their findings (Appendix C). A list of federal, state, and local records/databases EDR consulted for the preparation of the Report is listed in Section 5.1, Standard Environmental Record Sources. Additionally, the online ADEC GIS based Contaminated Site database was accessed to assist with determining the potential for contaminated sites within proximity to the project corridor.

5.1 STANDARD ENVIRONMENTAL RECORD SOURCES

The following are the standard environmental record sources that were consulted for the preparation of the Report.

5.1.1 Federal Records Review

Federal National Priorities List (NPL) Site List: This includes the NPL, the proposed NPL sites, and NPL liens (federal Superfund liens). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. There are no NPL sites, NPL proposed sites, or NPL liens located within the project corridor or search radius. The NPL site list and proposed NPL site list were consulted for this report on March 3, 2013.

Federal Delisted NPL Site List: Sites may be deleted from the NPL when no further response is appropriate. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. No federally delisted NPL sites have been reported within the project corridor or search radius. The Federal Delisted NPL site list was consulted for this report on March 3, 2013.

Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List: The CERCLIS contains data on potential hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and private persons. The CERCLIS list contains sites which are either proposed to or on the NPL and sites which are in the screening and assessment phase for possible inclusion on the NPL. No

CERCLIS listed sites have been reported within the project corridor or search radius. The CERCLIS list was consulted for this report on March 3, 2013.

Federal CERCLIS No Further Remedial Action Planned (NFRAP) Site List: The CERCLIS-NFRAP site list is comprised of archived sites, which are sites that have been removed and archived from the inventory of CERCLIS sites. The decision to archive a site does not necessarily mean that there is no hazard associated with the site; it only means that, based upon available information, the location is not judged to be a potential NPL site. No CERCLIS-NFRAP listed sites have been reported within the project corridor or search radius. The CERCLIS-NFRAP listed was consulted for this report on March 3, 2013.

Federal Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) Facilities List: The RCRA CORRACTS identifies hazardous waste handlers with RCRA corrective action activity. No RCRA CORRACTS listed facilities have been reported within the project corridor or search radius. The RCRA-CORRACTS facilities list was consulted for this report on March 3, 2013.

Federal RCRA non-CORRACTS Treatment, Storage, and Disposal (TSD) Facilities List: The RCRA non-CORRACTS TSD facilities list includes non-CORRACTS TSD facilities that treat, store, or dispose of waste. No such facilities have been reported within the project corridor or search radius. The list can be accessed via the EPA's comprehensive information system, RCRAInfo, which provides access to data supporting the RCRA and Hazardous and Solid Waste Amendments (HSWA). The RCRA non-CORRACTS TSD facilities list was consulted for this report on March 3, 2013.

Federal RCRA Generators List: The RCRA generators list includes information about large quantity generators (LQGs), small quantity generators (SQGs), and conditionally exempt small quantity generators (CESQGs). No LQGs, SQGs, or CESQGs have been reported within the assessment site or search radius. The list can be accessed via the EPA's comprehensive information system, RCRAInfo, which provides access to data supporting the RCRA and Hazardous and Solid Waste Amendments (HSWA). The RCRA generators list was consulted for this report on March 3, 2013.

Federal Institutional Controls/Engineering Controls Registries: The Engineering Controls Sites List (US ENG CONTROLS) is a listing of sites with engineering controls in place,

which may include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. The Institutional Controls Sites List (US INST CONTROLS) is a listing of sites with institutional controls in place, which may include administrative measures (such as groundwater use restrictions), construction restrictions, property use restrictions, deed restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining onsite. No US ENG CONTROLS or US INST CONTROLS listed sites have been reported within the project corridor or search radius. The US ENG CONTROLS or US INST CONTROLS list was consulted for this report on March 3, 2013.

Federal Emergency Response Notification System (ERNS) List: The ERNS records and stores information on reported releases of oil and hazardous substances. No ERNS records have been reported within the project corridor or search radius. The ERNS list was consulted for this report on March 3, 2013.

Federal Hazardous Materials Information Reporting System (HMIRS): The HMIRS contains information on hazardous material spill incidents reported to U.S. Department of Transportation (USDOT). No HMIRS records have been reported within the project corridor or search radius. The HMIRS was consulted for this report on March 3, 2013.

Federal Facility Index System (FINDS): The FINDS provides an inventory of over one million facilities regulated by the EPA. FINDS acts as an index to the facility's name, address, EPA ID, and the programs which regulate or contain more detailed information about the facility. According to the EDR Report, 1 FINDS record was found to be located within the 1-mile search radius, located at the Deering Airport. The site is located outside the proposed project corridor and is not anticipated to negatively affect the proposed project. The FINDS inventory was consulted for this report on March 3, 2013.

5.1.2 State Records Review

Alaska Department of Conservation (ADEC) Contaminated Sites Database: The ADEC contaminated sites database is the state's equivalent to CERCLIS. These sites may or may not have been listed on the federal CERCLIS list. A search of the contaminated sites database revealed 3 records for the Deering area. Of the reported sites, only one is located within the 1-mile search radius. The Old Bulk Fuel Tank Farm is located down gradient from the

proposed project corridor, and separated by Smith Creek; therefore, the site is not anticipated to negatively affect the proposed project. The date the Contaminated Sites Database was consulted for this report was March 3, 2014.

State and Tribal Leaking Storage Tank Lists: The lists included the ADEC Leaking Underground Storage Tank (LUST) database and the EPA's Indian Land LUST lists. The LUST records contain an inventory of reported leaking underground storage tank incidents. No reported LUST incidents are located on or adjacent to the project corridor, or within the search radius. The date the LUST list was consulted for this report was March 3, 2014.

State and Tribal Registered Storage Tanks Lists: The lists included the ADEC Underground Storage Tank (UST) database, ADEC Aboveground Storage Tank (AST) records, and the EPA's Indian Land UST lists. The UST records contain an inventory of registered underground storage tanks. The AST records contain information regarding "regulated" facilities with storage capacities of above 10,000 barrels. No ASTs or USTs are reported to be located on or adjacent to the project corridor, or within the search radius. The ADEC UST/AST database records, and the EPA's Indian Land UST lists were independently verified by Bristol for this report on March 3, 2014.

State Institutional Control/Engineering Control Registries: The lists include contaminated sites with either engineering controls (ENG CONTROLS) or institutional controls (INST CONTROLS) in place. No contaminated sites with either engineering controls or institutional controls in place are located along or within the project corridor or within the search radius. The State INST CONTROLS/ENG CONTROLS registries were consulted for this report on March 3, 2014.

State Brownfield Sites: This includes proposed or identified Brownfield sites, which are properties that may have difficulty being reused due to the presence or potential of a hazardous substance, pollutant, or contamination. No proposed or identified Brownfield sites are located within the project corridor or search radius. The State Brownfield site list was consulted for this report on March 3, 2014.

5.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES

Additional environmental record sources were not used for the preparation of the Report.

5.3 PHYSICAL SETTING SOURCE(S)

The physical setting source was limited to the observations made by Bristol during the July 29, 2014 site reconnaissance visit.

5.4 HISTORICAL USE INFORMATION ON THE *PROJECT CORRIDOR*

An archaeological assessment of the project area was conducted by Mr. Robert Meinhardt with TrueNORTH Sustainable Development Solutions, LLC in September, 2013. The final report was sent to BIA for their review. BIA submitted the report to the State Historic Preservation Office (SHPO) for their concurrence with the report's findings. According to the report, no archaeological remains or historical buildings were observed in the project corridor. BIA/SHPO concurred with the report's findings as of October 15, 2014. The archaeological assessment and SHPO Section 106 letter can be found in Appendix D.

5.5 HISTORICAL USE INFORMATION ON ADJOINING PROPERTIES

Deering was established in 1901 as a supply station for Interior gold mining near the historic Malemiut Eskimo village of "Inmachukmiut." The name Deering was probably taken from the 90-ton schooner "Abbey Deering," which was in nearby waters around 1900. The city was incorporated in 1970 (DCCED 2014).

5.6 HISTORICAL AERIAL PHOTOGRAPH REVIEW

No signs of environmental concerns were observed in a review of aerial photography from 1965, 1974, 1984, 1998, and 2013. Purchased photographs used in the aerial photograph review will be retained in Bristol's aerial photograph file and are not included in the Report. The following is a brief description of what was observed the aerial photograph:

- **1965:** The 1965 aerial photograph shows that the project corridor is undeveloped and in its natural state. No road or trail access to the project corridor is visible in the photograph. One small airstrip is visible along the beach line. Additionally, minimal development is visible throughout the larger area; consisting of only residential and municipal development. The aerial photograph did not indicate any signs of fuel contamination or spills; clearing for additional construction/ road infrastructure projects is visible. Overall, no discernable environmental concerns are visible in the 1965 aerial photograph.
- **1974:** The 1974 aerial photograph shows the project corridor is still undeveloped and in a natural state. The aerial photograph shows extensive development throughout Deering and the larger area, including: expanded road infrastructure, clearing new

airstrip with access road, and expansion of residential, municipal and commercial buildings. Scattered trails are visible adjacent to the project corridor and larger area. Areas of clearing for additional construction project are visible throughout the larger area. The aerial photograph did not indicate any signs of fuel contamination or spills. Overall, no discernable environmental concerns are visible in the 1974 aerial photograph.

- **1984:** The 1984 aerial photograph shows the proposed project corridor is still undeveloped and in its natural state The aerial photograph shows extensive development throughout Deering and the larger area, including: expanded road infrastructure, new airstrip with access road, borrow site expansion, new landfill with access road, and expansion of residential, municipal and commercial buildings. The aerial photograph did not indicate any signs of fuel contamination or spills. Overall, no discernable environmental concerns are visible in the 1984 aerial photograph.
- **1998:** The 1998 aerial photograph shows the proposed project corridor is still undeveloped and in its natural state The aerial photograph shows extensive development throughout Deering and the larger area, including: the expansion of residential along the former air strip, a new sewage lagoon and clearing for municipal and/or commercial buildings. The aerial photograph did not indicate any signs of fuel contamination or spills. Overall, no discernable environmental concerns are visible in the 1998 aerial photograph.
- **2013:** The 2013 aerial photograph shows the proposed project corridor and surrounding area as it exists today. Scarring from the historic trail that previously extended over partial areas of the proposed project corridor is visible. The aerial photograph did not indicate any signs of fuel contamination or spills. Overall, no discernable environmental concerns are visible in the 1998 aerial photograph.

6.0 SITE RECONNAISSANCE

The site reconnaissance visit was performed by Bristol environmental personnel on July 29, 2014. See site reconnaissance notes and photo log in Appendices A & B.

6.1 METHODOLOGY AND LIMITING CONDITIONS

The site reconnaissance took place along the entire length of the proposed project corridor (Figure 2). Bristol personnel surveyed the site taking notes, pictures, and probing the soil as they proceeded throughout the surrounding property and buildings. There were no climatological or physical barriers that prevented assessment of the entire proposed project corridor.

6.2 GENERAL SITE SETTING

The site reconnaissance took place along the proposed road alignment (See Figure 2).

6.3 EXTERIOR OBSERVATIONS

The overall appearance of the majority of the project corridor exterior surfaces during the reconnaissance was clean, with no discolored vegetation, unusual odors or indications of pits, unnatural ponds or lagoons. The exception being near the City garage/maintenance building located at the northern terminus of the proposed project corridor. Surface staining in multiple locations throughout the shop yard, approximately 75 abandoned 55-gallon fuel drums, 5 decommissioned day tanks, soaked utility poles, and abandoned machinery were noted throughout the developed pad during the site reconnaissance visit. See the site reconnaissance notes and photo log in Appendices A and B, respectively.

6.4 INTERIOR OBSERVATIONS

Not applicable. Two structures are located within the developed city garage/maintenance shop yard. No interior observations were made during the site reconnaissance visit.

7.0 INTERVIEWS

No interviews were conducted for the Report.

8.0 FINDINGS

A review of federal and state records indicates no signs of environmental concern within the project corridor or on the adjacent properties. The results of federal and state record searches revealed that no potential Superfund or hazardous waste sites are listed for the project corridor and adjacent areas; no EPA currently designated nonattainment areas for all criteria of pollutants are listed for the project corridor and adjacent areas; no records of the project corridor and adjacent areas were encountered in the CERCLIS database; no leaking underground storage tank records were encountered for the project corridor or adjacent areas. A search of the ADEC Spills Database indicated 4 spills within Deering; however, all 4 spills have been issued the classification of "Case Closed-Cleanup Complete", therefore are not anticipated to negatively affect the proposed project. A search of the ADEC Contaminated Sites Database indicated 1 site is located within the 1-mile search radius. However, the Old Bulk Fuel Tank Farm is located down gradient from the proposed project corridor, and separated by Smith Creek; therefore, the site is not anticipated to negatively affect the proposed project.

8.1 SUMMARY OF FINDINGS

No environmental concerns were observed by Bristol within the project corridor during the site reconnaissance visit on July 29, 2014. Bristol found the project corridor to be concurrent to what was seen in aerial photographs. The following potential signs of environmental contamination were not observed on the project corridor: modified waterbodies, stained areas/discolored stream banks, oil slicks/unusual colors on water, or dump areas. No fuel odors were detected within the project corridor. However, signs of environmental contamination were observed on adjacent properties during the site visit, associated with the City garage/maintenance building pad located south of the northern terminus of the proposed project corridor. Observations indicated the potential for contamination is moderate to high. The proposed project corridor will not interface with the existing garage pad and no excavation of material is associated with the proposed project; therefore any environmental compromise associated with the proposed project is low. Photographs from the site reconnaissance are provided in Appendix B, Site Reconnaissance Photo Log.

8.2 DATA GAPS

No significant data gaps, concerning environmental conditions within the subject property, were encountered by Bristol scientists during the compilation the Report.

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9.0 OPINION

The environmental concerns and potential for environmental compromise associated with the City garage/maintenance building pad located south of the northern terminus of the proposed project corridor is moderate to high. The proposed project corridor will not interface with the existing garage pad and no excavation of material is associated with the proposed project; therefore any environmental compromise associated with the proposed project is low. For any future development that should take place on the city garage/maintenance building pad that involves excavation, it is Bristol's recommendation that a Phase II Environmental Site Assessment be performed. A review of site history, regulatory records, and the conditions at the time of the site visit indicates a low probability of environmental compromise on the remainder of the project corridor that would warrant significant mitigation.

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10.0 CONCLUSIONS

No signs of environmental contamination, including discolored vegetation, were observed on the project corridor in aerial photographs. During the July 29, 2014 site reconnaissance visit, the overall appearance of the project corridor was clean. No environmental concerns were encountered in a review of federal and state records for the project corridor and adjacent properties. The findings of the Report indicate that the existing city garage/maintenance building pad located south of the northern terminus of the proposed project corridor has a moderate to high potential for environmental contamination. The remainder of the proposed project corridor is likely free of environmental contamination.

We have performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E 1527-13 of the project corridor located at approximately 66.07° North Latitude and -162.71° West Longitude (Sec. 19&20, T08N, R019W, Kateel River Meridian). Any exceptions to, or deletions from this practice are described in Section 11 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the project corridor.

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11.0 DEVIATIONS

There were no deviations from the ASTM 1527-13 template.

12.0 ADDITIONAL SERVICES

Not Applicable.

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13.0 REFERENCES

Alaska Department of Commerce, Community, and Economic Development (DCCED). 2014. Alaska Community Database website, Community Profiles Online: Deering, AK. Website: http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.cfm

ADEC. 2014a. Contaminated Sites Program Database. Website: http://www.dec.state.ak.us/SPAR/CSP/db_search.htm

ADEC. 2014b. Spills Database. Website: http://www.dec.state.ak.us/spar/perp/search/search.asp

ADEC, 2014c. Underground Storage Tanks (UST) Database. Website: http://www.dec.state.ak.us/applications/spar/SpillsDBQuery/search.asp

Environmental Data Resources, Inc. (EDR), 2013. *The EDR Radus Map Report with GeoCheck: West Airport Road Project*. October 31, 2013

EPA. 2014a. CERCLIS Hazardous Waste Sites. Search. Website: http://www.epa.gov/superfund/sites/cursites/index.htm

EPA, 2014b. Envirofacts. Website: http://www.epa.gov/enviro/

EPA, 2014c. National Priorities List. Website: http://www.epa.gov/superfund/sites/npl/where.htm

EPA, 2014d. Currently Designated Nonattainment Areas for All Criteria Pollutants List. Website: http://www.epa.gov/oar/oaqps/greenbk/ancl.html

Meinhardt, R. and Ramirez, A., 2012. *2012 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Cottonwood Subdivision Indian Reservation Roads (IRR) Project, Located in Sleetmute, Alaska.*

U.S. Army Corps of Engineers, Alaska District, 2013. Alaska Community Flood Hazard Data. Website: http://www.poa.usace.army.mil/About/Offices/Engineering/FloodplainManagement.aspx

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14.0 SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)

We declare that, to the best of our professional knowledge and belief we meet the definition of Environmental professional as defined by §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set for the in 40 CFR Part 312.

Prepared By:

Name: Jaclyn Wander Date: 5/2/2017

Signature: Jaclyn Wander Title: Civil Engineer II

Reviewed/Approved By:

Name: Isaac Pearson, P.E. Date: 5/2/2017

Signature: Isaac Pearson Title: Project Manager

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15.0 QUALIFICATION(S) OF ENVIRONMENTAL PROFESSIONAL(S)

Ms. Jaclyn Wander, E.I.T., Civil Engineer

Ms. Wander is an Alaskan resident and has been involved with Civil Engineering since 2013. Her design experience includes civil design, drafting, and as-built survey and plan sets for various infrastructure projects. Ms. Wander's design experience includes road projects, civil site design projects, water and sewer utility projects, water treatment plants, and surface drainage design. Jaclyn has a B.S. in Civil Engineering from the University of Nevada, Reno.

Mr. Isaac Pearson, P.E., Project Manager/Senior Civil Engineer

Mr. Pearson is a lifelong Alaskan resident, with a M.S. in Engineering Management from the University of Alaska Anchorage and over 20 years of planning, design, and construction experience. He has managed civil design projects throughout Alaska. Mr. Pearson is skilled in the use of drafting software, such as AutoCAD Civil 3D for the design and preparation of construction plans, and is experienced and knowledgeable in regard to design projects, site investigations, coordinating multiple design disciplines, and on-site engineering support during construction. Mr. Pearson is very experienced in a wide variety of design projects, report writing, public meetings, producing bid documents, and on-site supervision. Mr. Pearson's design experience includes road projects, civil site design projects, water and sewer utility projects, specialized design projects involving water problems and foundations, watershed analysis, drainage studies, surface drainage design, and geotechnical engineering.

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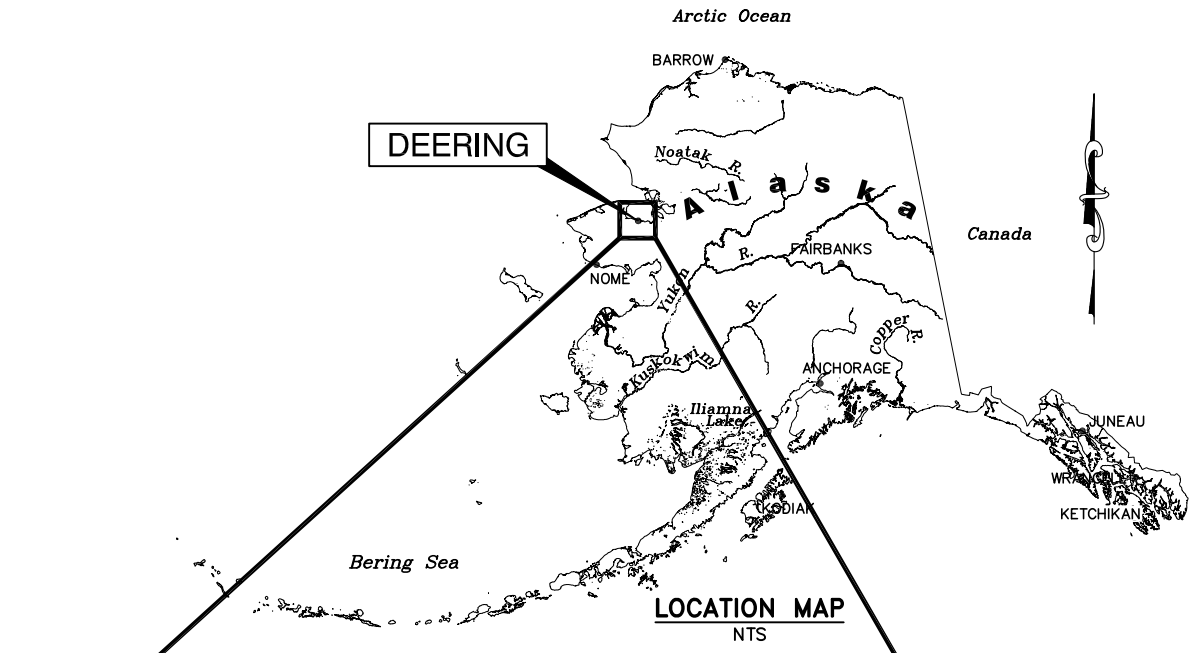
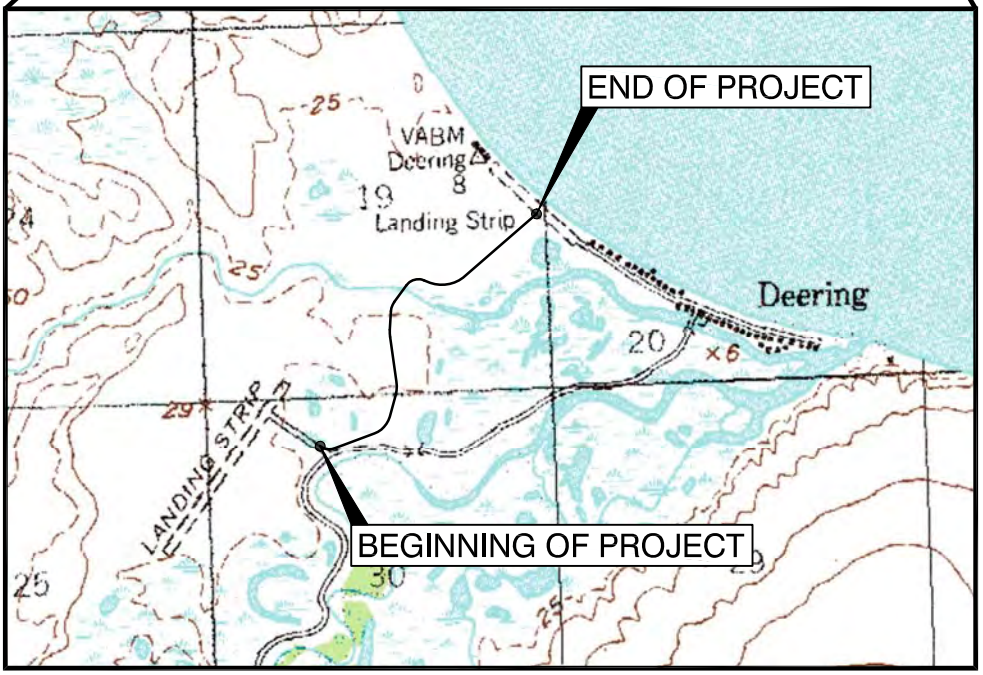
FIGURES



LOCATION MAP
NTS



VICINITY MAP
SCALE: NTS
SOURCE: U.S.G.S. QUAD
KOTZEBUE A2

FIGURE 1
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
VICINITY MAP

Bristol
ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 1
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	

PHOTO SOURCE: 2013 DCCED AEROMETRIC PHOTO

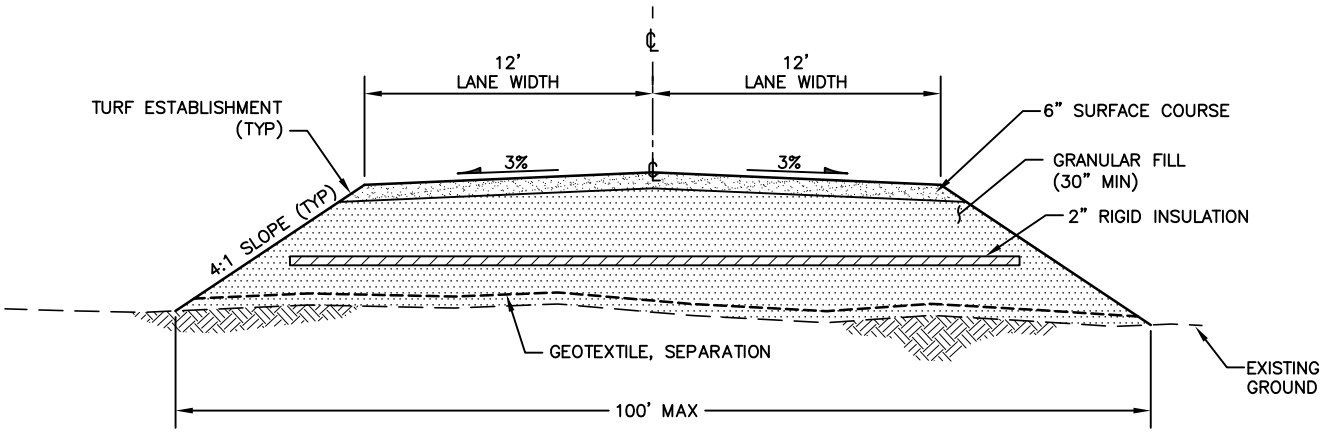
0 250 500
SCALE IN FEET

FIGURE 2
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
SITE PLAN

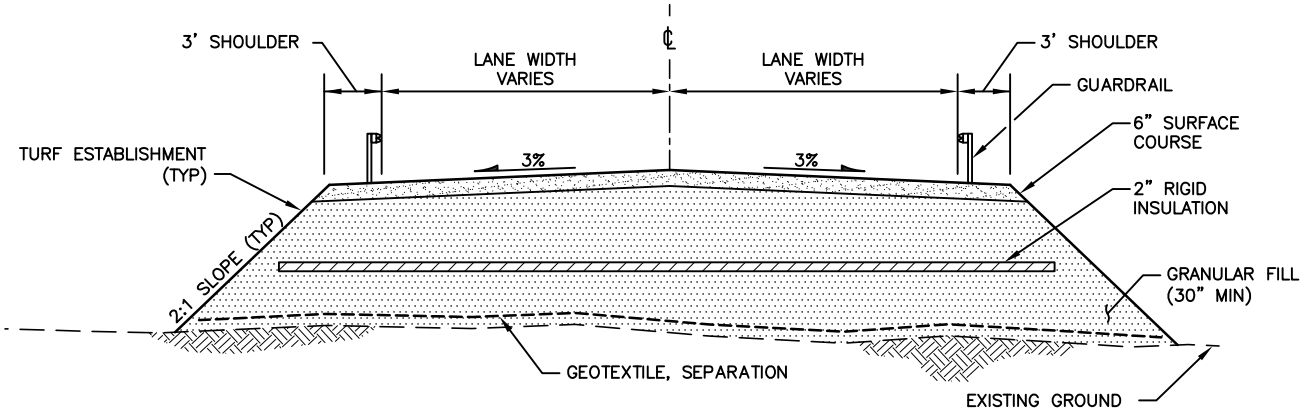
Bristol
ENGINEERING SERVICES CORPORATION

DATUM: -	DATE	MAY 2017	SHEET 2
PROJECTION: -	DWN.	JDW	of
PROJECT No. 32140053	SCALE	SHOWN	7
	APPRVD.	IPP	

Drawing: K:\JOBS\32140053 WEST AIRPORT RD\ACAD-ENVIRO\EA & ESA FIGS\32140053_FIG2_EA.DWG – Layout: FIG2
User: JWANDER Apr 27, 2017 – 3:59pm Xrefs: BR_85X11P.DWG – Images: DEERINGAREAN2013.TIF



1 — TWO–LANE CROWN FILL SECTION
SCALE: NTS



2 — TWO–LANE CROWN SECTION WITH GUARDRAIL
SCALE: NTS

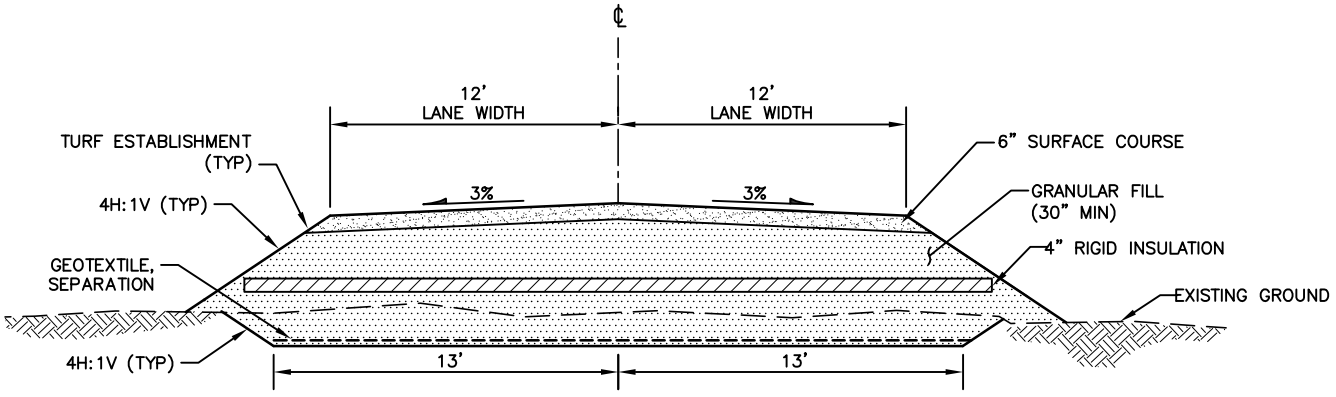
FIGURE 3
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS

Bristol
ENGINEERING SERVICES CORPORATION

DATUM: -
PROJECTION: -
PROJECT No. 32140053

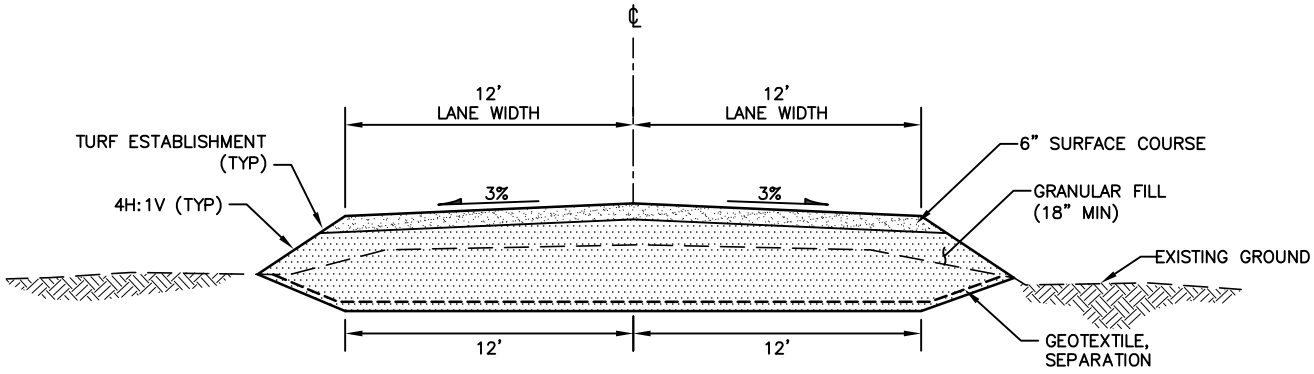
DATE MAY 2017
DWN. JDW
SCALE SHOWN
APPRVD. IPP

SHEET 3 of 7



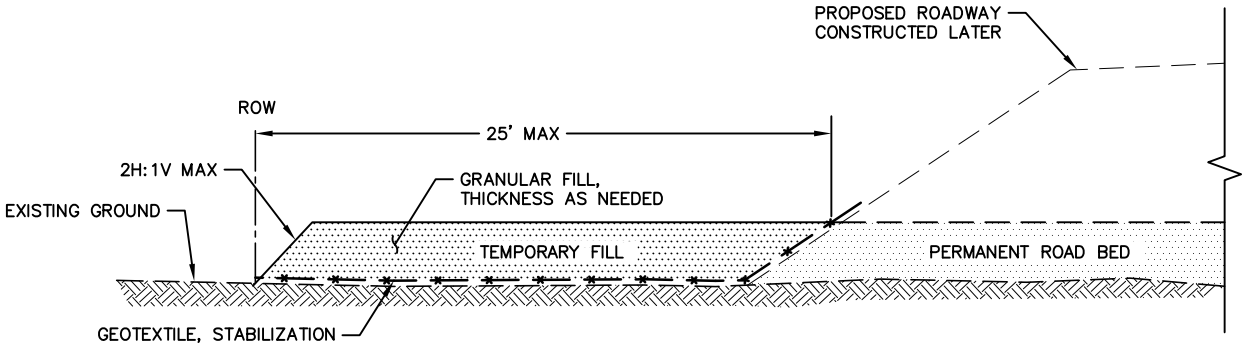
1 — TWO–LANE CROWN FILL SECTION WITH EXCAVATION

SCALE: NTS



2 — TWO–LANE CROWN ROAD RECONSTRUCTION

SCALE: NTS



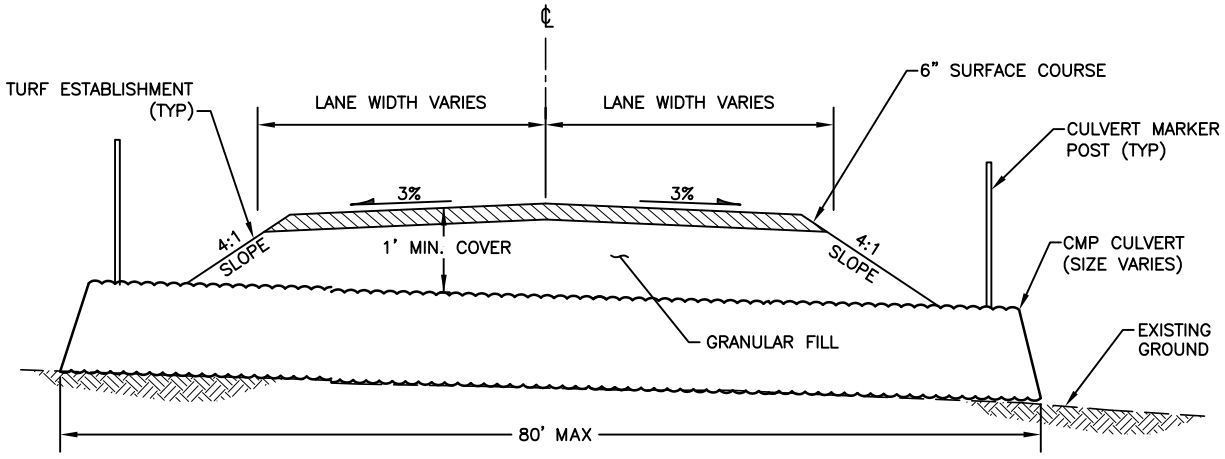
3 — TEMPORARY CONSTRUCTION PAD

SCALE: NTS

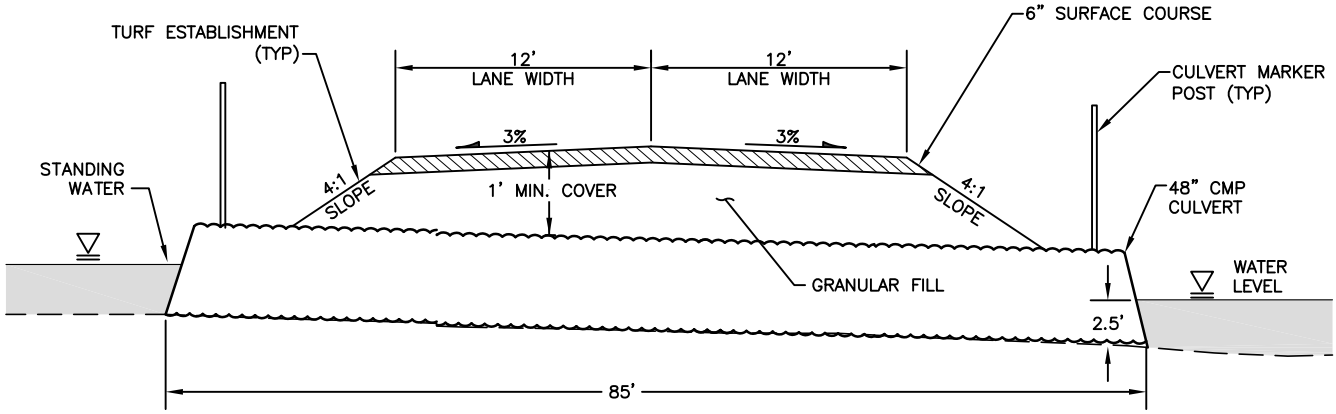
FIGURE 4
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS

Bristol
ENGINEERING
SERVICES CORPORATION

DATUM: -	DATE	MAY 2017	SHEET 4
PROJECTION: -	DWN.	JDW	of
PROJECT No. 32140053	SCALE	SHOWN	7
	APPRVD.	IPP	



1 — TYPICAL CULVERT SECTION
SCALE: NTS

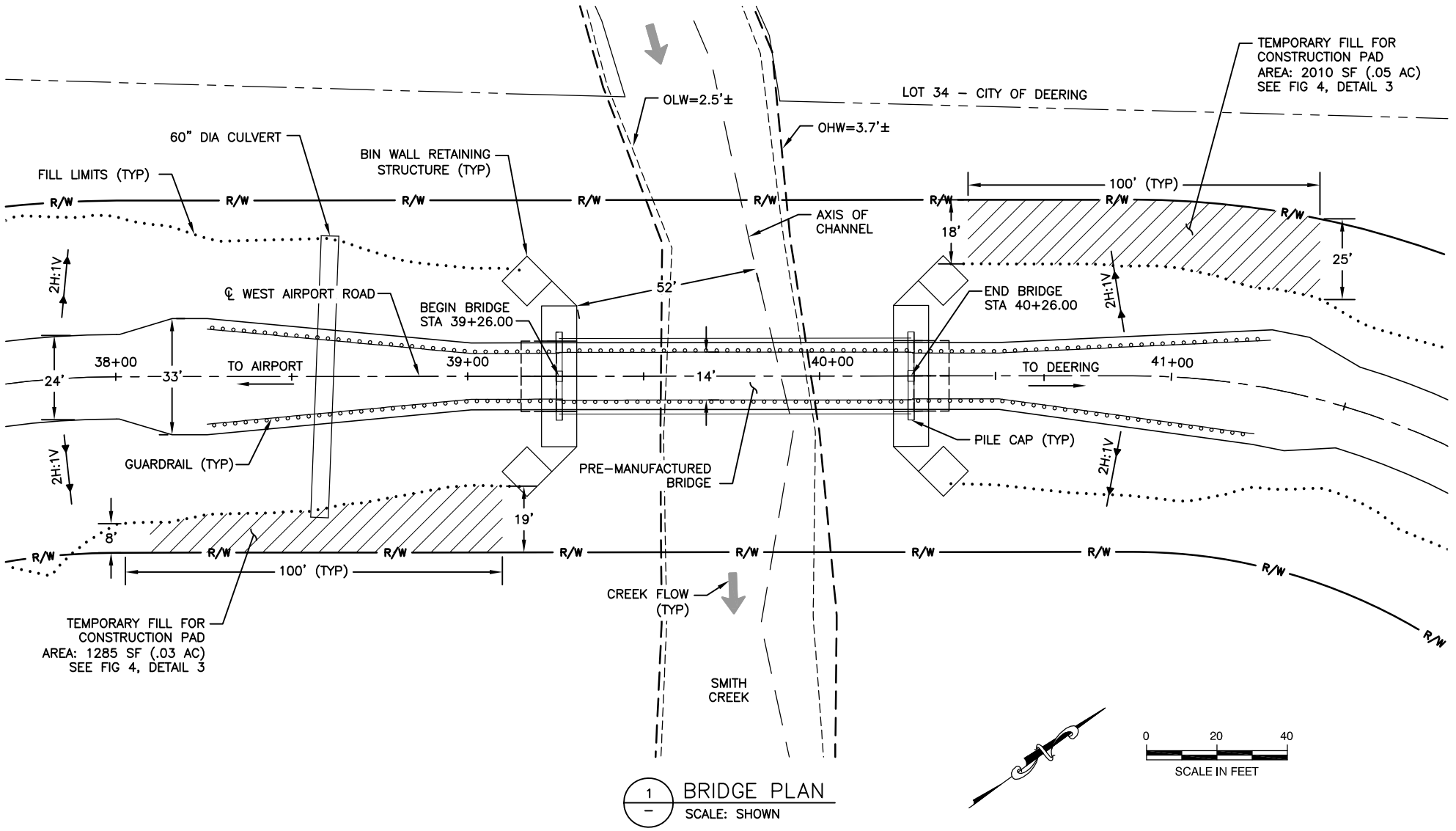


2 — SPECIAL CULVERT SECTION
SCALE: NTS

FIGURE 5
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
TYPICAL SECTIONS

Bristol ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 5
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	



1 / - BRIDGE PLAN
SCALE: SHOWN

NOTES

1. VEHICULAR BRIDGE FOR PUBLIC USE WILL BE AASHTO-LRFD COMPLIANT.
2. NO FILL WILL BE PLACED BELOW OHW.

ABBREVIATIONS

OHW = ORDINARY HIGH WATER (SEPTEMBER 2013)
OLW = ORDINARY LOW WATER (SEPTEMBER 2013)

MAP INFO

PARCEL OWNER
NANA REGIONAL CORPORATION INC.

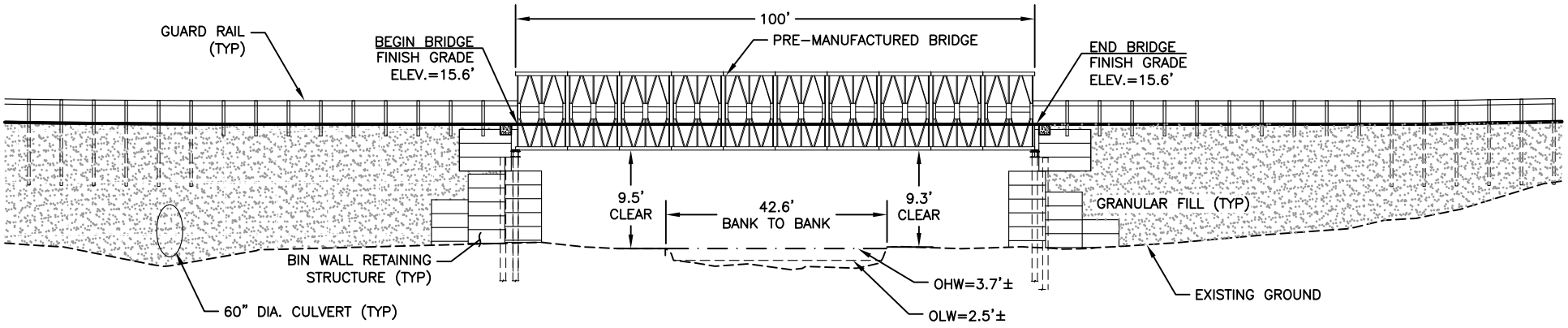
HORIZONTAL DATUM:
ALASKA STATE PLANE NAD83, ZONE 7, U.S. FEET

VERTICAL DATUM:
NAVD88

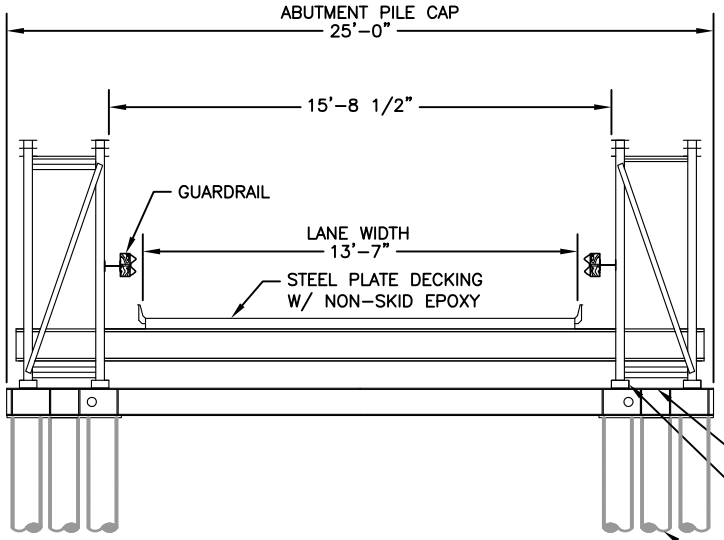
FIGURE 6
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
BRIDGE PLAN

Bristol ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 6
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	



1 – BRIDGE ELEVATION AT BRIDGE ℄
SCALE: SHOWN



2 – VEHICULAR BRIDGE SECTION
SCALE: NTS

NOTES

1. VEHICULAR BRIDGE FOR PUBLIC USE WILL BE AASHTO-LRFD COMPLIANT.

HORIZONTAL DATUM:
ALASKA STATE PLANE NAD83, ZONE 7, U.S. FEET

VERTICAL DATUM:
NAVD88

FIGURE 7
DEERING, ALASKA
WEST AIRPORT ROAD PROJECT
BRIDGE ELEVATION & SECTION

Bristol ENGINEERING SERVICES CORPORATION

DATUM: -	DATE MAY 2017	SHEET 7
PROJECTION: -	DWN. JDW	of
PROJECT No. 32140053	SCALE SHOWN	7
	APPRVD. IPP	

APPENDIX A

Site Reconnaissance Notes

Site Reconnaissance Notes

Project: **West Airport Road (Deering) (#32140053)**
Subject: **Phase I Environmental Site Assessment Site Reconnaissance**

Date of Visit: July 29, 2014

This trip report summarizes the Site Reconnaissance visit to Deering, Alaska on July 29, 2014. During the visit, Susan Luetters and Eric Lindeen with Bristol Engineering Services Corporation, traversed the entire length of the proposed project corridor, taking notes and pictures and probing the soil as they proceeded throughout the surrounding property and buildings. There were no climatological or physical barriers preventing assessment of the entire corridor. The weather was clear and sunny. Only exterior observations were made; no building interiors were inspected during the visit.

The overall appearance of the project corridor exterior surfaces appeared clean, with no discolored vegetation, unusual odors or indications of pits, unnatural ponds, or lagoons. However, Bristol personnel encountered one location that showed signs of potential environmental issues. Surface staining was visible in multiple locations throughout the shop yard of the city garage/maintenance building located at the northern terminus of the proposed corridor. Additionally, various equipment and debris were noted including approximately 75 abandoned 55-gallon fuel drums, 5 decommissioned day tanks, soaked utility poles, and abandoned machinery.

Observations made during the site visit indicated the potential for environmental contamination to be moderate to high. However, the proposed road will terminate at the interface with the existing garage pad, and no excavation of material is associated with the proposed project; therefore any environmental compromise associated with the proposed project is low. No additional signs of potential environmental contamination were encountered including modified waterbodies, stained areas/discolored stream banks, oil slicks/unusual colors on water, or dump areas. No fuel odors were detected within the project corridor.

Overall, Bristol found the project corridor to be concurrent to what was seen in aerial photographs. Conditions during the site visit indicate a low probability of environmental compromise on the project corridor, except at the city garage/maintenance building, that would warrant significant mitigation. For any future development that should take place on the city garage/maintenance building pad that involves excavation, it is Bristol's recommendation that a Phase II Environmental Site Assessment be performed.

APPENDIX B

Site Reconnaissance Photo Log

Phase I ESA Site Reconnaissance Photolog
West Airport Road Project – Deering, AK

Photo 1: Northern view of the City Maintenance yard from the proposed road alignment.

Photo 2: Northeastern view from proposed alignment. City Maintenance yard storage building and old equipment in foreground; City shop can be seen in the back left of photo.

Photo 3: Northern view from alignment. Debris scattered throughout the City shop yard. Connex storage boxes are visible in back right of photo.

Photo 4: Northwest view from City Maintenance yard/shop.

Photo 5: Western view from City Maintenance yard.

Photo 6: Southwestern view from City Maintenance yard/shop. Surface staining is visible in foreground.

Photo 7: Southern view from City Maintenance yard; the proposed alignment with extend south from this point.

APPENDIX C

Environment Data Resources Report

West Airport Road Project
West Airport Road
Deering, AK 99736

Inquiry Number: 3773872.2
October 31, 2013

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/31/13

Site Name:
West Airport Road Project
West Airport Road
Deering, AK 99736

Client Name:
Bristol Engineering Services
111 W. 16th Avenue
Anchorage, AK 99501

EDR Inquiry # 3773872.2

Contact: Eric Lindeen

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Bristol Engineering Services Corporation were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: West Airport Road Project
Address: West Airport Road
City, State, Zip: Deering, AK 99736
Cross Street:
P.O. # NA
Project: West Airport Road Project
Certification # 24E6-440F-9C4A

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results
Certification # 24E6-440F-9C4A

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

Bristol Engineering Services Corporation (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

West Airport Road Project
West Airport Road
Deering, AK 99736

Inquiry Number: 3773872.1s
October 31, 2013

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

WEST AIRPORT ROAD
DEERING, AK 99736

COORDINATES

Latitude (North):	66.0787000 - 66° 4' 43.32''
Longitude (West):	162.7486000 - 162° 44' 54.96''
Universal Tranverse Mercator:	Zone 3
UTM X (Meters):	601855.0
UTM Y (Meters):	7330322.0
Elevation:	24 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	N/A
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

EXECUTIVE SUMMARY

Federal CERCLIS list

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls
LUCIS ..... Land Use Control Information System

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS ..... Contaminated Sites Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Facilities

State and tribal leaking storage tank lists

LUST ..... Leaking Underground Storage Tank Database
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ..... Underground Storage Tank Database
AST ..... Regulated Aboveground Storage Tanks
INDIAN UST ..... Underground Storage Tanks on Indian Land
FEMA UST ..... Underground Storage Tank Listing

State and tribal institutional control / engineering control registries

ENG CONTROLS ..... Engineering Controls Site Listing

INST CONTROL ..... Contaminated Sites with Institutional Controls

State and tribal voluntary cleanup sites

INDIAN VCP ..... Voluntary Cleanup Priority Listing
VCP ..... Voluntary Cleanup Program sites

State and tribal Brownfields sites

BROWNFIELDS ..... Identified and/or Proposed Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
ODI ..... Open Dump Inventory
SWRCY ..... Recycling Facilities
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ..... Clandestine Drug Labs
CDL ..... Illegal Drug Manufacturing Sites
US HIST CDL ..... National Clandestine Laboratory Register

Local Land Records

LIENS 2 ..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
SPILLS ..... Spills Database
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ..... RCRA - Non Generators
DOT OPS ..... Incident and Accident Data
DOD ..... Department of Defense Sites
FUDS ..... Formerly Used Defense Sites
CONSENT ..... Superfund (CERCLA) Consent Decrees
ROD ..... Records Of Decision
UMTRA ..... Uranium Mill Tailings Sites
US MINES ..... Mines Master Index File
TRIS ..... Toxic Chemical Release Inventory System
TSCA ..... Toxic Substances Control Act
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
UIC	UIC Information
DRYCLEANERS	Drycleaner Facility Listing
NPDES	Wastewater Discharge Permit Listing
AIRS	AIRS Facility Listing
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
COAL ASH	Coal Ash Disposal Sites
Financial Assurance	Financial Assurance Information Listing
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
COAL ASH DOE	Steam-Electric Plant Operation Data
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
PRP	Potentially Responsible Parties
2020 COR ACTION	2020 Corrective Action Program List

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

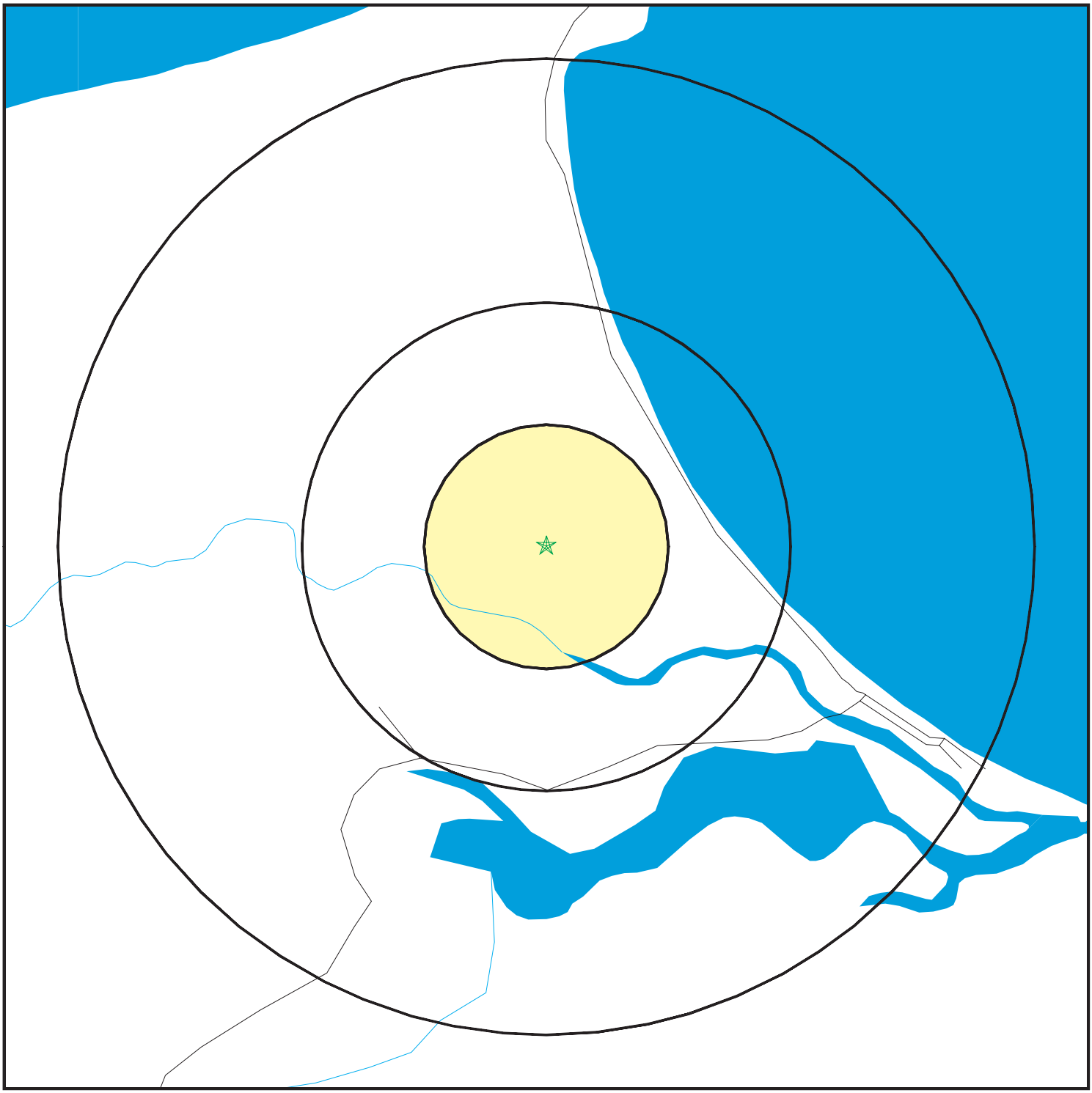
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
DEERING AIRPORT	FINDS

OVERVIEW MAP - 3773872.1s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA

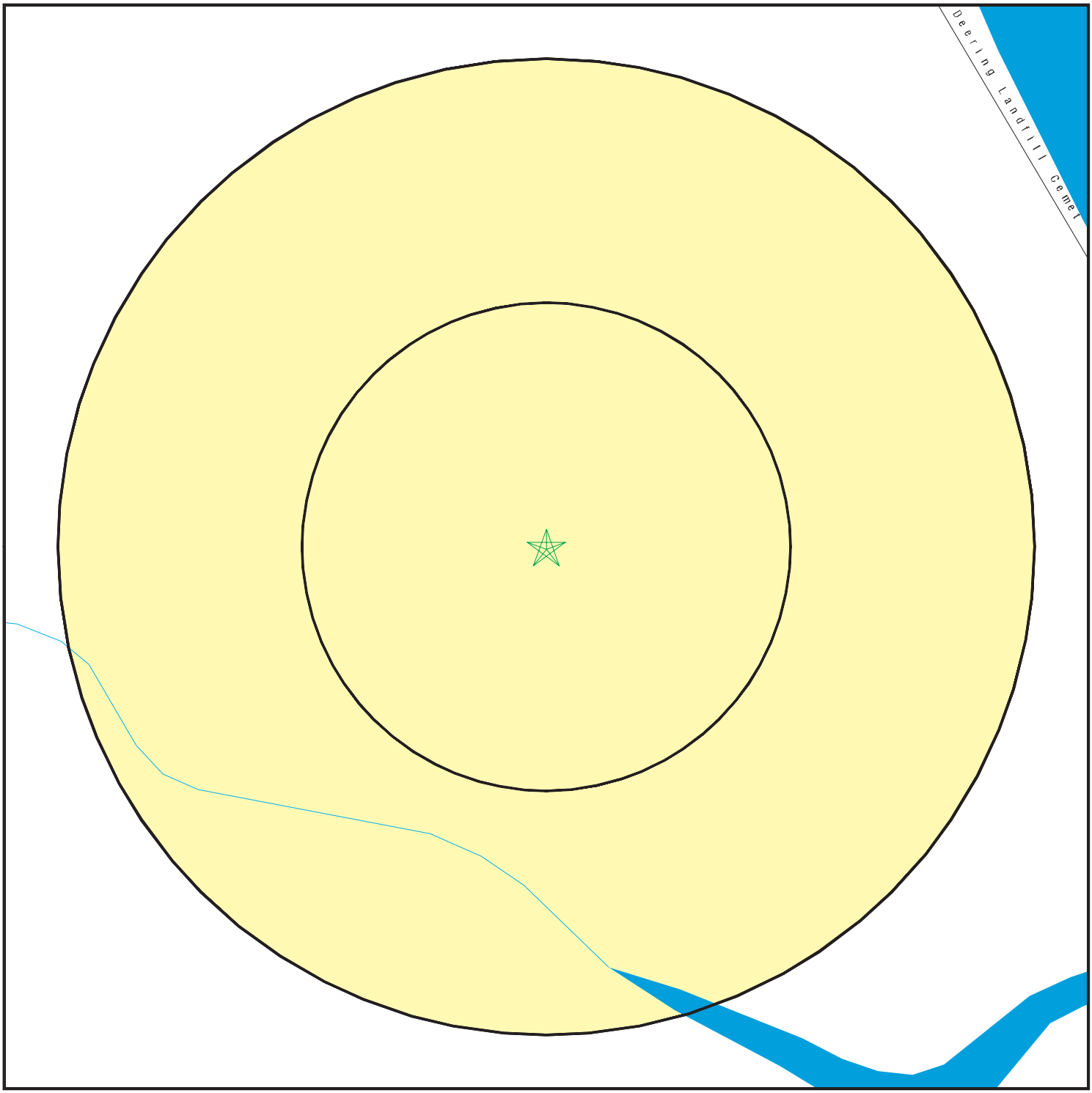
0 1/4 1/2 1 Miles

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	West Airport Road Project	CLIENT:	Bristol Engineering Services Corporation
ADDRESS:	West Airport Road Deering AK 99736	CONTACT:	Eric Lindeen
		INQUIRY #:	3773872.1s
LAT/LONG:	66.0787 / 162.7486	DATE:	October 31, 2013 7:21 pm

DETAIL MAP - 3773872.1s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	West Airport Road Project	CLIENT:	Bristol Engineering Services Corporation
ADDRESS:	West Airport Road Deering AK 99736	CONTACT:	Eric Lindeen
		INQUIRY #:	3773872.1s
LAT/LONG:	66.0787 / 162.7486	DATE:	October 31, 2013 7:22 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 1 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
DEERING	1011988010	DEERING AIRPORT	UNKNOWN		FINDS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 10/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 10/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 10/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/29/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 72

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 10/09/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/29/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 72

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/15/2013
Next Scheduled EDR Contact: 09/02/2013
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/17/2013
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 29

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Contaminated Sites Database

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 11/27/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 12/28/2012
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 06/26/2013
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 9

Source: Department of Environmental Conservation
Telephone: 907-269-7632
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/04/2013
Number of Days to Update: 46

Source: Department of Environmental Conservation
Telephone: 907-465-5301
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 11/01/2012
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 162

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/02/2013
Next Scheduled EDR Contact: 11/11/2013
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/06/2013
Date Data Arrived at EDR: 02/08/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/05/2013
Date Data Arrived at EDR: 02/06/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 65

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 02/28/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 43
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45
Source: Department of Environmental Conservation
Telephone: 907-269-7504
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Semi-Annually

AST: Regulated Aboveground Storage Tanks
The list covers "regulated" facilities with storage capacities above 10,000 barrels (or 5,000 barrels of crude).

Date of Government Version: 01/05/2005
Date Data Arrived at EDR: 01/06/2005
Date Made Active in Reports: 02/02/2005
Number of Days to Update: 27
Source: Department of Environmental Conservation
Telephone: 907-465-5231
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/21/2013
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 45
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 11/07/2012
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 156

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/02/2013
Next Scheduled EDR Contact: 11/11/2013
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/06/2013
Date Data Arrived at EDR: 02/08/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 02/28/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 43

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/02/2012
Date Data Arrived at EDR: 08/03/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 94

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/05/2013
Date Data Arrived at EDR: 02/06/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 65

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Controls Site Listing

A listing of sites with engineering controls in place included in the Contaminated Sites.

Date of Government Version: 11/27/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 12/28/2012
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

Inst Control: Contaminated Sites with Institutional Controls

Contaminated sites that have institutional controls.

Date of Government Version: 11/27/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 12/28/2012
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Semi-Annually

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program sites

Sites involved in the Voluntary Cleanup Program.

Date of Government Version: 09/03/2013
Date Data Arrived at EDR: 09/03/2013
Date Made Active in Reports: 10/04/2013
Number of Days to Update: 31

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 10/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 14

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Identified and/or Proposed Brownfields Sites
Brownfield properties are defined by U.S Environmental Protection Agency (EPA) as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contamination." DEC is developing resources to assist eligible entities in Alaska in applying for EPA brownfields grants. The program also will provide technical assistance and perform some site assessments, The purpose of these assessments is to assist local redevelopment efforts on previously contaminated properties that are vacant or underused.

Date of Government Version: 11/27/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 12/28/2012
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 907-451-2166
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/24/2013
Date Data Arrived at EDR: 06/25/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycling Facilities

A listing of Recycling centers in the state of Alaska.

Date of Government Version: 06/26/2013
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 9

Source: Department of Environmental Conservation
Telephone: 907-269-7802
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/31/2013
Next Scheduled EDR Contact: 11/18/2013
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/06/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 22

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/04/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Quarterly

CDL: Illegal Drug Manufacturing Sites

A list of properties that have been determined to be illegal drug manufacturing sites.

Date of Government Version: 06/08/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Environmental Conservation
Telephone: 907-269-7543
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/06/2013
Date Data Arrived at EDR: 04/25/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/24/2013
Next Scheduled EDR Contact: 11/11/2013
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 55

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

SPILLS: Spills Database

Oil and hazardous substance releases to be reported to the Department of Environmental Conservation.

Date of Government Version: 07/18/2013
Date Data Arrived at EDR: 07/19/2013
Date Made Active in Reports: 08/07/2013
Number of Days to Update: 19

Source: Department of Environmental Conservation
Telephone: 907-465-5242
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Semi-Annually

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 07/21/2010
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/08/2013
Number of Days to Update: 36

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/05/2013
Next Scheduled EDR Contact: 11/18/2013
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/07/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 57

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/18/2012
Date Data Arrived at EDR: 03/13/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 30

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/13/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/28/2013
Next Scheduled EDR Contact: 09/09/2013
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 28

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/05/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/30/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/09/2014
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2012
Date Data Arrived at EDR: 01/16/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 114

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/14/2013
Date Data Arrived at EDR: 03/20/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 112

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/09/2013
Date Data Arrived at EDR: 04/11/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 29

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/08/2013
Date Data Arrived at EDR: 03/21/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 111

Source: EPA
Telephone: (206) 553-1200
Last EDR Contact: 09/11/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Biennially

UIC: UIC Information
A listing of underground injection control wells.

Date of Government Version: 09/11/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/04/2013
Number of Days to Update: 23

Source: Oil & Gas Conservation Commission
Telephone: 907-793-1224
Last EDR Contact: 09/11/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Quarterly

DRYCLEANERS: Drycleaner Facility Listing
A listing of drycleaning facilities in Alaska.

Date of Government Version: 02/15/2006
Date Data Arrived at EDR: 02/16/2006
Date Made Active in Reports: 03/15/2006
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 907-269-7577
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: No Update Planned

NPDES: Wastwater Discharge Permit Listing
A listing of permitted wastewater facilities.

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/04/2013
Number of Days to Update: 10

Source: Department of Environmental Conservation
Telephone: 907-465-5480
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Varies

AIRS: AIRS Facility Listing
A listing of permitted airs facilities.

Date of Government Version: 07/15/2013
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 08/07/2013
Number of Days to Update: 22

Source: Department of Environmental Conservation
Telephone: 907-451-2103
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/16/2013
Next Scheduled EDR Contact: 11/25/2013
Data Release Frequency: Varies

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013
Date Data Arrived at EDR: 07/03/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 72

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/04/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: N/A

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/29/2013
Date Data Arrived at EDR: 02/14/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

Financial Assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 04/24/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 18

Source: Department of Environmental Conservation
Telephone: 907-269-7802
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH: Coal Ash Disposal Sites
A listing of coal ash disposal site locations.

Date of Government Version: 10/01/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 6

Source: Department of Environmental Conservation
Telephone: 907-451-2135
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/30/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/30/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/07/2013
Next Scheduled EDR Contact: 11/25/2013
Data Release Frequency: Quarterly

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/04/2013
Date Data Arrived at EDR: 03/15/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/27/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/02/2013
Next Scheduled EDR Contact: 11/11/2013
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/15/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/13/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/04/2013
Number of Days to Update: 46

Source: Department of Environmental Conservation
Telephone: 907-269-8149
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/07/2013
Date Made Active in Reports: 09/10/2013
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/07/2013
Next Scheduled EDR Contact: 11/18/2013
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Facilities Database
Source: Department of Education & Early Development
Telephone: 907-465-2800

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Data
Source: Department of Fish & Game
Telephone: 907-465-4100

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

2008 TIGER© Map, produced by the U.S. Census Bureau.

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

WEST AIRPORT ROAD PROJECT
WEST AIRPORT ROAD
DEERING, AK 99736

TARGET PROPERTY COORDINATES

Latitude (North):	66.0787 - 66° 4' 43.32''
Longitude (West):	162.7486 - 162° 44' 54.96''
Universal Tranverse Mercator:	Zone 3
UTM X (Meters):	601855.0
UTM Y (Meters):	7330322.0
Elevation:	24 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property:	N/A
Source:	USGS 7.5 min quad index

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

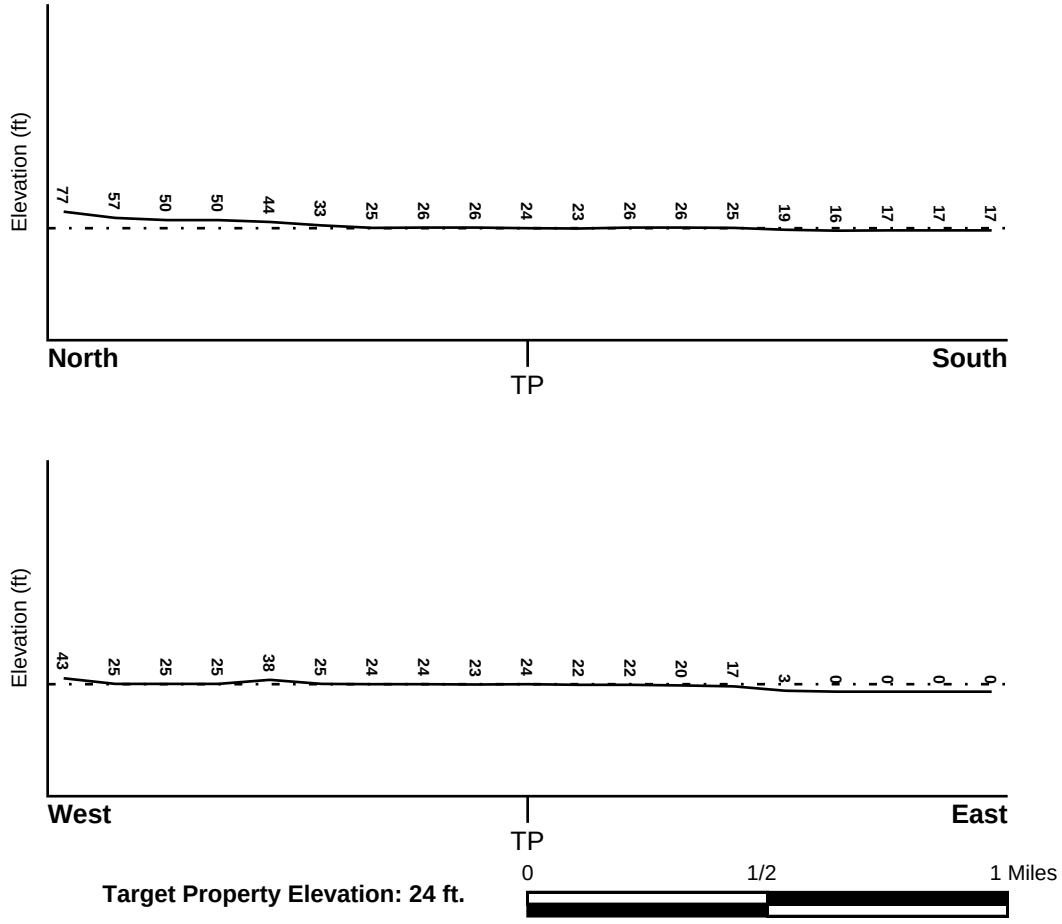
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ENE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 24 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
NORTHWEST_ARCTIC, AK	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
Not Reported	N

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	-
System:	-
Series:	-
Code:	N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

No detail available.

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

PHYSICAL SETTING SOURCE MAP - 3773872.1s

- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

0 1/4 1/2 1 Miles

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

N

SITE NAME:	West Airport Road Project	CLIENT:	Bristol Engineering Services Corporation
ADDRESS:	West Airport Road Deering AK 99736	CONTACT:	Eric Lindeen
		INQUIRY #:	3773872.1s
LAT/LONG:	66.0787 / 162.7486	DATE:	October 31, 2013 7:22 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Data
Source: Department of Fish & Game
Telephone: 907-465-4100

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

RADON

State Database: AK Radon
Source: University of Alaska Fairbanks
Telephone: 907-474-7201
Radon Information

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

STREET AND ADDRESS INFORMATION

2008 TIGER© Map, produced by the U.S. Census Bureau.

APPENDIX D

BIA/SHPO Consultation Letter

10.10.14 3130-1K BIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGION

Branch of Regional Archeology
3601 C Street, Suite 1200
Anchorage, Alaska 99503
(907) 271-4003

6 October 2014

Judith E. Bittner
State Historic Preservation Officer
DNR/Division of Parks and Outdoor Recreation
Office of History and Archaeology
550 West 7th Ave., Suite 1310
Anchorage, Alaska 99501

Dear Ms. Bittner,

Enclosed you will find a copy of *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska.* This report was prepared by Robert L. Meinhardt, Amy Ramierz, Annalisa Heppner, and Phillip T. Ashlock II of True North Sustainable Development Solutions (TNSDS). The Native Village of Deering, the Tribe, has received funds from the Bureau of Indian Affairs' Indian Reservation Roads Program to design an evacuation road from the village center to the airport for flooding, as well as for the movement of heavy machinery in and out of the village. In turn, the Tribe has contracted with Bristol Engineering Services Corporation (BESC) to develop the final design for the West Airport Road Project (BIA Project Number E04117C4). BESC has subcontracted with TNSDS to perform a cultural resource investigation within the proposed APE. The proposed APE consists of a 16 to 20 foot-wide corridor that extends approximately one mile in length for the road itself. Gravel for the project will be sourced locally from two borrow pits; both sources were also included in the APE, and were inventoried as part of this project.

Regional Archeology has reviewed the accompanying cultural resource survey report and finds there are no historic properties within the APE of the project. An on-the-ground cultural resources survey, including subsurface testing, of the APE was conducted. No cultural resources were identified within the project area. If you have any questions regarding this document, please contact me at 271-4003.

No Historic Properties Affected AHP
Alaska State Historic Preservation Officer
Date: 10.10.14 File No.: 3130-1KBIA
Please review: 36 CFR 800.13 / A.S. 41.35.070(d)

Sincerely,

Rita L. Mueglue

ACTING FOR Ricky Hoff
Regional Archeologist

Attachments:
1) Office of History and Archaeology Cover Sheet
2) *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska (Meinhardt, et al. 2013)*

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGION

Branch of Regional Archeology
3601 C Street, Suite 1100
Anchorage, Alaska 99503
(907) 271-4003

TO: NATIVE VILLAGE OF DEERING
ALVIN IYATUNGUK, SR., PRESIDENT
PO BOX 36089
DEERING, ALASKA 99736

UNDERTAKING: **West Airport Road, Deering, Alaska**

FINDINGS OF SECTION 106 REVIEW: No Historic Properties Affected

RECOMMENDATION: Proceed with the **West Airport Road, Deering, Alaska Project.**

IDENTIFICATION EFFORTS: Identification included a review of records and previous archeological surveys in the area conducted by Robert L. Meinhardt, et al. of True North Sustainable Development Solutions. The archeological review and investigation report, *2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska*, was prepared by Robert L. Meinhardt, Amy Ramirez, Annalisa Heppner, and Phillip T. Ashlock II in September 2013.

AREA OF POTENTIAL EFFECT (APE): The project involves the construction of a new road and bridge, which will serve as the primary evacuation route from the village to the airport during seasonal and tidal flooding, when the existing road is typically washed out. The new road will be between 16 and 20 feet wide, and will include a bridge over Smith Creek with a minimum load capacity of 50,000 pounds. Gravel for the road will be taken from existing gravel borrows along the existing Deering Airport Road. Additional details of the APE are described in the above noted cultural resource survey report.

AHRS SITES: No archeological resources were identified within the APE.

CONSULTED PARTIES: Native Village of Deering
Alaska State Historic Preservation Office (SHPO)
Bureau of Indian Affairs

MANAGEMENT RECOMMENDATIONS: The Bureau of Indian Affairs is issuing a finding of "No Historic Properties Affected" for the proposed **West Airport Road, Deering, Alaska.** These findings are based on the results of a cultural resources inventory, including a pedestrian survey of the subject area by cultural resource professionals from True North Sustainable Development Solutions, under the supervision of Archeologist and Architectural Historian Robert Meinhardt. The report of the investigation (*2013 Report of Cultural Resources Investigation and Recommendations for Issuing a Section 106 Finding for the Design of West Airport Road, Located in Deering, Alaska)*, was prepared by Robert L. Meinhardt, Amy Ramirez, Annalisa Heppner, and Phillip T. Ashlock II in September 2013. In compliance with Section 106 of the National Historic Preservation Act (16 USC 470*f*) of 1966 and 36 CFR §800, the Bureau of Indian Affairs is recommending the **West Airport Road, Deering, Alaska Project** proceed. The Alaska State Historic Preservation Officer's concurrence for no historic properties is on file.

There were no archeological sites identified within the APE of the project and no archeological monitoring will be required. The finding of no historic properties affected only applies to the current project. Any additional work outside of the current project's footprint may require additional section 106 review. In accordance with 36 CFR §800.4 any changes to the project design may require further section 106 review.

The construction contract will include the following language:

"NATIVE VILLAGE OF DEERING will comply with the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470*f*), plus the Native American Graves Protection and Repatriation Act of 1990 (25 U. S. C. 3001-3013), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm), and all implementing regulations."

"If any previously unknown archeological or historic remains are discovered, either during the life of this revocable use permit, or in the course of associated activities on this property, the NATIVE VILLAGE OF DEERING shall protect them from disturbance pending further recommendations from the BIA Regional Archeologist (36 CFR §800.13[b])."

"If any previously unknown human remains or associated cultural items are discovered either during the life of this revocable use permit (lease), or in the course of associated activities on this property, the NATIVE VILLAGE OF DEERING shall protect them from disturbance pending further recommendations from the Regional Archeologist. Any person who knows of the discovery of human remains or associated cultural items must provide notification by telephone, and follow up in writing, to the BIA Regional Archeologist (43 CFR §10.4)."

15 October 2014
Ricky Hoff Date
Regional Archeologist

cc: Susan Leutters, Bristol Engineering Services Corporation
Gregory Smith, Civil Engineer, Transportation, Bureau of Indian Affairs, Alaska Region

APPENDIX E

ARCHAEOLOGICAL REPORT

trueNORTH
sustainable development solutions

2013 REPORT OF CULTURAL RESOURCES INVESTIGATION AND RECOMMENDATIONS FOR ISSUING A SECTION 106 FINDING FOR THE DESIGN OF WEST AIRPORT ROAD, LOCATED IN DEERING, ALASKA

SEPTEMBER 2013

Prepared for:
Bristol Engineering Services Corporation

Prepared by:
Robert L. Meinhardt, M.A.
Amy Ramirez
Annalisa Heppner
Phillip T. Ashlock II, Ph.D

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Native Village of Deering has acquired funds from the Bureau of Indian Affairs (BIA) Indian Reservation Roads (IRR) Program to design an evacuation road from the village center to the airport for flooding and the movement of heavy machinery in and out of the village. Bristol Engineering Services Corporation (BESC) is contracted by the Native Village of Deering to develop a final design for the West Airport Road Project (BIA Project Number E04117C4). Given the West Airport Road Project is undertaken by the Native Village of Deering with financial assistance from BIA, compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36CFR§800) is required prior to development of a final design for the evacuation road. As the lead federal agency, the BIA Branch of Regional Archaeology is responsible for carrying out consultation per the Act, and they have contracted BESC to provide recommendations on whether or not the project will result in adverse effects to historic properties. To assist with the consultation process per 36CFR§800, BESC will need to propose an Area of Potential Effects (APE), identify any cultural resources within the APE that may constitute historic properties per the Act, and make recommendations to the lead federal agency for issuing a finding for the undertaking.

BESC does not have professional expertise on staff to provide Section 106 findings and recommendations. As such, True North Sustainable Development Solutions (TNSDS), LLC, was sub-contracted to perform a cultural resource investigation within a proposed APE, and provide recommendations for issuing a Section 106 finding. TNSDS Principal Preservation Consultant Robert L. Meinhardt, III, M.A., and Archaeologist Annalisa Heppner carried out the investigation. A comprehensive report intended to provide BESC with information necessary for making recommendations to the BIA Branch of Regional Archaeology for compliance with Section 106 of the NHPA was prepared by TNSDS after the field work was complete. A summary of the results from the literature review, archival research and archaeological survey is included in this report, as well as context statements for the prehistory and history of the Seward Peninsula and Deering, a description of survey methodology, and an evaluation for inclusion in the National Register of Historic Places (NRHP) for those properties identified as being historic in age.

TNSDS initiated its cultural resources investigation by conducting a literature and archival review of previous cultural resources surveys and sites in the area that have been recorded in the Alaska Heritage Resources Survey (AHRS) database, which facilitated the definition of a proposed APE and the completion of an intensive survey. Neither the survey nor a more extensive literature and archival review revealed any cultural resources that constitute historic properties pursuant to Section 106 of the NHPA, and thus a finding of no historic properties affected is recommended for the design of the West Airport Road Project.

INTRODUCTION

Project Location and Physical Setting

The small, coastal village of Deering is roughly 205 miles east of Russia, 57 miles south of Kotzebue, and 510 miles northwest of Anchorage. It is within sections 19, 20, 30, and 29 of Township 8 North, Range 19 West of the Kateel River Meridian (ADCED 2013).

Deering is situated on a thin spit along the southern edge of Kotzebue Sound, which is on the northern coast of the Seward Peninsula. To the south of the village is the Smith Creek Marsh – a tributary stream of the Inmachuk River and an expanse of wetlands. Deering Airport Road goes beyond the airport, paralleling Inmachuk River for nearly 20 miles, where it ends at the abandoned mining town of Utica.

The project area extends approximately one mile south from Deering, at the current city garage located near the west end of town, and terminates at its intersection with Deering Airport Road, just north of the airport cut-off (Figure 1). The landscape is composed of low-lying wetlands, tundra, tundra grass, tussocks, blueberries, crowberries, cloudberries, tundra moss and small alder thickets in disturbed areas. Terraces paralleling the Smith Creek Marsh are the most elevated areas in the project area. Two remnant trails are present within and near the project area – one located to the west of the garage and the other follows portions of the proposed road corridor. The trail to the west of the garage, which consists of mostly overgrown vegetation and gravel fill, likely functioned as an access road to the former dump. The other trail is difficult to observe because extreme high tides, active flooding of Smith Creek, and permafrost movement have compromised its physical attributes.

Figure 1. Project location – West Airport Road Project located in Deering, Alaska.

Project Description

Bristol Engineering Services Corporation (BSEC) was contracted by the Native Village of Deering to design West Airport Road in Deering, Alaska. This new road will serve as the primary evacuation route from the village to the airport during seasonal and tidal flooding, when the existing Deering Airport Road is typically washed out. A new bridge over Smith Creek will have the load-bearing capacity necessary to move heavy equipment in and out of Deering year round, as the existing bridge over Smith Creek on Deering Road is not strong enough to support heavy loads. The proposed evacuation road will measure between 16 and 20 feet wide and will include a bridge over Smith Creek with a minimum load capacity of 50,000 lbs. Gravel for the road will be taken from existing gravel sources and borrow pits along Deering Airport Road.

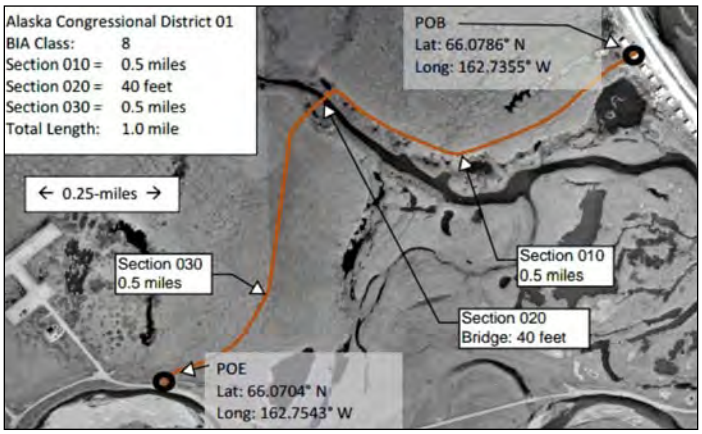


Figure 2. Project specifications showing proposed road route and Smith Creek crossing.

Project Purpose

The West Airport Road will provide Deering residents with a crucial evacuation route during times of flooding, as well as provide heavy equipment access for the village and airport. The purpose of this report is to provide BESC recommendations on whether or not the proposed location of West Airport Road will adversely affect historic properties in the proposed APE.

Federal funding for the project is being provided by BIA's IRR Program, thereby requiring the federal agency to carry out consultation per Section 106 of the NHPA and its implementing regulations (36CFR §800) to determine if there are historic properties within the proposed project area that may be adversely affected. As such, TNSDS was sub-contracted by BESC to assist them and the Native Village of Deering by preparing a report containing recommendations for establishing an APE and issuing a finding pursuant to the Act. Principal Preservation Consultant Robert Meinhardt, M.A. and Archaeologist Annalisa Heppner conducted a cultural resources investigation aimed at providing the City with such recommendations. Preservation Assistant Amy Ramirez provided assistance with background research and file searches necessary for proposing an APE for the West Airport Road, identifying previously recorded cultural resources and developing a historic context statement for Deering. Dr. Phillip T. Ashlock, Archaeologist, provided technical support for this project by importing Global Positioning System (GPS) coordinates into ArcGIS and creating maps for the report.

PROPOSED AREA OF POTENTIAL EFFECTS (APE)

A proposed APE consisting of a 16 to 20 foot-wide corridor that extends approximately one mile in length is proposed for the West Airport Road Project (Figure 2). The road travels through sections 19, 20, and 30 of Township 8 North, Range 19 West of the Kateel River Meridian. The road will begin in the village of Deering and traverse southwest 0.5 miles to Smith Creek. The proposed APE at both sides of the Smith Creek crossing expands to 40 feet, giving adequate survey coverage for any slight sifts in placement of a 50,000-pound capacity bridge. South of the Smith Creek crossing, the proposed APE narrows to 16 to 20 feet in width and continues to the southwest for another 0.5 miles. Project specifications call for vegetation removal and gravel fill. The gravel will be sourced locally from two open pits southwest of Deering, along the Inmachuk River. The two gravel sources, or borrow pits, are located in sections 10 and 11 of Township 7 North, Range 20 West of the Kateel River Meridian, and are existing. Both sources are included as part of the proposed APE.

METHODOLOGY

Methods used to conduct a cultural resources investigation for the design of West Airport Road included a literature review of relevant studies and various file searches, including those held at the Alaska Office of History and Archaeology (OHA) and the BIA Branch of Regional Archeology. The file searches were followed-up by a pedestrian survey of the proposed APE including archaeological reconnaissance with limited subsurface testing and soil strata analysis during shovel test excavations. Precursory research focused on the location, size, and age of cultural resources reported within and/or near the proposed project area, thus providing context for the prehistoric and historic development and/or cultural patterns of Deering. Information gathered from this research also directed the cultural resources survey and aided in developing a predictive model for identifying resources within the proposed APE.

Literature Review and Archival Research

TNSDS reviewed multiple-agency, online resources, and public records in an effort to determine if there was a potential for previously documented cultural resources to exist within the proposed APE. Prior to fieldwork, the Integrated Business Suite (IBS) online database at OHA was reviewed to determine the extent of previous cultural resource work in the area. The purpose of the file search was to identify any previous cultural resources studies and documented prehistoric and/or historic archaeological sites located within or around the proposed APE. In addition, reports not readily available at OHA were obtained from Anchorage area libraries and reviewed for relevance to the project.

Literature Review

A literature review was conducted in coordination with project background research. As a part of this process, relevant sources including archives, agency file searches, and local libraries were consulted and reviewed in an effort to yield information pertinent to the project. The IBS online at OHA was reviewed to determine the extent of previous archaeological research and surveys that were conducted in the area. This review helped to better understand the types of resources that might be encountered within the APE during the survey and to develop a context from which such resources can be evaluated for inclusion in the NRHP.

Archival Research

The search of the IBS at the OHA covered all available modules: Alaska Heritage Resources Survey (AHRS) Location Editor, AHRS cards, OHA Citations Database, Determinations of Eligibility and National Register Nomination Status, Surveys, RS-2477 Historic Trails Data Layer, BIA Numbers Data Layer, and the Document Repository (OHA 2012). The search area focused on the proposed APE, which included one mile of proposed roadway, travelling southwest from Deering towards the airport. The search was then expanded to gain an understanding of the prehistoric and historic trends and settlement patterns within and adjacent to the proposed APE. The reviewed data was used to better understand and develop contexts for the types of resources that might be encountered within the APE during the cultural resource survey.

Cultural Resources Survey

The cultural resources survey methodology was borrowed from National Register Bulletin 24, *Guidelines for Local Surveys: A Basis for Preservation Planning*, which outlines the vocabulary and techniques for both historical and archaeological survey methodology preferred by the National Register.

A cultural resources survey of the proposed road corridor involved an intensive survey carried out by Robert Meinhardt, M.A. and Annalisa Heppner on September 2-3, 2013. Initial pedestrian reconnaissance revealed that the area is largely wet, boggy tundra. Areas identified during the systematic survey as having a higher probability for cultural resources, such as high ridges and along what may be the remnants of a historic trail were tested for archaeological resources. The proposed area was divided into three areas, initially identified on the map provided by the Native Village of Deering. Section 010 (0.5 miles) stretches south from the city garage to the bridge crossing. Section 020 (40 feet) encompasses the north and south banks of Smith Creek. Section 030 (0.5 miles) stretches from the south bank of Smith Creek westward to join with the existing Deering Airport Road. To simplify the survey, Test Areas 1 through 3 were aligned with the sections provided by the Native Village of Deering. Based on previous investigations identified in the precursory literature review and file searches, it was determined that most of the cultural resources previously recorded in the area were prehistoric and located near the beach in the center of Deering. Since Deering is within the boundaries of an archaeological district and the proposed road only totals just over one mile, the project area was determined to have a moderate to high probability for containing cultural resources that may constitute historic properties pursuant to Section 106 of the National Historic Preservation Act of 1966.

The entire proposed APE was surveyed for cultural resources, with elevated landforms and the possible remnants of a historic trail receiving the most attention. The Native Village of Deering expressed particular concern with the historic trail, so GPS coordinates were recorded using a Garmin *Etrek* at higher elevations where possible trail remanents were observed.. These areas were also examined for historic mining debris, which may have been associated with historic trail use. The proposed APE is located in a low-lying wetland consisting of grasses and tundra. Elevated landforms or those that appeared to have been created or modified were intensively surveyed and a few locales were tested for prehistoric and/or historic archaeological resources.

Each test area received a series of shovel probes or shovel tests, which were placed using random sampling. Shovel probes were 30 cm in diameter. Shovel tests ranged in diameter from 50 to 70 cm wide. Depths in both shovel probes and shovel tests were determined by the natural stratigraphy of the area.

Additionally, a windshield survey by ATV was conducted to examine proposed gravel sources along Deering Airport Road at Mile 6.5 and Mile 8. GPS coordinates and photographs were taken to document the two existing borrow sites.

CONTEXT STATEMENTS

Context statements are an important aspect of conducting a cultural resources survey. Such statements aid in evaluating the significance of a resource and, therefore, identifying whether or not it is a historic property that may be adversely affected by a federal undertaking. As is the case for the West Airport Road Project, context statements will direct the planning process to avoid, minimize, or mitigate potential effects to resources that are eligible for inclusion in the National Register of Historic Places (NRHP).

Prehistoric Context

The northwestern arctic is noted for its contribution to the development of early American Arctic cultures, and more recently the development of recent Arctic Eskimo cultures (Anderson 1984). Archaeological evidence on the Seward Peninsula reflects influences from the northern arctic region and the Bering Sea regions. Below is a review of the cultural chronology of the Seward Peninsula and the Kotzebue Sound region (Table 1).

Paleoarctic Tradition

The earliest dated sites in southwest Alaska date back to 10,000 years ago (Ackerman 1996) with some suggestive evidence of even earlier occupation. The Paleoarctic Tradition proposed by Anderson (1970) groups early artifact assemblages that show resemblances to materials found in northeast Asia, suggesting connections across the Bering Land Bridge. Paleoarctic Tradition assemblages include microblades, wedge-shaped cores, bifacial tools, burins, endscrapers, and expedient tools made on blades (Ackerman 1994). Groups were highly mobile, with seasonal encampments in opportune locations for hunting late Pleistocene-early Holocene fauna (NLUR 2004). The tradition is based on materials originally found at Onion

Table 1. Cultural Traditions on the Seward Peninsula.

TRADITION	CULTURAL PHASE	AGE (BEFORE PRESENT)	MATERIAL ITEMS
Paleoarctic	Paleoarctic	10,000 B.P. – 6,000 B.P.	Microblades, wedge-shaped cores, bifacial tools, burins, endscrapers
Northern Archaic	Northern Archaic	6,000 B .P. – 4,000 B.P.	Wedge-shaped cores, side-notched projectile points/bifaces, minimal microblade use
Arctic Small Tool		4,700 B.P. – 1,000 B.P.	Abundant microblades, finely detailed end and side scrapers, chipped stone
	Denbigh	4,700 B.P. – 3,500 B.P.	Flaked projectile points, end-blade and side-blade insets, burins
	Choris	3,600 B.P. – 2,500 B.P.	Pottery, burins, flaked stone projectile points, endblades and sideblades, ground stone, barbed darts, labrets
	Norton	2,500 B.P. – 1,000 B. P.	Slab-knives, fire tempered pottery, toggling harpoons, ground slate tools, stone net sinkers, oil lamps, and endblades and sideblades
	Ipiutak	1,500 B.P. – 200 B.P.	Birch bark containers, open-work carvings, tools with decorative incising
Northern Maritime		1,500 B.P. – 200 B.P.	Bone and ivory harpoons, ulus, pottery
	Birnirk	1,500 B.P. – 1,000 B.P.	Flaked side blades and end blades, flaked semi-lunar knives, burin-like tools, ground slate ulus, open socket harpoon heads, ground slate harpoon blades, sand/gravel tempered pottery
	Western Thule	1,000 B.P. – 200 B.P.	Pottery, thin open socket harpoons, large whaling harpoons, umiaks, kayaks, ground slate tools, fish lures, carved ivory figurines, baleen wolf-killers, decorated needle cases, leisters, net-sinkers, and fish hooks

**Adapted from Dumond 1984; Anderson 1984; NLUR 2007; Eldridge 2012*

Portage in northwestern Alaska (Anderson 1970) and at Trail Creek Caves on the Seward Peninsula (Larsen 1968). Sites belonging to this tradition have also been found elsewhere in northwest Alaska (McClenahan 1993:133-138).

Northern Archaic Tradition

A warming climate and the extinction of megafauna, such as mammoth, ushered in a new cultural period with a higher population density across North America (Mobley 2010). In Alaska, the correlating Northern Archaic Tradition shows an increased use of marine resources, primarily salmon, with continued use of big game species. Side-notched projectile point/biface forms begin to appear in Alaskan archaeological assemblages (Braund 2001), as well as incised pebbles and declining use of microblade technology. Dwellings consisted of willow frames covered with skins and had semi-subterranean floors that contain thick midden deposits. The middens commonly consist of caribou bone and oxidized lenses of sand and charcoal. Similar to the Paleoarctic Tradition, Northern Archaic material was represented at the Onion Portage Site (Anderson 1988) and at sites along the Yukon River to the east of St. Michael Island (NLUR 2007), at Cape Krusenstern (Pipkin 2005), and in various interior Alaska locations in the Kobuk and Noatak River drainages. Components have also been identified as far south as Ugashik Lakes (Henn 1978), Kagati Lake (Ackerman 1980), and Lake Minchumina (Holmes 1986).

Arctic Small Tool Tradition (ASTt)

This tradition is marked by a distinctive stone tool kit, which included small, finely made endblades and sideblades, distinctive burins and the abundant use of microblades; all of which intensified as the tradition continued to develop. There is a notable lack of ground or polished stone tools (Irving 1962, 1964). The progressive increase in tool workmanship culminated in the introduction of composite tools and the introduction of the bow and arrow (NLUR 2004). Near the end of the tradition, salmon is intensely harvested (Irving 1964: 77). Dwellings early in the tradition are square, semi-subterranean sod enclosures, which gradually became round in floor plan. Excavation of dwelling floors indicates distinct activity areas within the houses. Habitation sites were seasonal, with coastal areas being inhabited in the spring and summer, and interior tundra sites in the fall and winter. Linguists have suggested that the earliest ASTt language was the root from which a split occurred, leading into Yupik and Inupiaq languages (Lutz 1982; Woodbury 1984; Krauss 1988).

The tradition has been further refined into four sequential cultures, each with similar tool assemblages. Their primary differences include the presence/absence of pottery, stylistic differences in pottery and organic artifacts, and subsistence systems (Giddings 1957, 1964; Larsen and Rainey 1948). For the vicinity of Kotzebue Sound, Giddings and Anderson (Giddings and Anderson 1986) have refined the ASTt to include Denbigh, Choris, Norton, and Ipiutak, and reflect Bering Sea cultural influences.

Denbigh

Denbigh component sites are among the oldest coastal sites yet identified in Norton Sound; however, their proximity to the coast may be a byproduct of rising seas (Anderson 1984). They indicate seasonal coastal occupation, possibly late summer or early spring, with emphasis on terrestrial and riverine resources, such as caribou and fish species (Dumond 1987: 83-84). Artifacts recovered from Denbigh complex sites include small bi-pointed end and side blades for insertion into arrow and spearheads, cuboid microblade cores and abundant microblades, tanged end scrapers, large semi-lunar bifacial knives, and net sinkers (Anderson 1984). Dwellings were shallow semi-subterranean sod houses with short entrance tunnels (Eldridge 2012). House floors were square or round with large stone-lined hearths that were centrally placed, and seasonal housing was comprised of skin-covered tents (Anderson 1984). Archaeological sites on the Seward Peninsula with Denbigh components include Cape Espenberg, Trail Creek Caves, Kuzitrin Lake, and Agulaak Island (Eldridge 2012). A small assemblage of Denbigh lithic materials was identified at the Old Beach Site on Cape Nome (Bockstoce 1979).

Choris

Artifact assemblages from Choris sites include pottery, burins, flaked stone projectile points, endblades and sideblades, and the appearance of ground slate tools later in the complex (Harritt 1994). Choris sites have also contained fixed-shaft toggle points and barbed darts for

sea mammal hunting, and bifurcate tanged arrowheads for caribou hunting. Decorative and ornamental items were made from bone, wood and ivory, and stone labrets were fashioned for personal wear. Dwellings were large semi-subterranean sod homes with stone-lined, floors and stone-lined hearths. Seasonal housing was comprised of round, skin-covered tents (Anderson 1984). The first Choris knives and points were identified at Trail Creek Caves, with additional finds at Cape Krusenstern, Onion Portage, and the Choris Peninsula (Anderson 1984). Subsistence efforts for Choris sites utilized readily available resources, such as fishing and caribou hunting at Onion Portage, seal species hunting at Cape Krusenstern, and fish, birds, seals, and whales on the Chorus Peninsula. Choris sites on the Seward Peninsula are located at Cape Espenberg and near Teller (Schaff 1988; NLUR 2007).

Norton

The Norton cultural complex reflects many traits of the Choris complex, as well as new technological innovations. Subsistence patterns were broadened with a greater emphasis on marine and riverine resources (Pipkin 2005). Early Norton complex assemblages seem to indicate a heavy reliance on net fishing, sealing, and caribou hunting, while later assemblages show a decreased reliance on fishing and a possible increase in sealing and caribou hunting (Bockstoce 1979). Artifacts associated with Norton sites include slab-knives, fire tempered pottery, toggling harpoons, ground slate tools, stone net sinkers, oil lamps, and endblades and sideblades (Mason 2010). Dwellings varied in size and composition, depending on region. Houses ranged from large, semi-subterranean sod houses with long entrance tunnels to small semi-subterranean sod houses with short entrance tunnels. House floors ranged from round to oval, with centrally placed hearths (Anderson 1984). Sites with Norton complex components on the Seward Peninsula have been found at Trail Creek Caves, Kugzruk Island, Ikpek, Cape Espenberg, and Cape Nome (Eldridge 2012).

Ipiutak

The northwestern Alaska Norton cultural complex was replaced by the Ipiutak complex. Archaeological evidence suggests the complex may have had its origins on the eastern Siberian coast and the Bering Sea Islands (Anderson 1984). Ipiutak sites are known for their elaborate burial goods and the earliest known use of iron in arctic Alaska. The artifact assemblage is notably lacking in ground slate tools, pottery, and oil lamps (Eldridge 2012), but does contain birch bark containers, open-work carvings of bone, wood, and ivory, and tools with decorative incising (Harritt 1994; Mason 2010). Dwellings were semi-subterranean sod structures, which were square to round in shape and had short entrance tunnels. Seward Peninsula sites with Ipiutak components are found both along the coast and inland. They include Trail Creek Caves, Cape Espenberg, and Deering.

The Ipiutak remains in Deering are few but significant. A *qargi*, or ceremonial house, a house and cache pit, as many as three additional house features, and a number of burials with spectacular grave goods make up a world-class assemblage of features and artifacts. The most well-known of these artifacts is the "maskoid" of which only three exist in the world. Exotic artifacts at Deering include obsidian from Batza Tena, smelted iron from Sibera, and structural timber, indicating a complex and wide-ranging Ipiutak trade network (Bowers and Mason 2009:286-287).

Northern Maritime Tradition

The broadly defined cultural tradition covered the arctic from Greenland to Siberia (Collins 1964) and includes three interrelated cultures: Punuk, Birnirk, and Western Thule (Giddings and Anderson 1986). Punuk site types have been identified in the Bering Sea islands, particularly the Punuk Islands near St. Lawarence, and correlate roughly as existing during the time of land-based Birnirk complex people. However, the area of the Norton Sound and the Seward Peninsula are considered to be within Western Thule, and to a lesser degree Birnirk, cultural influence (NLUR 2007). These cultures include maritime-oriented dwellers of northern coastlines and their descendants throughout the arctic, who may not show such an intensive reliance on marine subsistence (Dumond 1984). Subsistence strategies included sea mammal hunting from specific locations, and an increased reliance on marine resources in general (Collins 1964; Bockstoce 1979; NLUR 2007). The maritime resource interest can be used to account the rise of the Birnirk peoples in northern Arctic, and the Western Thule in Bristol Bay. The Northern Maritime Tradition can be thought of as "Prehistoric Eskimo Culture" and many

artifact assemblages are similar to those of the later-dating historic Inupiaq Eskimos (Anderson 1984). Bone and ivory harpoons and other tools reflecting an emphasis on marine mammal hunting and fishing characterize the period, and many such sites have been recorded along the northwest Alaska coast. Variations in tool type and art have been used to further subdivide the tradition (Anderson 1984:56-57).

Birnirk

The Birnirk cultural complex reflects a coastal, cultural group. Artifact assemblages commonly include flaked side blades and end blades, flaked semi-lunar knives, burin-like tools, ground slate ulus, open socket harpoon heads, ground slate harpoon blades, and sand/gravel tempered pottery (Harritt 1994; Mason 2010). Dwellings were small semi-subterranean sod houses with long entrance tunnels, square in shape, with some having small, attached kitchen rooms. Skin tents were used seasonally. Birnirk in the Kotzebue Sound area has a relatively late occurrence at around 800 A.D. (Giddings and Anderson 1986) Birnirk components have been found at archaeological sites at Cape Nome, Cape Prince of Wales, Cape Krusenstern, and the Birnirk Burial Mound in Wales, prior to its destruction (Eldridge 2012).

Western Thule

Western Thule culture is thought to have directly evolved from Birnirk culture (Anderson 1984), as evidenced in its material goods. The term "Thule" refers to a cultural complex, which ranges from northwestern Alaska, across the arctic region, to Greenland. The culture was first defined in eastern Canada by Mathiassen in 1927 during data collection for the Fifth Thule Expedition across Canada. He noted the peoples were an advanced culture, with artifacts containing some Asian traits and a reliance on whaling. An increased emphasis on specialized tool types can be seen, which intensifies later in the complex. The term "Western Thule" has been used to distinguish between Alaskan Thule culture and those Thule cultures of northern Canada and Greenland (Bockstoce 1979). Western Thule subsistence was highly diversified and consisted of land hunting, fishing, and a heavy reliance on small seals. Evidence suggests that open water hunting and the use of boats were employed seasonally, with an emphasis on whaling in fall and spring, and winter sealing on the sea ice (Anderson 1984; Dumond 1984). Artifact assemblages include pottery, thin open socket harpoons, large whaling harpoons, umiaks, kayaks, ground slate tools, fish lures, carved ivory figurines, baleen wolf-killers, decorated needle cases, leisters, net-sinkers, and fish hooks. Settlements were both coastal and inland, with dwellings of deep, semi-subterranean sod houses with long entrance tunnels. House floors had single and multiple room plans with central hearths. Skin tents were used seasonally (Eldridge 2012).

Giddings and Anderson identify the Kotzebue Period as a form of Western Thule that saw a subsistence shift from whale hunting to a more dispersed subsistence base. There is a lack of whaling implements, a wider subsistence season, smaller houses, and a settlement pattern of small villages with only one or two winter houses, and a movement into previously uninhabited areas (Giddings and Anderson 1986).

Archaeological sites located on Seward Peninsula with Western Thule and Kotzebue Period components include, Kotzebue, Cape Nome, Cape Espenberg, Trail Creek Caves, Nuk, and the Snake River Spit Site located at the mouth of the Snake River in Nome. Linguistically, the culture was divided by region; Yupik was spoken in the Bering Sea Islands, while Inupiaq was spoken in all other areas, including the coastal Seward Peninsula (Woodbury 1984; Dumond 1984; Giddings and Anderson 1986).

Historic Context

Early EuroAmerican Contact 1778-1880

Prior to the Russian Period of Alaska's recent history, western trade goods entered Alaska via the Seward Peninsula as a result of well-established, interconnected trade among various indigenous groups of the Bering Strait region (VanStone 1984: 154). Early EuroAmerican presence in northwestern Alaska was annual, with sustained contact in the form of trading posts and settlements occurring near the turn of the century.

The first European explorer to travel the Seward Peninsula was Captain James Cook, who travelled as far north as Kotzebue Sound in 1778. The sound was later named for Otto Von Kotzebue, who explored the sound area in 1816 in search of the Northwest Passage on behalf of the Russian-American Company. Kotzebue

traded with the native people he encountered and noted they already had western trade goods and a keen sense of trading practices (VanStone 1984). In 1825, British interests entered the region under the guise of the Franklin Expedition, which was attempting to cross the arctic coast. Frederick Beechy, commander of the sloop H.M.S. Blossom, arrived in Kotzebue Sound in September of 1826 in an unsuccessful attempt at meeting the Franklin Expedition. Beechy noted that the coast along the sound was sparsely populated. He observed abandoned settlements at Cape Epsenberg and noted that the burial platforms near the settlements were greatly different than those he had seen along the eastern side of Kotzebue Sound (Beechy 1831: 451).

The Russian-American Company began annual voyages between St. Michael and Kotzebue Sound in 1833 (Ray 1984). Sustained contact in the region did not occur until the turn of the century. Major impacts to the native communities were not felt until much later than they were in southwest and southeast Alaska, where permanent EuroAmerican trading posts and settlements were already established (NLUR 2007). The trading posts of the Bering Strait region were, more often than not, ships that went to people in their traditional locations, rather than established communities on land (Nelson 1983:23). The increased presence of outside interests brought illness to the native populations, which were decimated in 1838 by small pox (Ray 1975: 127). Whaling expeditions arrived from New York in 1848, shortly followed by large fishing flotillas from the already established North Pacific fishery in southwest Alaska (Ray 1975; VanStone 1984).

Missionary Influence and the Gold Rush 1880-1920

The Russian Orthodox Church established a mission in St. Michael in 1884 (Ray 1975: 213); however, the church had little influence north of Unalakleet. Protestant missionaries entered the Seward Peninsula in 1887 and began converting the native peoples to Christianity. Swedish Evangelicals also entered the region and established missions in Unalakleet in 1887 and Golovin in 1893 (Ray 1975: 212). By 1910, nearly all Inupiat in northwest Alaska had been converted to Christianity (Burch 1994: 1). The evangelical missionary (Figure 3) in Deering was established between 1901 and 1905 by the Society of Friends, who are more commonly known as Quakers. The name Deering was probably taken from the 90-ton schooner "Abbey Deering," which was in nearby waters around 1900.

Figure 3. Society of Friends Church 1929 (Alaska State Library 2013a; Asec# ASL-PCA-45-0057).

The Protestant missionary, Sheldon Jackson, promoted reindeer herding on the Seward Peninsula as a profitable industry for the native peoples of the region. Reindeer were first brought from Siberia aboard the revenue cutter Bear in 1892. The first herd was established at Teller, with others started later in Golovin and Unalakleet. Eskimo apprentices gradually learned the skill from Siberian and later Norweigan herders, until they could acquire their own reindeer. Herds were dispersed widely across the region (Figure 4), and it is thought that the establishment of reindeer stations influenced the migration of indigenous peoples to areas such as Nome, Teller, and ultimately Deering. Reindeer herding was established in Deering in 1905, with the herd animals having been loaned to the local population by the Society of Friends (Lomen 1954.). Two herders from Shishmaref accompanied the animals. Additional herds were established in 1911 and 1913 (Stern 1980: 31). The U.S. Census of 1920 indicates that nearly all inhabitants of Deering were from either Shishmaref or Wales, and that roughly half of those households made their living from herding (U.S. Census 1920).

Figure 4. Reindeer herd near Deering, Alaska (Alaska State Library 2013b; Assec# ASL-PCA-112-110).

The Klondike Gold Rush began in 1897, triggering a massive migration into the northern reaches of Canada and Alaska. The Klondike was not the only destination; its discovery provided inspiration for searching widely for gold in Alaska. Other strikes were made, including in April of 1898, at Council City on the Seward Peninsula (Eldridge 2012: 3). Prospectors discovered gold in the Niukluk River and on the beaches of Nome in 1899 (Ray 1975). The following years witnessed numerous other strikes throughout the region including the Imnachuk and Kiwalik rivers. These discoveries lead to the establishment of the modern communities of Deering and Candle around 1901. Candle was situated a few miles upstream from Deering on the Kiwalik River, and numerous smaller mining operations were located along the Inmachuk River north of Inmachuk Lake. The entire area from Inmanchuk Lake to Candle was called the Fairhaven Mining Precinct. The precinct was largely mined using placer methods, which required an abundant source of water. An elaborate system of over 500 miles of irrigation ditch (Figure 5) was constructed in the early 1900s. The largest ditch, the Fairhaven Ditch, measured 11 feet wide at the bottom and 38 feet wide at the top, with sides rising to four feet. The ditch carried water 38 miles from Imaruk Lake north to the Inmachuk River to enable the full exploration of gold deposits along the river. It was constructed between 1905 and 1907 by the Fairhaven Water Company and was in use until 1920, when the deposits along the Inmachuk River claims were exhausted.

Figure 5. Water flume ditch for mining operations near Deering (UAF 2013a, Assec# UAF-1999-132-CO).

Inmanchuk River mining operations were located in the Inmachuk Mining District, which was located approximately 20 miles south of Deering and included the former Utica Mine. The former gold mine began operation in 1903 along the Inmachuk River (Alaska DEC 2013). These early mining activities were likely the primary incentive for native peoples to migrate to the current location of Deering. It was a key supply center for the mining camps, and nearly 200 individuals lived in Deering by 1907. Supplies were transferred to Utica via the Deering-Inmachuk River Wagon Road, AEC Road 27. Portions of the road were constructed in 1907, with the connection of all segments completed by 1911, when the road was turned over to the Alaska Territorial Road Commission. It was estimated that in 1910 over 800 tons of freight was hauled over the wagon road (AEC 1910). In 1908, nearly a half of a million dollars of gold was mined from the Inmachuk River, while Candle Creek yielded two million dollars of gold (Henshaw and Parker 1913: 366). By 1930, the Fairhaven Precinct had produced $5,727,100 worth of gold (Alaska OHA 1987). Hydraulic and dredge mining occurred along a seven-mile length of the Inmachuk River until about 1980, when GEM Exploration, Inc. abandoned the site (DEC 2013). NANA Regional Corporation acquired the land and mine in 1991 through the Alaska Native Claims Settlement Act (ANCSA) of 1971.

A government school was established in Deering in 1905, which enrolled 42 students and 28 adults (Figure 6; Hadley 1969: 191). In 1910, the native population of Deering totaled 102 (U.S. Census 1910). The community had a roadhouse, two saloons, a Society of Friends mission, and a government reindeer station (Polk 1907-1908: 185). Increasing numbers of miners and prospectors were taking a toll on the native population due to illness, alcoholism, and rumors of improper relations with young native girls. In 1914, the school and part of the population of Deering moved to the Bureau of Education funded town of Noorvik in an attempt to remove the influences of the miners on the native lifestyle (Ducker 1996).

Figure 6. Interior of Bureau of Education school in Deering, c. 1910 (UAF 2013b, Assec# UAF-1973-203-7).

Many of the people who remained in Deering worked in the mines or provided supplies needed in mining camps. Deering also became a trade center for native trappers, where they could get a higher price than in their villages (Keithahn 1963: 71). In 1922, a landing strip was established at Deering, possibly the first on the Seward Peninsula, by Norwegian explorer Roald Amundsen. The field was to be used as a staging area for a circum-polar flight. The field was expanded in 1945 to enable commercial traffic (Larsen 2001: 15). By 1928, the reindeer herds had increased to more than 4,000 animals in the Deering area. A small pox epidemic hit the region the same year. Many residents became ill, but the loss of life was greatly reduced from previous epidemics (Andrews 1939: 193).

Deering 1930-Present

Military presence in Deering was first felt with the onset of World War II in 1939. Alaska Natives served during the war, giving them their first exposure to life outside the village. Many residents of the Seward Peninsula participated in the Alaska Territorial Guard (Salisbury 2002). The Cold War era saw the establishment of airfields and communication systems across Alaska, including the construction of a White Alice Communications System (WACS) tropospheric station on Granite Mountain, located between Deering and Koyuk and completed between 1955 and 1956 (Figure 7).

Figure 7. Construction of a White Alice Communications System (WACS) station (UAA 2013, Assec# UAA-HMC-1064).

The Indian Reorganization Act of 1934 helped to establish local control over village lands. The Village of Deering organized under the Act in 1945, becoming an IRA entity.

In 1966, the Northwest Alaska Native Association (NANA) was founded to help settle the native's land claims issues. This non-profit organization soon became an advocate for all native issues, including health, housing, and political rights. The village of Deering was incorporated as a second-class city in 1970. With the passing of the Alaska Native Claims Settlement Act (ANCSA) in 1971, a for-profit native corporation was established and named the NANA Regional Corporation. To avoid confusion, the non-profit Northwest Alaska Native Association was renamed the Mauneluk Association, and was later changed to the more traditional name, Maniilaq (Maniilaq Association 2013). NANA is fully owned by more than 13,000 shareholders and is governed by an elected Board of Directors drawn

from 11 villages. The Kotzebue Area Health Corporation was formed in 1973. This corporation was to care for the health needs of the area, and it soon became apparent that Maniilaq and KAHC were performing similar functions. In 1975, the two organizations merged. Maniilaq began the construction of a new health facility in 1980 to house and consolidate its rapidly expanding public service programs. By the time it was completed in 1981, the Association had grown from a handful of programs and staff to a multi-million dollar organization. Maniilaq assumed management of the Indian Health Service (IHS) hospital and renamed it the Maniilaq Medical Center. The Maniilaq Association now manages the 80,000 square foot, $42 million hospital, as well as smaller clinics in all the villages.

Today, employment opportunities are available in local government, the school system, the regional and village corporations, and with the Karmun-Moto reindeer herd, which now boasts over 1,400 animals. Other sources of income include commercial fishing and the manufacture of art and handicrafts (Bowers 2009).

RESULTS OF CULTURAL RESOURCES INVESTIGATION

Previous Investigations

Previous investigations in Deering have been primarily conducted to satisfy regulatory requirements for compliance with Section 106 of the NHPA. Smaller investigations with academic focus began as early as 1949 and were associated more recently with the compliance-driven Village Safe Water (VSW) Program. The investigations have taken place within the core town area of Deering and many have been in anticipation of infrastructure improvements (Table 2). Such investigations show that small portions of the northeastern extent of the proposed APE may have been investigated for cultural resources in the past. However, the majority of the proposed APE has not been the subject of either an archaeological or historic structures survey.

As early as 1949, archaeological research was undertaken in Deering. Helge Larsen, from the National Museum of Denmark, began excavations of an Ipiutak ceremonial house on the shores of the Kotzebue Sound, site KTZ-00299 (Larsen 1951). The site consisted of semi-subterranean sod house with entrance tunnel and a cache. Over 6,000 animal bones and 1,750 artifacts were recovered from this site (OHA 2006). In 1997, a team from the Museum of Denmark continued excavations at the site. Larsen also excavated site KTZ-00023 in 1950, which was also an Ipiutak ceremonial house. Artifacts included sled and snowshoe parts and a Western Thule toggling harpoon head (OHA 2000). Larsen published a book entitled *Deering: A Men's House from Seward Peninsula, Alaska* in 2001 (Larsen 2001).

In 1974, Melchoir and Bennett collected data from two archeological sites KTZ-00025 and KTZ-00003, and included the data in the Chukchi-Imuruk Biological Report (Melchoir and Bennett 1974). In 1982, the data they collected was presented in a chapter on Archaeological Observations in The Bering Land Bridge National Preserve (Powers et al 1982).

Review of the IBS system revealed that compliance-driven investigations began in the early 1980s in the Deering area (Table 2). In 1982, Chuck Holmes and Richard Stern completed an archaeological survey for gravel material sites for the Deering airport (Holmes and Stern 1982). No archaeological resources were identified.

In 1994, fieldwork was completed for the installation of new sewer lines and the construction of a sewage treatment plant (Dixon 1994) by the Alaska Department of Environmental Conservation, Village Safe Water Program. The efforts focused on the previously identified site KTZ-00023, which is an Ipiutak ceremonial house site known as the Deering Qualgi/Kazgi Site. Dixon revisited the site and found it to consist only of a shallow hole in the ground in a grass and willow covered area. Two new depressions were found at the site and a shovel test produced 70 items, including 24 EuroAmerican artifacts, 17 mammal bones, sawn whale bone, decayed wood fragments, and 21 splintered bird bone fragments. Dated materials revealed the following radiocarbon dates: BP 1280+/-40 (Beta-113142) and BP 1230+/-40 (Beta-138562) (OHA 2000). This first investigation into the potential for archaeological resources in Deering found in conjunction with the sewage line installation revealed that Deering is rich in buried cultural materials. It became apparent to all involved that a systematic approach would

Table 2. Previous Investigations

SURVEY ID	LEVEL	TITLE	REFERENCE
	Level II - Reconnaissance Survey	Cultural Resources Survey: Deering Airport Material Site	Holmes and Stern 1982
	Level II - Reconnaissance Survey	An Archaeological Reconnaissance of Lands to be Effected by the Proposed Construction of a Sewer Line and Treatment Plant in Deering, Alaska	Dixon 1994
	Level II - Reconnaissance Survey	Report of 1997 Field Discoveries City of Deering Village Safe Water Cultural Resources Project	Reanier et al 1998
15958266 15958267 15958268	Level I - Literature Review Level II - Reconnaissance Survey Level III - Intensive survey	Preliminary Report on the 1999 Deering Village Safe Water Archaeological Program	Bowers et al 1999
	Level II - Reconnaissance Survey	Archaeological Monitoring of NWIHA House Lot Sewer Line Installation and Adjustment	Williams 2000
	Level II - Reconnaissance Survey	2000 Interim Report on the Deering Village Safe Water Archaeological Program	Bowers 2000
	Level II - Reconnaissance Survey	2001 Interim Report on the Deering Village Safe Water Archaeological Program	Bowers 2001
	Level II - Reconnaissance Survey	2002 Interim Report on the Deering Village Safe Water Archaeological Program	Bowers 2002a
	Level IV - Mitigative	Emergency Excavation of Human Remains in Deering (letter report)	Bowers 2002b
	Level II - Reconnaissance Survey	2003 Interim Report on the Deering Village Safe Water Archaeological Program	Bowers et al 2003
15959285	Level II - Reconnaissance Survey	2005 Interim Report on the Deering Village Safe Water Archaeological Program	Bowers et al 2005
	Level II - Reconnaissance Survey	2006 Interim Report on the Deering Village Safe Water Archaeological Program	Bowers et al 2006
	Level II - Reconnaissance Survey	2007 Interim Report on the Deering Village Safe Water Archaeological Program	Bowers et al 2007
15987166	Level II - Reconnaissance Survey	The Archaeology of Deering, Alaska Final Report on the Deering Village Safe Water Archaeological Program	Bowers 2009
	Level II - Reconnaissance Survey	Archaeological Survey of Deering Landfill and Gravel Sources	Williams 2001
	Level II - Reconnaissance Survey	Report of Cultural Resources Investigations: The Deering Road Project No. 466, Deering, Alaska	Allison 2002
	Level II - Reconnaissance Survey	Archaeological Monitoring of Sediment Testing for a New Tank Farm in Deering, Alaska	Williams 2002a
	Level II - Reconnaissance Survey	Cultural Resources Survey of Landfill Improvements in Deering, Alaska	Williams 2002b
	Level II - Reconnaissance Survey	Archaeological Monitoring of Fuel Line Trenches in Deering, Alaska.	Williams 2004
	Level I - Literature Review	Cultural Resources Assessment of the Proposed Deering Bulk Fuel Upgrade	Bowers and Legge 2002
	Level II - Reconnaissance Survey	Archaeological Monitoring of New Health Clinic Construction in Deering, Alaska	Bowers 2004
16055121	Level II - Reconnaissance Survey	BIA 2004 Native Allotment Surveys	BIA 2004
	Level II - Reconnaissance Survey	Cultural Resource Survey of Proposed Material Source and Monitoring of Road Improvements in the Vicinity of Deering, Alaska	Bowers 2007
	n/a	Alaska Baseline Erosion Assessment, Erosion Information Paper- Deering, Alaska	USACE 2007
	Level II - Reconnaissance Survey	Archaeological Survey and Monitoring of Water Main Line Replacement, Deering, Alaska	Stern 2009
16074818	Level IID - Remote Sensing	Ground Penetrating Radar Survey of a Proposed Community Building Lot in Deering, Alaska	NLUR 2012

be necessary in order to install a sewer and drinking water system in the village without destroying precious cultural materials and history. The Deering Village VSW Archaeological Program was created in 1997 to excavate and interpret buried cultural material uncovered during sewer line installation, as well as during the construction of a new Post Office building. Excavations were carried out between 1997 and 1999, with monitoring and survey efforts being completed between 2000 and 2009. The archaeological work for the VSW project was undertaken by Bering Straits Foundation (BSF) in 1997, Ukpeagvik Inupiat Corporation (UIC) in 1998, and Northern Land Use Research, Inc. (NLUR) in 1999-2009.

Work in 1997 identified site KTZ-00299, Deering Ipuiutak House and Cache, which is a buried Ipiutak house and associated cache (Reanier 1998). The house has been radiocarbon dated to BP 1230+/-40 and the associated cache pit dates to about BP 1620+/-80. Over 6,000 animal bones and 1,750 artifacts were recovered from the site, which is presently covered by the new Post Office in Deering (OHA 2006). The density of identified buried cultural material in conjunction with the close geographic proximity to other archaeological sites of the same age indicated that the potential for more discovery was very high, thus leading to the establishment of an archaeological district in Deering, KTZ-00169, as well as a historic district, KTZ-00170. In 1998, a Programmatic Agreement was established to address VSW project impacts to the archaeological district (Deering Programmatic Agreement 1998). The agreement included the Native Village of Deering; the Deering City Council; the Alaska State Historic Preservation Officer; the Indian Health Service; the Alaska Area Native Health Service; the U.S. Department of Agriculture, Office of Rural Development; the U.S. Army Corps of Engineers, Alaska District; the National Park Service; the Northwest Alaska Native Association; the Northwest Arctic Borough; and the Advisory Council on Historic Preservation.

Work continued through 1999, with the discovery of two Western Thule pit houses (Bowers et al 1999). Site KTZ-00300 is a square house with two rooms and entrance tunnel. A total of four radiocarbon dates were obtained, the most reliable of which was from charcoal located beneath the main house floorboards, yielding a date of BP 910+/-40 (Beta-138568). Site KTZ-00301 is also a square house with two rooms and entrance tunnel, constructed of driftwood, sod, and whalebone. A single radiocarbon age was determined from a sample of wood from a subfloor cache at BP 820+/-40 (Beta-189091).

Survey and monitoring efforts were completed between 2000 and 2003 for the VSW Program (Williams 2000; Bowers 2009). Interim reports were generated in 2000, 2001, 2002, 2003, 2005, 2006, and 2007 to report of the status of the project (Bowers 2000; Bowers 2001; Bowers 2002a; Bowers et al 2003; Bowers et al 2005; Bowers et al 2006; Bowers et al 2007). Upon project completion, NLUR was tasked with compiling all information gathered during the VSW Program, and it was synthesized into a final report in 2009 (Bowers 2009).

Compliance-driven investigative efforts not directly tied to the Deering Village VSW Archaeological Program included road improvements, material sourcing, fuel storage and building construction. In 2001 proposed material sites for gravel sources were investigated along the Imakchurik River (Williams 2001).

BIA completed an archaeological survey for road improvements through their IRR Program in 2002; no cultural resources were identified (Allison 2002). Also in 2002, proposed fuel system upgrades created a need for extensive review by archaeological personnel. NLUR provided monitoring activities for sediment testing at a new tank farm (Williams 2002a). A complete assessment for the bulk fuel upgrade was prepared by NLUR for the Alaska Industrial Development and Export Authority, which covered the entire fuel system (Bowers and Legge 2002). A side project was also completed by NLUR, which included a cultural resource survey completed for a landfill improvement project (Williams 2002b). During all four efforts, no significant features or cultural resources were discovered. An emergency excavation of eroding human remains was completed by Pete Bowers of NLUR late in 2002 on a *pro bono* basis (Bowers 2002b). The remains were precipitously falling from a cut bank due to erosion and were recovered for reinterment.

Archaeological monitoring was completed in 2004 by NLUR during the digging of trenches for new fuel lines in the village (Williams' 2004). Later the same year, NLUR completed survey for a proposed health clinic in Deering (Bowers 2004).

The BIA completed archaeological survey for Native allotment selections and conveyance in the Deering area in the summer of 2004. Two allotments under the name Betha Olanna were investigated; F17474A and F17474B (BIA 2004). Both tracts of land are located well beyond the current project area and are at least six miles from the Deering townsite.

In 2007, road improvements and material sourcing efforts were underway. An archaeological survey was again completed by NLUR, and road construction efforts were monitored (Bowers 2007). No archaeological resources were identified.

Shoreline erosion has always been a concern in Deering, and in 2007 the U.S. Army Corps of Engineers completed a baseline erosion assessment for the community of Deering. In the assessment, an archaeological sensitivity area was proposed along the western edge of town. The area was proposed in an attempt to slow the environmental factors, which were destroying buried cultural remains (USACE 2007) and covered nearly 500 feet of shoreline. A crude sea wall of riprap was placed at the location.

An archaeological survey and monitoring project was completed in 2009 by NLUR related to the replacement of a water main. No cultural resources were identified (Stern 2009).

Design work on a new multi-use facility for the community of Deering began in the summer of 2012. The property was partially surveyed by NLUR using ground-penetrating radar (GPR) to determine if, and possibly where, any buried anomalies may be located within the property boundaries (NLUR 2012). Two areas of interest were found and have yet to be investigated further since the project is currently in progress (Alaska OHA 2012).

Previously Documented Resources

The project area for the current investigation is located in sections 19, 20, and 30 of Township 8 North, Range 19 South, and Sections 10 and 11 of Township 7 North, Range 20 West of the Kateel River Meridian. The proposed APE is a one-mile corridor ranging between 16 to 40 feet in width, as well as two previously existing borrow sites. The corridor traverses from the Deering townsite to the southwest, crossing Smith Creek and continuing on towards the airport; borrow sites are located further south, along the Inmachuk River (Figure 8). The proposed APE and adjacent lands were reviewed to obtain an understanding of the cultural context of the area and to gauge the types and likelihood of encountering undocumented resources (Figure 9; Table 3).

Figure 8. Previously documented resources search area; red outline denotes extent.

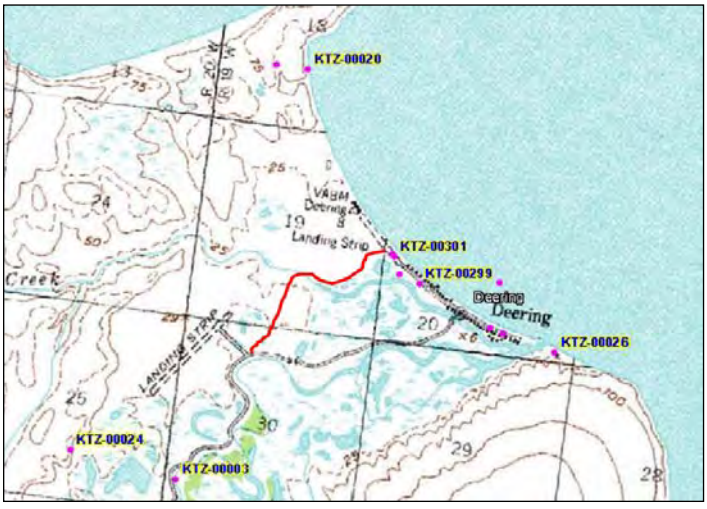


Figure 9. Map depicting AHRS search results for previously documented resources located within the Village of Deering boundaries; site KET-00034, a historic trail, is not mapped in the IBS GIS data layer as a line-feature. The proposed APE is depicted in red.

Table 3. Previously Documented Resources

AHRS NO.	SITE NAME	RESOURCE TYPE	CULTURAL AFFILIATION	NRHP STATUS
KTZ-00003	Inmachukmiu / Imnatchiagmiut	Prehistoric Village (destroyed)	Inupiat	Unevaluated
KTZ-00020	Kipalut/Kip-pel-lik	Prehistoric/Historic House Pits	Inupiat	Unevaluated
KTZ-00023	Deering Qualgi/Kazgi Site	Prehistoric Depressions, Burials, Middens	Ipiutak, Thule	Unevaluated
KTZ-00024	Imnatchiagmiut Burials	Historic Cemetery	Inupiat	Unevaluated
KTZ-00025	KTZ-00025	Historic Burial	Inupiat	Unevaluated
KTZ-00026	KTZ-00026	Historic Site	Inupiat	Unevaluated
KTZ-00034	Deering to Inmachuk Trail	Historic Wagon Road	EuroAmerican	Unevaluated
KTZ-00168	KTZ-00168	Historic Cellar	EuroAmerican	Unevaluated
KTZ-00169	Deering Archaeological District	Prehistoric/Historic District	Ipiutak, Thule	Determined Eligible 1998
KTZ-00170	Deering Historic District	Historic Distric	Ipiutak, Thule, EuroAmerican	Considered Eligible 1998*
KTZ-00299	Deering Ipuiutak House and Cache	Prehistoric House, Cache	Ipiutak, Thule	Unevaluated
KTZ-00300	Deering Western Thule House 1	Prehistoric Multi-Room House Pit	Ipiutak, Thule	Unevaluated
KTZ-00301	Deering Western Thule House 2	Prehistoric House Pit	Ipiutak, Thule	Unevaluated

**Under a 1998 Programmatic Agreement for the Deering Village Safe Water Program, the resource was treated as eligible for NRHP inclusion. However, it is noted in the IBS system that the resource has not received a formal determination of eligibility.*

Area of Potential Effects (APE)

Review of the OHA's IBS System indicates that no previously documented archaeological sites, historic buildings or structures are present in the proposed APE. Two districts are present within Deering that do not have defined boundaries. The Deering Archaeological District (KTZ-00169) and the Deering Historic District (KTZ-00170) both presumably cover the Deering townsite. The Deering Archaeological District is comprised of four archaeological sites (KTZ-00023, KTZ-00168, KTZ-00300, and KTZ-00301) containing an Ipiutak ceremonial house, a cold storage celllar, and two Western Thule sod houses. The Deering Historic District contains two resources, sites KTZ-00023 and KTZ-00169. Both resources have structural elements and occupation history dating to historic time periods. Both of the districts were determined eligible in 1998 by the U.S. Public Health Service and received Alaska SHPO concurrence (OHA 2013). No documentation to support the finding of either district, such as justified boundaries, can be found in the IBS system; however, both resources are part of the 1998 Deering Programmatic Agreement Regarding Actions Affecting Deering Archaeological District (KTZ-00169) and the Deering Historic District (KTZ-00170) (Deering Programmatic Agreement 1998). Given the high density of culturally significant materials buried in Deering, it is possible that both districts have undiscovered buried components. However, since no defined boundaries exist, it is not presently known whether portions of either district are present in the proposed APE, which begins within the townsite (Figure 10).

Figure 10. Aerial imagery from the IBS system depicting the location of AHRS sites in relation to the northern end of the proposed APE. The satellite imagery for Deering is of poor quality, while the Deering Archaeological District (KTZ-00169) and the Deering Historic District (KTZ-00170) do not have boundaries.

Greater Area/Project Vicinity

Beyond the limits of the proposed APE and within the city limits of Deering, there are a total of 13 resources recorded in the AHRS database, including the two aforementioned districts (OHA 2013). All 13 resources are considered archaeological, with both prehistoric and historic periods represented. Aside from the two districts, there is one burial, one cemetery, three houses, two sites with house pits, one house with cache, one cold storage cellar, one wagon road, and one destroyed village site. The two districts, KTZ-00169 and KTZ-00170, have been determined eligible for NRHP inclusion. The remaining 10 resources have not been formally evaluated for NRHP eligibility.

NRHP Resources

No NRHP listed resources are present within the boundaries of Deering or within the proposed APE. One resource, the Fairhaven Ditch (BEN-00069), is erroneously listed in the National Register as being located in the Deering area (NPS 2013); however, only the portion of the ditch located within the boundaries of the Bering Land Bridge National Monument is included in the NRHP listing. That portion of the ditch is located nearly 16 miles to the southwest of Deering. The historic ditch is the largest of more than 500 miles of ditch constructed on the Seward Peninsula to carry water to placer gold mines during the early 1900s.

Historic Trails

A review of the RS-2477 Historic Trails Data Layer in the IBS database was conducted to ascertain the presence of any historic transportation routes within or adjacent to the proposed APE. The review indicated that no documented RS2477 historic routes are located within or adjacent to the proposed APE (OHA 2013). The nearest trail is the Candle-Deering Trail (RST 1737), which is at the eastern edge of the Deering townsite and is approximately 0.75 miles east of the proposed APE. The route begins at Candle and runs northwest to the coast of the Kotzebue Sound, then west to Deering. The trail was used as a postal delivery route and for general transportation (Alaska DNR 2013).

The Alaska Heritage Resource Survey (AHRS) component of the IBS database revealed that a previously documented resource, the Deering to Inmachuk Trail, is located within city boundaries. The wagon road is 25 miles in length, with portions initially constructed in 1907 and entire road completion by 1911. The road is still used today to access the Utica Mine claim area and the Inmachuk River. No formal NRHP evaluation has been completed for the resource.

CULTURAL RESOURCES SURVEY RESULTS

Survey Coverage

The proposed road corridor was divided into three test areas that correspond to the engineering plans for the proposed road route, which were provided by the Native Village of Deering (Figure 11).

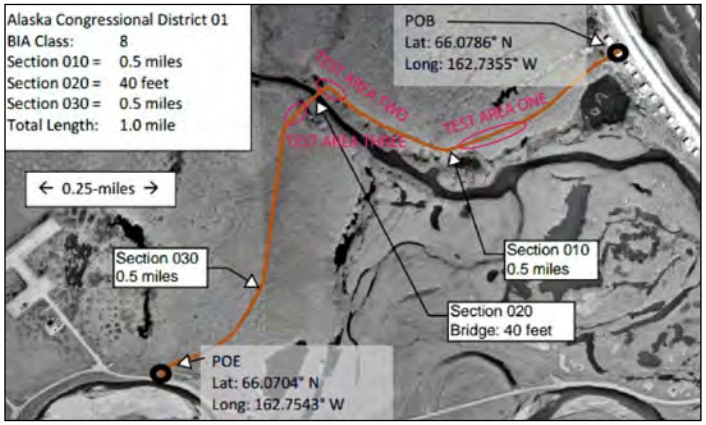


Figure 11. Engineering plans depicting proposed APE, Sections, and Test Areas 1 – 3.

The proposed road corridor was not strictly defined and ranged in width from 16 to 20 feet, prompting a wider survey coverage to allow for slight shifts in planning, should they occur, and prevent the need for additional survey of altered future routes. The river crossing portion of the survey area is 40 feet wide, so the field archaeologists expanded the survey area approaching the north and south banks of Smith Creek to 40 feet. The survey area was largely empty of cultural material. However, oil drums, Styrofoam associated with the construction of the Deering Road, driftwood, and modern trash was scattered across all three test areas. Waypoints were collected for the survey route, shovel probes, non-natural features, and gravel sources (Table 4).

Table 4. Field Work Waypoints

WAYPOINT NAME / #	DESCRIPTION	LATITUDE	LONGITUDE
DE01	Gravel pack/road remnant near city of Deering shed	66.07806	-162.73802
DE02	Shovel Probe 1	66.07800	-162.73811
DE03	Shovel Probe 2	66.07813	-162.373830
DE04	Gravel pack/road remnant	66.07783	-162.73874
DE05	Gravel pack/road remnant	66.07771	-162.73878
DE06	North end of ridge in section 010 .5 miles "Test area 1"	66.07626	-162.74133
DE07	Section 020 Bridge crossing	66.07681	-162.74841
DE08	City owned barn at north end of trail	66.07835	-162.73697
DE09	South Side of 020 Bridge crossing	66.07579	-162.74996
DE10	Raised trail remnant	66.07810	-162.73644
DE11	Raised trail remnant	66.07767	-162.73711
DE12	Raised trail remnant	66.07714	-162.73796
DE13	Raised trail remnant	66.07701	-162.73831
DE14	Raised trail remnant	66.07673	-162.73911
DE15	Raised trail remnant	66.07638	-162.74044
DE16	Raised trail end	66.07623	-162.74086
DE17	Shovel Test 1 at end of trail	66.07623	-162.74115
DE18	Shovel Test 2	66.07635	-162.74058
DE19	Shovel Test 3	66.07652	-162.73989
DE20	Shovel Probe 3	66.07679	-162.74826
DE21	Shovel Probe 4	66.07678	-162.74828
DE22	Shovel Probe 5	66.07680	-162.74844
DE23	Shovel Test 4	66.07050	-162.75274
DE24	Shovel Test 5	66.07071	-162.75173
DE25	Shovel Test 6	66.0769	-162.75037
DE26	Shovel Test 7	66.07065	-162.75040
DE27	Shovel Probe 6	66.07077	-162.75061
DE28	Possible gravel source 1	66.02814	-162.82539
DE29	Possible gravel source 2	66.01720	-162.84238

Test Area One

In Test Area One, the majority of the modern trash was concentrated in the northern portion of the survey area nearest the city garage. Local informants said that the garage stood on the site of the old city dump, and that the soil around the dump was severely contaminated (Figure 12). The presence of fifty to eighty 55-gallon oil drums and slicks of oil in the bog ponds supported the assertion that the area was contaminated from activities related to the dump.

Figure 12. City-owned garage with 55-gallon drums and dump debris. (©TNSDS)

Test Area One included the remnants of a trail (Figure 13). The Native Village of Deering indicated in their Request for Proposal (RFP) that the new road corridor followed a historic trail used by horse drawn wagons during early morning days. The literature review revealed a possible AHRS site corresponding to the reported historic trail – KTZ-00034 is the Inmachuk-Deering Wagon Trail. However, the remnant trail identified during the survey cannot be definitively identified as historic or as the mining trail specifically. The trail was only visible through slightly raised pads and disturbance vegetation and was discontinuous. The remnants were interrupted by swaths of marshes, ponds, and wet tundra grasses. Furthermore, there were no historic remains near or on the raised trail remnants. There was no mining debris, historic structures, or metal artifacts present on the surface, or in test units. Waypoints were taken at the high points of what may be the historic trail.

Figure 13. Raised trail remnant in center of image; view facing south. (©TNSDS)

Additionally confusing the question of the historic trail was the presence of another remnant gravel trail to the west of the city garage and just outside the proposed road corridor. The more westerly trail had similar vegetation and discontinuous raised pads separated by low, wet bogs and small ponds. Only the suggestion in the RFP indicated that the remnant trail mapped during survey was part of the KTZ-00034, and on the ground findings did not clearly identify the remnant trail as historic. Even if this portion represents the Deering side of the Inmachuk-Deering trail, it has been destroyed by stream and tidal activity to the point that its physical integrity has been compromised beyond recognition. The route of the trail was mapped (Figure 14) using GPS waypoints along its center-line (Table 5).

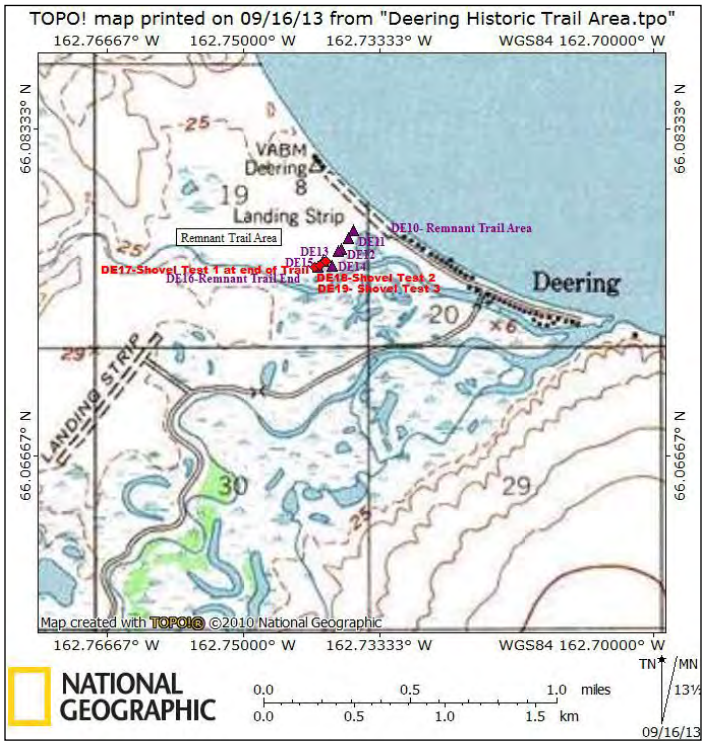


Figure 14. Mapped location of trail remnant waypoints , depicted as purple triangles

Table 5. Trail Remnants Waypoints

WAYPOINT NAME / #	DESCRIPTION	LATITUDE	LONGITUDE
DE10	Trail remnant	66.07810	-162.73644
DE11	Trail remnant	66.07767	-162.73711
DE12	Trail remnant	66.07714	-162.73796
DE13	Trail remnant	66.07701	-162.73831
DE14	Trail remnant	66.07673	-162.73911
DE15	Trail remnant	66.07638	-162.74044
DE16	Trail remnant end	66.07623	-162.74086
DE17	Shovel Test 1 at end of trail	66.07623	-162.74115
DE18	Shovel Test 2	66.07635	-162.74058
DE19	Shovel Test 3	66.07652	-162.73989

Test Area Two

Test Area Two was comprised of the low-lying areas on both the north and south banks of Smith Creek. The Native Village of Deering specified that the bridge crossing should be about 40 feet long. However, the area designated for the crossing was much longer than the estimated 40 feet. The terrain of Test Area Two was the wettest and lowest-lying portion of the survey area (Figure 15). It consisted mostly of wet tundra grasses, and subsurface tests rapidly filled with water. Modern trash, wooden debris, and driftwood concentrated around the area suggested they were displaced through tidal and flooding activity (Figure 16). No artifacts or historic structures were found in Test Area Two.

Figure 15. View facing south, overlooking the southern end of the proposed APE from the Smith Creek crossing in Test Area Two. (©TNSDS)

Figure 16. Modern debris observed in Test Area Two. (©TNSDS)

Test Area Three

Test Area Three extended from the south bank of Smith Creek in a southeasterly direction to the proposed intersection with the existing Deering Airport Road. This test area consisted of large, wet tracts of boggy tundra and small ponds, with only one area of testable land. Test Area Three was similarly scattered with debris and driftwood like Test Areas One and Two. Subsurface tests in Test Area Three were placed on benches paralleling the existing Deering Airport Road and the Inmachuk River (Figure 17).

Figure 17. Ridges paralleling the Inmachuk River, view facing southwest. (©TNSDS)

Gravel Sources

Gravel for the proposed evacuation road will be borrowed from two existing gravel sites. The first is stocked and the second is not. However, the unstocked gravel is easily

accessible with good road access, even during high tide. The first borrow site is at mile 6.5 of the Deering Airport Road and the second borrow site is at mile 8 (Figure 18).

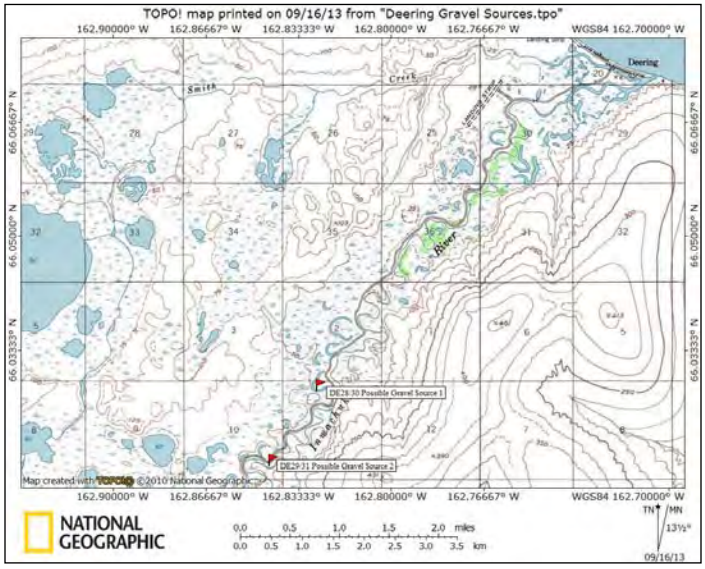


Figure 18. Map of proposed gravel sources for the project.

Results of Subsurface Testing and Soils Analysis

Test Area One

Two localities were tested in Test Area One (Figure 19). The first was the raised gravel pad nearest the city garage and a control probe to the west of the gravel pad. The second locality was a portion of the raised trail remnants. Tests were placed at the point where the alleged trail was no longer visible.

Table 6. Test Area One Shovel Probes and Shovel Tests

WAYPOINT NAME / #	DESCRIPTION	LATITUDE	LONGITUDE
DE02	Shovel Probe 1	66.07800	-162.73811
DE03	Shovel Probe 2	66.07813	-162.373830
DE17	Shovel Test 1 at end of trail	66.07623	-162.74115
DE18	Shovel Test 2	66.07635	-162.74058
DE19	Shovel Test 3	66.07652	-162.73989

Figure 19. Test Area One shovel probe and testing areas.

The first test locality with the two shovel probes revealed a sandy gravel fill to 32 cmbs. The control probe was typical of tundra soils with a rich organic layer, dense roots toward the top, which thinned at greater depths. The soils were well saturated and dense, and the lowest level was very wet (Table 6).

Test Area One shovel tests were placed on the high points of the remnant trail (Table 7). Shovel Test 1 was placed where the trail became indiscernible from the rest of the tundra. The thick levels of grey silt and clay indicate river flooding activity that washed away the trail (Figure 20). In Shovel Test 2, the grey silt did not form a full layer, but was mixed thinly from 41-50 cmbs. A level of light reddish brown silt became evident in Shovel Tests 2 and 3, and Shovel Test 3 had a thin layer of the grey river silt. These three shovel tests indicate an active stream with flooding episodes contributing to the destruction of the remnant trail. This is further supported by the lack of artifacts in or around the shovel tests and the distribution of modern debris around the overall test area. No artifacts were recovered or observed in Test Area One.

Table 7. Test Area One Shovel Tests

SHOVEL TEST	LOCATION: LAT/LONG	DIAMETER	DEPTH	MUNSELL	SOIL DESCRIPTION
1	WPT DE17 N: 66.07623 W: -162.74115	55 cm	0-52 cmbs	0-16 cmbs: 10YR 2/2 17-29 cmbs: 10YR 4/1 30-33 cmbs: 10YR 2/2 34-52 cmbs: 10YR 4/1	0-16: Sterile: Organic mat w/roots and wet texture, very dark brown 17-29: Sterile: Grey river silt wet clay 30-33: Sterile: Thin organic stain with sparse roots similar in color and texture to 0-16 34-52: Sterile: Grey river silt, wet clay.
2	WPT DE18 N: 66.07635 W: -162.74058	70 cm	0-53 cmbs	0-19 cmbs: 10YR 2/2 20-40 cmbs: 10YR 5/6 41-50 cmbs: 10YR 2/2 51-53 cmbs: 10YR 5/6	0-19 cmbs: Sterile: Thick organic mat with roots and wet texture, very dark brown 20-40 cmbs: Sterile Light reddish brown fine silt with fewer roots than organic level, but fine roots still present 41-50 cmbs: Sterile: Dense dark level with roots similar to 0-19 51-53 cmbs: Light reddish brown silt interspersed with permafrost
3	WPT DE19 N: 66.07652 W: -162.73989	60 cm	0-50 cmbs	0-10 cmbs-10YR 2/2 11-18 cmbs -10YR 3/4 19-26 cmbs- 10YR 2/2 27-29 cmbs: Grey sand 30-50 cmbs: 10YR 5/6 with 10 YR 5/2 mottling	0-10 cmbs: Sterile: Thick organic mat with roots and wet texture, very dark brown 11-18 cmbs:Sterile: Dark root staining just below organic level 19-26 cmbs: Sterile: Dense, dark level similar to 0-10 cmbs 27-29 cmbs: Very thin level of grey river sand 30-50 cmbs: Lighter brown silt mottled with thick staining similar to 11-18cmbs with a frozen floor

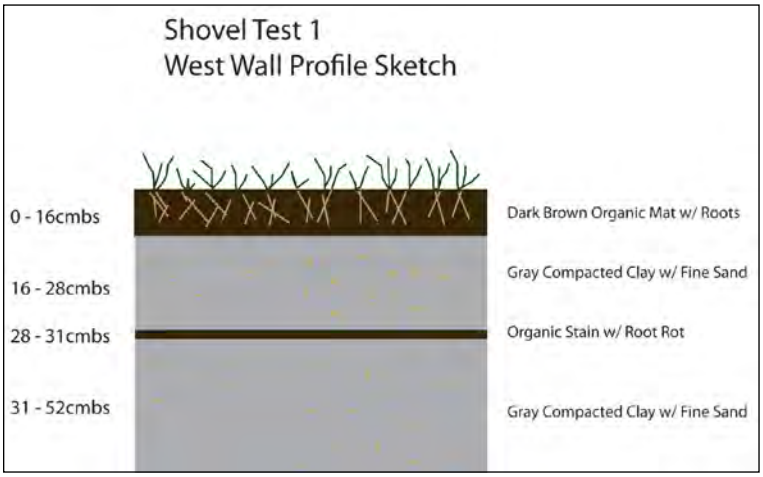


Figure 20. Test Area One, Shovel Test One wall profile. (©TNSDS)

Test Area Two

Subsurface testing in Test Area Two consisted of three shovel probes (Figure 21). The probes rapidly filled with water (Figure 22) and all soils were heavily saturated due to their close proximity to the river. No artifacts were observed or recovered in any of the shovel probes in Test Area Two (Table 8).

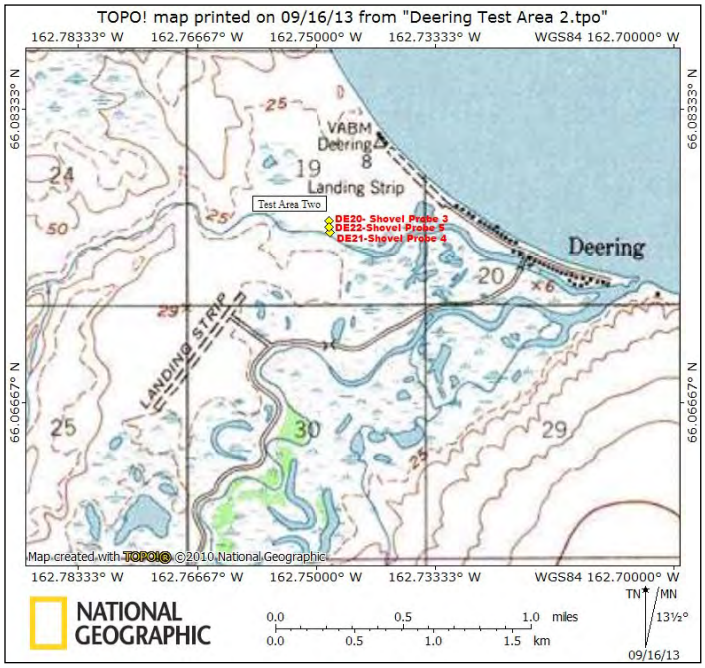


Figure 21. Test Area Two shovel probe locations.

Figure 22. Example of a flooded shovel probe in Test Area Two. (©TNSDS)

Table 8. Test Area Two Shovel Probes

WAYPOINT NAME / #	DESCRIPTION	LATITUDE	LONGITUDE
DE20	Shovel Probe 3	66.07679	-162.74826
DE21	Shovel Probe 4	66.07678	-162.74828
DE22	Shovel Probe 5	66.07680	-162.74844

Test Area Three

Shovel tests in Test Area Three were placed along a bench that runs north-south parallel to the existing Deering Road (Figure 23). The ridge represents the highest point in the test area and is parallel to the Inmachuk River. Shovel Test 4 and 5 were consistent with the rest of the shovel tests from Test Area One with the mix of dark, root-rich soils and lighter brown fine silts with fewer roots (Table 9). Shovel Tests 6 and 7 had inclusions of non-cultural charcoal, extremely thin mottling of permafrost and a consistent level of permafrost at the bottom of the units. The presence of charcoal was inconsistent with other shovel tests, so an additional shovel probe was placed to determine if the charcoal was a continuous horizon or if it was indicative of a cultural site (Table 10).

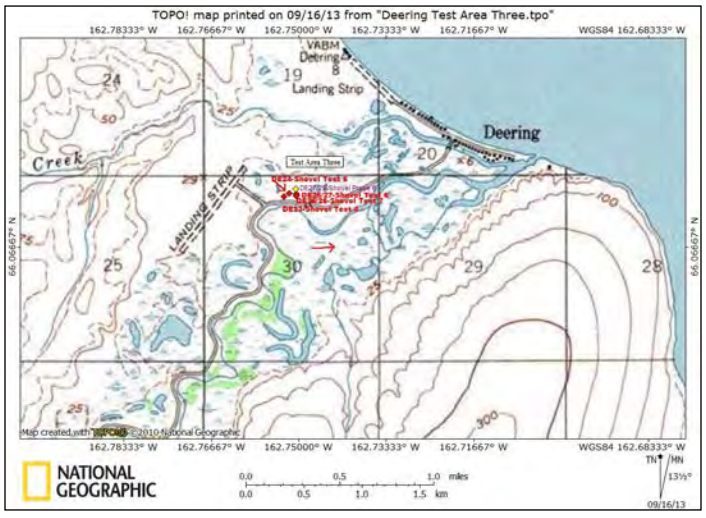


Figure 23. Test Area Three shovel probe and shovel test locations.

Charcoal mottling was present in Shovel Tests 6 (Figure 24) and 7, as well as Shovel Probe 7, in conjunction with permafrost layers. There are no large pieces of wood, and all organic remains in the charcoal area were medium sized roots.

Table 9. Test Area Three Shovel Tests

SHOVEL TEST	LOCATION: LAT/LONG	DIAMETER	DEPTH	MUNSELL	SOIL DESCRIPTION
4	WPT DE 23 N: 66.07050 W: 162.75274	50 cm	0-56cmbs	0-10 cmbs: 10 YR 2/2 11-18 cmbs: 10 YR 2/2 19-25 cmbs: 10 YR 5/6 26- 37 cmbs: 10 YR 2/2 38-50 cmbs: 10 YR 5/6	0-10 cmbs: Sterile: Organic mat w/roots and wet texture, very dark brown 11-18 cmbs: Sterile: Dark wet texture, very dark brown with fewer roots 19-25 cmbs: Sterile: Light reddish brown fine silt with roots and root damage present 26- 37 cmbs: Sterile: Dark brown with very few roots present 38-50 cmbs: Sterile: Light reddish brown fine silt with mottled permafrost
5	WPT DE 24 N: 66.07071 W:162.75173	53 cm	0-55 cmbs	0-10 cmbs: 10 YR 2/2 11-34 cmbs: 10 YR 5/6 w/ 2 cm 10 YR 2/2 inclusions 35-53 cmbs: 10 YR 2/2	0-10 cmbs: Sterile: Organic mat w/roots and wet texture, very dark brown 11-34 cmbs: Sterile: Light reddish brown fine silt with roots and 2 cm of dark brown mottling 35-53 cmbs: Sterile: Dark brown with sparse roots and permafrost
6	WPT DE 25 N: 66.0769 W: 162.75037	54 cm	0-63 cmbs	0-12 cmbs: 10 YR 2/2 13-52 cmbs: 10 YR 5/6 with 10 YR 2/1 inclusions ranging from 5 to 8 cm 53-63 cmbs: 10 YR 1/1	0-12 cmbs: Sterile: Organic mat w/roots and wet texture, very dark brown 13-53 cmbs: Sterile: Light reddish brown fine silt with roots and inclusions of dark, dry, non-cultural charcoal 53-63cmbs: Sterile: Dark, semi frozen soil combined with black charcoal just above a continuous permafrost layer with thick root chunks
7	WPT DE 26 N: 66.07065 W: 162. 75040	50 cmbs	0-63 cmbs	0-15 cmbs: 10 YR 2/2 16-34 cmbs: 10 YR 5/6 with an 8cm inclusion of grey river silt and 10YR 1/1 35-63 cmbs: 10 YR 1/1	0-15cmbs: Sterile: Organic root mat with roots and wet texture 16-34cmbs: Sterile: Light reddish brown fine silt with an 8 cm inclusion of grey river silt and large 5cm-15cm inclusions of dark dry non-cultural charcoal. 35-63 cmbs: Sterile: Dark, semi frozen soil combined with black charcoal just above a continuous permafrost root layer with thick root chunks

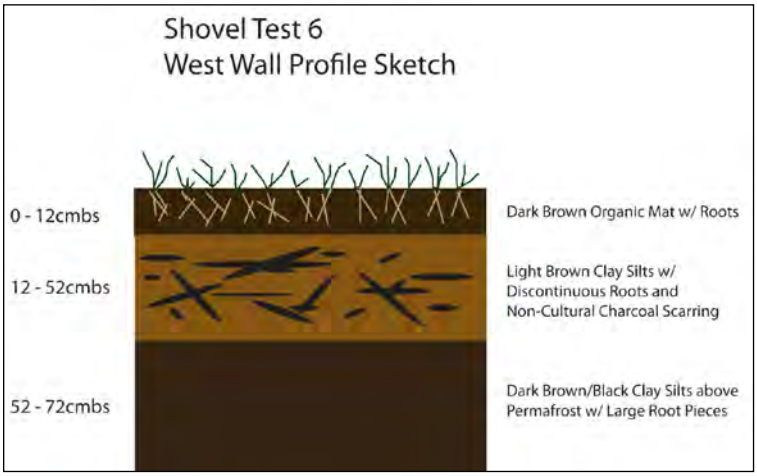


Figure 24. Shovel Test 6 wall profile. Note the non-cultural charcoal. (©TNSDS)

Table 10. Test Area Three Shovel Probe

WAYPOINT NAME / #	DESCRIPTION	LATITUDE	LONGITUDE
DE27	Shovel Probe 6: Negative	66.07077	-162.75061

SUMMARY OF CULTURAL RESOURCES SURVEY RESULTS

The cultural resources survey yielded no archaeological materials and no historic structures. The remnant trail located during the survey could not be definitively identified as the Deering portion of the Inmachuk-Deering Trail (KTZ-036). There were no artifacts in the shovel tests or cultural materials associated with the trail. Moreover, debris scattered around the total survey area was concentrated near the river and suggested tidal and flooding activity. The debris consisted of wooden pallets, Styrofoam, modern trash, and 50-gallon oil drums. The permafrost is mottled throughout the middle levels and continuously present throughout the lowest level of soils in shovel tests excavated on the remanent trail. Along with the saturated soils and silt clay deposits, these conditions further suggest an active tidal and flooding area, which contributed to the destruction of any possible archaeological material. Although the areas with highest probability were tested, nothing indicative of prehistoric and/or historic use and occupation was identified.

SECTION 106 RECOMMENDATIONS

The cultural resources investigation for the West Airport Road Project involved a literature and archival review followed by a pedestrian survey within the proposed APE, which consists of the road right of way and two gravel sources. Background research revealed a substantial presence of cultural resources within the village of Deering, including two districts. The point of beginning for the proposed road is located in the village of Deering; however, an on-site inspection revealed that this portion of the proposed APE is in an area of heavy disturbance and contaminated soils. Communication with local residents indicated that the area was at one time used as a dump. The West Airport Road Project will not result in effects to the archaeological district, site KTZ-00169. Beyond the village, the proposed APE traverses a swampy tundra landscape with high water content. The area is seasonally impacted by flooding, with evidence of abundant subsurface fluvial activity. This suggests that stable, intact soils are not present in many areas of the proposed APE. The two gravel sources have been previously used and were surveyed for cultural resources; none were identified. Although archaeological resources are present in the vicinity of the project area, no artifacts or cultural remains were uncovered in the proposed APE either through surface survey or subsurface investigations. As such, it is recommended that a finding of no historic properties adversely affected be issued for the West Airport Road Project pursuant to Section 106 of the NHPA and its implementing regulations (36CFR Part 800).

REFERENCES

Ackerman, Robert A.

1980 Southwest Alaska Archaeological Survey: Kagati Lake, Kisaralik-Kwethluk. A final research report to the National Geographic Society. Grant No. 2032.

1994 The Early Prehistory of Southwestern and Southeastern Alaska. Paper presented at the 45th Annual Arctic Science Conference, Anchorage, Alaska.

1996 Lime Hills, Cave 1. In *American Beginnings*, edited by Frederick Hadleigh West, pp. 470-478. University of Chicago Press, Chicago.

Alaska Department of Commerce and Economic Development (ADCED)

2013 Community Profile: Deering. Available at: http://www.dced.state.ak.us/cra/DCRAExternal/community/Details/a4fffa30-0aa6-4d10-8399-d86e555a9182.

Alaska Department of Environmental Conservation (DEC), Division of Spill Prevention and Response

2013 Contaminated Site Summaries: Former Utica Mine. Available at: http://dec.alaska.gov/spar/csp/ sites/utica.htm. Accessed September 6, 2013.

Alaska Department of Natural Resources (DNR), Division of Mining, Land, and Water

2013 RS2477 Trails Search Database. Available at: http://dnr.alaska.gov/mlw/trails/rs2477/ rst_srch.cfm. Accessed September 1, 2013.

Alaska Engineering Commission (AEC)

1910 Report of the Board of Road Commissioners for Alaska. 1910. Washington, D. C. Government Printing Office. University of Michigan Transportation Library. Free E-book at https://play.google.com/store/books/details?id=_aDVAAAAMAAJ&rdid=book-_aDVAAAAMAAJ&rdot=1.

Alaska Office of History and Archaeology (OHA)

1987 Alaska Heritage Resource Survey Card for BEN-00069. Available on file at the Alaska Office of History and Archaeology, Anchorage.

2000 Alaska Heritage Resource Survey Card for KTZ-00023. Available on file at the Alaska Office of History and Archaeology, Anchorage.

2006 Alaska Heritage Resource Survey Card for KTZ-00299. Available on file at the Alaska Office of History and Archaeology, Anchorage.

2012 Proposed Community Building Lot in Deering, Alaska. Letter response to report. Available on file at the Alaska Office of History and Archaeology, Anchorage.

2013 Integrated Business Suite, Alaska Heritage Resource Survey. Alaska Department of Natural Resources, Department of Parks and Recreation, Office of History and Archaeology, Anchorage.

Alaska State Library

2013a Friends' Church, Deering Alaska, 1929. Clarence L. Andrews Photograph Collection, ca. 1892-1940. ASL-PCA-45-0057. Available at: http://vilda.alaska.edu/cdm/singleitem/collection/ cdmg21/id/11127/rec/13.

2013b Reindeer herd near Deering. Robin A. Dailey Photograph Collection, ca. 1907-1918. ASL-PCA-112-110. Caribou Herd Near Deering. Alaska State Library - Historical Collections. Available at: http://vilda.alaska.edu/cdm/singleitem/collection/cdmg21/id/11230/rec/8.

Allison, John

2002 Report of Cultural Resources Investigations: The Deering Road Project No. 466, Deering, Alaska. Prepared for the Native Village of Deering and the Alaska State Historic Preservation Officer. Prepared by the Bureau of Indian Affairs, Alaska Region, Branch of Roads, Juneau.

Anderson, Douglas D.
1970 Akmak: An Early Archaeological Assemblage from Northwest Alaska. *Acta Arctica*16:1-180.
1984 Prehistory of North Alaska. In *Handbook of North American Indians, Volume 5: Arctic*. Edited by D. Damas, pp. 80-93. Smithsonian Institution, Washington, D.C.
1988 Onion Portage: The Archaeology of a Deeply Stratified Site from the Kobuk River, Northwest Alaska. *Anthropological Papers of the University of Alaska* 22(1-2):i-163.

Andrews, Clarence L.
1939 *The Eskimo and His Reindeer in Alaska*. The Caxton Press, Caldwell, Idaho.

Beechey, Capt. Frederick W.
1831 *Narrative of a Voyage to the Pacific and Beering's Strait (2 volumes)*. Henry Colburn and Richard Bentley, London.

Bowers, Peter M.
2000 Interim Report on the Deering Village Safe Water Archaeological Program. Prepared for Alaska Department of Environmental Conservation - Village Safe Water Office, the City of Deering, and the Deering IRA Council by Northern Land Use Research, Inc. Fairbanks, Alaska.
2001 Interim Report on the Deering Village Safe Water Archaeological Program. Prepared for Alaska Department of Environmental Conservation Village Safe Water Office, the City of Deering and the Deering IRA Council by Northern Land Use Research, Inc. Fairbanks, Alaska.
2002b Emergency Excavation of Human Remains in Deering (letter report). Prepared for Native Village of Deering, by Northern Land Use Research, Inc. Technical Report No.170. Fairbanks, Alaska.
2002a Interim Report on the Deering Village Safe Water Archaeological Program. Prepared for Alaska Department of Environmental Conservation Village Safe Water Office, the City of Deering, and the Deering City Council by Northern Land Use Research, Inc. Fairbanks, Alaska.
2004 Archaeological Monitoring of New Health Clinic Construction in Deering, Alaska. SHPO File No.: 3130-1R Denali Commission. Prepared for Maniilaq Association, DOWL Engineers, the City of Deering, and the Deering IRA Council by Northern Land Use Research, Inc. Technical Report No. 229. Fairbanks, Alaska.
2007 Cultural Resource Survey of Proposed Material Source and Monitoring of Road Improvements in the Vicinity of Deering, Alaska. Prepared for Traditional Village of Deering, Alaska by Northern Land Use Research, Inc. Fairbanks, Alaska.
2009 The Archaeology of Deering, Alaska Final Report on the Deering Village Safe Water Archaeological Program. Prepared for Alaska Department of Environmental Conservation Village Safe Water Office, the City of Deering, and the Deering City Council by Northern Land Use Research, Inc. Fairbanks, Alaska.

Bowers, Peter M., and Scott Legge
2002 Cultural Resources Assessment of the Proposed Deering Bulk Fuel Upgrade, File No.: 3130-1R Denali Commission. Prepared for Alaska Industrial Development and Export Authority (AIDEA) by Northern Land Use Research, Inc. Technical Report No. 157a. Fairbanks, Alaska.

Mason, Owen K., and Peter M. Bowers
2009 The Origin of Thule is Always Elsewhere: Early Thule Within Kotzebue Sound, Cul de sac or Nursery? In *The Thule Culture: New Perspectives in Inuit Prehistory*. Symposium Proceedings in Honor of Research Professor H. C. Gulløv, 2007, pp. 25-44. Danish National

Bowers, Peter M., Jennifer I. M. Newton, Joshua D. Reuther, and Catherine M. Williams
2005 Interim Report on the Deering Village Safe Water Archaeological Program. Report prepared for the City of Deering, the Native Village of Deering, Alaska Department of Environmental Conservation, Village Safe Water Office, and the Alaska State Historic Preservation Officer by Northern Land Use Research, Inc., Fairbanks, Alaska.

Bowers, Peter M., Jennifer I. M. Newton, Catherine M. Williams, and Joshua D. Reuther
2003 Interim Report on the Deering Village Safe Water Archaeological Program. Prepared for Alaska Department of Environmental Conservation Village Safe Water Office, the City of Deering, and the Deering IRA Council by Northern Land Use Research, Inc. Fairbanks, Alaska.

Bowers, Peter M., Joshua D. Reuther, Catherine M. Williams, Jennifer I. M. Newton, Owen K. Mason, and Becky M. Saleeby
2006 Interim Report on the Deering Village Safe Water Archaeological Program. Prepared for City of Deering, The Native Village of Deering, Alaska Department of Environmental Conservation - Village Safe Water Office, and the Alaska State Historic Preservation Officer by Northern Land Use Research, Inc. Fairbanks, Alaska.

Bowers, Peter M., Catherine M. Williams, Owen K. Mason, and Robin O. Mills
1999 Preliminary Report on the 1999 Deering Village Safe Water Archaeological Program. Prepared for Alaska Department of Environmental Conservation, Village Safe Water Office, the City of Deering, and the Deering IRA Council by Northern Land Use Research, Inc. Technical Report No. 80a. Fairbanks, Alaska.

Bowers, Peter M., Catherine M. Williams, Owen K. Mason, Joshua D. Reuther, Jennifer I. M. Newton, Claire Alix, Becky M. Saleeby, Madonna L. Moss, and Cody Strathe
2007 Interim Report on the Deering Village Safe Water Archaeological Program. Prepared for City of Deering, the Native Village of Deering, Alaska Department of Environmental Conservation - Village Safe Water Office, and the Alaska State Historic Preservation Officer by Northern Land Use Research, Inc. Fairbanks, Alaska.

Bockstoce, J.
1979 *The Archaeology of Cape Nome*. University Museum Monograph 38. The University Museum, University of Pennsylvania, Philadelphia.

Braund, Stephen R. and Associates
2001 Unolocal Archaeological Compliance Iliamna Prospect Section 106 Final Report. Written by R. Harritt, E. Grover, and S. Braund. Document available at the Alaska Office of History and Archaeology, Anchorage.

Burch, Ernest S., Jr.
1994 The Iñupiat and the Christianization of Arctic Alaska. *Études/Inuit/Studies* 18(1-2):81-104.

Collins, H. B.
1964 The Arctic and Subarctic. In *Prehistoric Man in the New World*, edited by J.D. Jennings, pp. 85-114. University of Chicago Press, Chicago.

Dumond, Donald E.
1984 Prehistory: Summary. In *Handbook of North American Indians, Volume 5: Arctic*. Edited by D. Damas, pp. 72-79. Smithsonian Institution, Washington, D.C.
1987 *The Eskimos and the Aleuts*. Revised Edition. Thames and Hudson, London.

Deering Programmatic Agreement
1998 Programmatic Agreement Regarding Actions Affecting Deering Archaeological District (KTZ-00169) and the Deering Historic District (KTZ-00170) amoung the Deering IRA; Deering City Council; Alaska State Historic Preservation Officer, Indian Health Service, Alaska Area Native Health Service; U.S. Department of Agriculture, Rural Development; U.S. Army Corps of Engineers, Alaska District; National Park Service; Northwest Alaska Native Association; Northwest Arctic Borough; and the Advisory Council on Historic Preservation. Available on file at the Alaska Office of History and Archaeology, Anchorage.

Dixon, R. Greg
1994 An Archaeological Reconnaissance of Lands to be Effected by the Proposed Construction of a Sewer Line and Treatment Plant in Deering, Alaska. Report prepared for the City of Deering and the Department of Environmental Conservation, Village Safe Water Program.

Ducker, James H.
1996 Out of Harm's Way: Relocating Northwest Alaska Eskimos, 1907-1917. *American Indian Culture and Research Journal* 20(1):43-71.

Eldridge, Kelly A.
2012 Final Report of Investigations, Archaeological Data Recovery at the Snake River Sandspit Site in Nome, Alaska. Written for the U. S. Army Corps of Engineers, Alaska District. Anchorage, Alaska.

Giddings, J. Louis, Jr.
1957 Round Houses in the Western Arctic. *American Antiquity* 23(2): 121-135.
1964 *The Archaeology of Cape Denbigh*. Brown University Press, Providence, Rhode Island.

Giddings, J. Louis, Jr., and Douglas D. Anderson
1986 *Beach Ridge Archaeology of Cape Krusenstern: Eskimo and Pre-Eskimo Settlements Around Kotzebue Sound, Alaska*. Publications in Archaeology 20. U.S. Department of the Interior, National Park Service, Washington, D.C.

Hadley, Martha E.
1969 *The Alaskan Diary of a Pioneer Quaker Missionary*. Golden Rule Press, Orlando, Florida.

Harritt. R. K.
1994 *Eskimo Prehistory on the Seward Peninsula, Alaska*. National Park Service Resource Research Report NPS/ARORCR/CRR-93/21. U.S. Department of the Interior, Washington, D.C.

Henn, W.
1978 *Archaeology on the Alaska Peninsula: The Ugashik Drainage, 1973-1975*. University of Oregon Anthropological Papers No. 14, Eugene.

Henshaw, Fred F., and G. Parker
1913 *Surface Water Supply of Seward Peninsula, Alaska*. USGS Water Supply Paper No. 314. U.S. Government Printing Office, Washington, D.C.

Holmes, Charles
1986 *Lake Minchumina Prehistory: An Archaeological Analysis*. Aurora Alaska Anthropological Association Monograph Series 2, Alaska Anthropological Association, Anchorage.

Holmes, C.E., and R.O. Stern
1982 Cultural Resources Survey: Deering Airport Material Site. Public Data File 84-24, Alaska Division of Geological and Geophysical Surveys. Copy on file, Alaska Office of History and Archaeology, Anchorage.

Irving, William
1962 Provisional Comparison of Some Alaskan and Asian Stone Industries. In: *Prehistoric Cultural Relations between the Arctic and Temperate Zones of North America*. Edited by J. M. Campbell, pp. 55-68. Arctic Institute of North America, technical Papers No. 11, Montreal.
1964 Punyik Point and the Arctic Small Tool Tradition. Ph.D. Dissertation, University of Wisconsin, Madison.

Keithahn, Edward L.
1963 *Eskimo Adventure: Another Journey Into the Primitive*. Superior Publishing Co., Seattle, Washington.

Krauss, Michael
1988 Many Tongues-Ancient Tales. In *Crossroads of the Continents: Cultures of Siberia and Alaska*, pp. 145-150. Edited by W. Fitzhugh and A. Crowell, Smithsonian Institution Press, Washington, D. C.

Larsen, Helge
2001 *Deering: A Mens House from Seward Penninsula, Alaska*. Publications of the National Museum of Denmark Ethnographical Series 19. Aarhus University Press, Aarhus, Denmark.
1968 Trail Creek, Final Report on the Excavation of Two Caves at Seward Peninsula Alaska. *Acta Arctica* 15:7-79.

Larsen, Heldge and F. Rainy
1948 *Ipiutak and the Arctic Whale Hunting Culture*. Anthropological Papers of the American Museum of Natural History 42. New York, NY.

Lutz, Bruce J.
1982 Population Pressure and Climate as Dynamics with the Arctic Small Tool Tradition of Alaska. *Arctic Anthropology* 19(2): 143-149.

Lomen, Carl J.
1954 *Fifty Years in Alaska*. McKay, New York.

Maniilaq Association
2013 Our History. Available at: http://www.maniilaq.org/companyInfo.html. Accessed September 1, 2013.

Mason, Owen K.
2010 The Multiplication of Forms: Bering Strait Harpoon Heads as a Demic and Macroevolutionary Proxy. In *Macroevolution in Human Prehistory: Evolutionary Theory and Processual Archaeology*, edited by A.M. Prentis, I. Kiujt, and J.C. Chatters, pp 73-107. Springer, Dordrecht, Netherlands.

Mathiassen, T.
1927 Archaeology of the Central Eskimos. In *Report on the Fifth Thuel Expedition*, Vol. 4, Parts 1-2. Gyldendalske Boghandel, Copenhagen.

McClenahan, Patricia L.
1993 An Overview and Assessment of Archeological Resources, Cape Krusenstern National Monument, Alaska. National Park Service Alaska Region Resources Report NPS/ARORCR/CRR-93/20.

Mobley, Charles M.
2010 Cultural Resources Inventory for the Nome Snake River Bridge Replacement; DOT Project No. 76745, 3130-1R FHWA. Report available on file at the Alaska Office of History and Archaeology, Anchorage.

National Park Service (NPS)
2013 National Register of Historic Places Listings Database: Deering, Alaska. Available at: http://nrhp.focus.nps.gov/natreghome.do. Accessed September 1, 2013.

Nelson, E. W.
1983 The Eskimo About Bering Strait. In *Bureau of American Ethnology, Eighteenth Annual Report*. Reprint. W. Fitzhugh, editor. Originally published 1899, Smithsonian Institution Press, Washington, D.C.

Northern Land Use Research (NLUR)
2004 Cultural Resource Survey of Proposed Transmission Line from Red Devil to Sleetmute, Alaska. Prepared for Hattenburg, Dilley, and Linnell. Available at the Alaska OHA Offices, Anchorage. Report available on file at the Alaska Office of History and Archaeology, Anchorage.
2007 Archaeological Monitoring at the Snake River Spit Entrance Channel, Nome, Alaska, 2006. Written by M. Cassell, C. Gelvin-Reymiller, and S. MacGowan for U.S. Army Corps of Engineers. Report available on file at the Alaska Office of History and Archaeology, Anchorage.
2012 Ground Penetrating Radar Survey of a Proposed Community Building Lot in Deering, Alaska. Report prepared for WH Pacific and the NANA Regional Corporation. Report on file at the Alaska Office of History and Archaeology, Anchorage.

Pipkin, Mark
2005 2005 Archaeological Monitoring of the Nome Navigational Improvement Project. Report prepared by Walking Dog Archaeology for Northwind, Inc., Anchorage, Alaska.

Polk, R.L. & Co.
1907 *Polk's Alaska-Yukon Gazetteer and Business Directory 1907-8*. R.L. Polk & Co., Seattle, Washington.

Powers, W. Roger, Jo Anne Adams, Alicia Godfrey, James A Ketz, David C. Plaskett, and G. Richard Scott
1982 *The Chukchi – Imuruk Report: Archeological Investigations in the Bering Land Bridge National Preserve, Seward Peninsula, Alaska, 1974 and 1975*. Occasional Paper No. 31. Anthropology and Historic Preservation, Cooperative Part Studies Unit, University of Alaska, Fairbanks.

Ray, Dorothy Jean
1975 T*he Eskimos of Bering Strait, 1650-1898*. University of Washington Press, Seattle.
1984 Bering Strait Eskimo. In *Handbook of North American Indians, Volume 5: Arctic*. Edited by D. Damas, pp. 285-302. Smithsonian Institution, Washington, D.C.

Reanier, Richard E. Glenn W. Sheehan, and Anne M. Jensen
1998 Report of 1997 Field Discoveries City of Deering Village Safe Water Cultural Resources Project. Report prepared for City of Deering and Alaska Department of Environmental Conservation, Village Safe Water Program.

Salisbury, C. A.
1992 *Soldiers of the Mists: Minutemen of the Alaska Frontier*. Pictorial Histories Publishing Co., Missoula, Montana.

Schaff, Jean
1988 *The Bering Land Bridge National Preserve: An Archaeological Survey, Volumes I and II*. National Park Service Resource Research Management Report AR-14. U. S. Department of the Interior, Washington, D. C.

Stern, Richard O.
1980 "I Used to Have Lots of Reindeers" – The Ethnohistory and Cultural Ecology of Reindeer Herding in Northwestern Alaska. Ph.D. dissertation, Department of Anthropology, State University of New York (S.U.N.Y.) at Binghamton, New York.
2009 Archaeological Survey and Monitoring of Water Main Line Replacement, Deering, Alaska. Report prepared for CE2 Engineers, Anchorage. Report prepared by Northern Land Use Research, Inc., Fairbanks.

U.S. Army Corps of Engineers, Alaska District (USACE)
2007 Alaska Baseline Erosion Assessment, Erosion Information Paper- Deering, Alaska. Available at: http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Deering_Final%20Report.pdf.

U.S. Department of Commerce, Bureau of Census
1910 *1910 Thirteenth Census of the United States, Taken in 1910*. U.S. Government Printing Office, Washington, D.C.
1920 *14th Census of the United States Taken in 1920. Vol. 1, Population by States*. U.S. Government Printing Office, Washington, D.C.

U.S. Department of the Interior, National Park Service (USDOI, NPS)
1997 National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation. Originally published 1990. U.S. Department of the Interior, National Park Service, Cultural Resources. Available at: http://www.nps.gov/nr/publications/index.htm.

University of Alaska Anchorage (UAA)
2013 Shemya Antennas WACS. Leland A. Olson papers, 1955-1961. UAA-HMC-1064. Leland Olson images, third set. 1939 to 1959. University of Alaska Anchorage. Consortium Library. Archives & Special Collections. Available at: http://vilda.alaska.edu/cdm/compoundobject/collection/cdmg13/id/5980/rec/67.

University of Alaska Fairbanks (UAF)
2013a Flume. Seward Peninsula Album. UAF-1999-132-CO. Alaska and Polar Regions Collections, Elmer E. Rasmuson Library, University of Alaska Fairbanks. Available at: http://vilda.alaska.edu/cdm/compoundobject/collection/cdmg11/id/35063/rec/36.
2013b Interior Government School at Deering 1896-1913. Cordelia L. M. Noble Collection. UAF-1973-203-7. Alaska and Polar Regions Collections, Elmer E. Rasmuson Library, University of Alaska Fairbanks. Available at: http://vilda.alaska.edu/cdm/singleitem/collection/cdmg11/id/22/rec/35.

VanStone, James W.
1984 Exploration and Contact History of western Alaska. In *Handbook of North American Indians. Arctic*, vol. 5, edited by D. Damas, pp. 149-60. Smithsonian Institution, Washington, D. C.

Williams, Catherine M.

2000 Archaeological Monitoring of NWIHA House Lot Sewer Line Installation and Adjustment. Prepared for ADEC, VSW Office, City of Deering, and IRA Traditional Council (letter report) by Northern Land Use Research, Inc. Technical Report No. 106. Fairbanks, Alaska.

2001 Archaeological Survey of Deering Landfill and Gravel Sources (preliminary letter report). Prepared for Alaska Native Tribal Health Consortium (ANTHC) by Northern Land Use Research, Inc. Technical Report No. 142. Fairbanks, Alaska.

2002a Archaeological Monitoring of Sediment Testing for a New Tank Farm in Deering, Alaska. Prepared for CRW Engineering Group and AIDEA/AEA by Northern Land Use Research Inc. Technical Report No. 187. Fairbanks, Alaska.

2002b Cultural Resources Survey of Landfill Improvements in Deering, Alaska. Prepared for Alaska Native Tribal Health Consortium and the Deering IRA Council by Northern Land Use Research, Inc. Technical Report No. 142. Fairbanks, Alaska.

2004 Archaeological Monitoring of Fuel Line Trenches in Deering, Alaska. Prepared for CRW Engineering Group, City of Deering, Deering Traditional Council by Northern Land Use Research, Inc. Technical Report No. 242. Fairbanks, Alaska.

Woodbury, Anthony C.

1984 Eskimo and Aleut Languages. In *Handbook of North American Indians, Volume 5: Arctic*, edited by D. Damas, pp. 49-63. Smithsonian Institution, Washington, D.C.

APPENDICES

APPENDIX A. SHOVEL PROBE FORMS

trueNORTH
sustainable development solutions
www.truenorthsds.com

Project: West Airport Road
Date: 2-3 September 2013
Supervisor: RM

Shovel Probe Form

Shovel Probe #	Diameter	Depth	Artifacts		Soil Matrix Munsell	Comments/Initials
1	30 cmbs	32 cmbs	none	None	Sandy Gravel Fill 10YR 5/2	Sandy gravel fill just south of City owned shed-possibly associated with old city dump WPT: DE02 UTMS: N: 66.07806 W: -162.73802
2	30 cmbs	32 cmbs	none	None	Typical tundra soils with river silts present—overall Munsell color is very dark brown 10yr 2/2. Wet at the bottom	Typical tundra landscape "control" probe. WPT: DE03 UTMS: N: 66.70800 W: -162.73811
3	30 cmbs	45 cmbs	none	None	Wet, floods while digging Dark brown 10 YR 2/2 with 8cm inclusion of 10 YR 4/1 clay	North side of bridge crossing. WPT: DE20 UTMS: N: 66.07679 W: -162.74826
4	30 cmbs	45 cmbs	none	None	Red brown with dense roots 10 YR 5/6 , 11cm of rooty 10 YR 2/2 4 cm irregular inclusion of red roots 10YR 4/1 clay layer mottled with 10YR 2/2 rooty soil to bottom. Also extremely wet	North side of bridge crossing WPT: DE 21 UTMS: N 66.07678 W: -162.74828
5	30 cmbs	40 cmbs	none	None	10YR 4/1 clay beneath brief 10 YR 2/2 root mat with reddish brown mottling. Very wet.	North side of bridge crossing WPT DE 22 UTMS: N: 66.07680 W: -162.74844
6	30 cmbs	60 cmbs	none	None	Very dark brown 10YR 2/2 with non-cultural charcoal mottling about 1.5-3cm with permafrost at the bottom.	Test area three, on terraces near existing road. WPT: DE27 UTMS: N 66. 07077 W -162.75061

APPENDIX B. SHOVEL TEST FORMS

Phase 1 Archaeological Investigation	trueNORTH sustainable development solutions www.truenorthsds.com	Waypoint No. DE 17

Shovel Test Record

LAT/LONG: N 66.07623 / W -162.74115

Project Name: Deering IRR		Excavated By:	RM/AH
Field Number: NA		**Date: 9/2/2013**	
Site Number: NA		**Depth:**	55 cmbs
Shovel Test Number:	1	**Diameter:**	50cm x 50cm
Describe Position on Landscape: **At Southern end of remnant trail**		**Screen Size**:	1/8”
Describe Position in Relation to Surface Scatter: NA		**Surface Visibility:** **Ground Coverage:**	100% NA

Level:	Depth (cm)	Cultural Materials:	Features:	Soil Description:		
				Munsell Color	**Soil Texture/ pH**	**Soil Sample Collected**
O Horizon	0-16	None	None	10YR2-2	Thick wet, humus	No
A/B Horizon	17-29	None	None	10YR4-1	Fine silt clay	No
E Horizon	30-33	None	None	10YR2-2	Wet, thick	No
C Horizon	34-52	None	None	10YR4-1	Fine silt clay	No

Comments: Pic # 0038

Phase 1 Archaeological Investigation	trueNORTH sustainable development solutions www.truenorthsds.com	Waypoint No. DE 18

Shovel Test Record

LAT/LONG: N 66.07635 W -162.74058

Project Name: Deering IRR		Excavated By:	RM/AH
Field Number: NA		**Date: 9/2/2013**	
Site Number: NA		**Depth:**	53 cmbs
Shovel Test Number:	2	**Diameter:**	70cm x 70cm
Describe Position on Landscape: **On raised remnant trail**		**Screen Size**:	1/8”
Describe Position in Relation to Surface Scatter: NA		**Surface Visibility:** **Ground Coverage:**	100% NA

Level:	Depth (cm)	Cultural Materials:	Features:	Soil Description:		
				Munsell Color	**Soil Texture/ pH**	**Soil Sample Collected**
O Horizon	0-19	None	None	10YR2-2	Thick wet, humus	No
A/B Horizon	20-40	None	None	10YR5-6	Fine silt	No
E Horizon	41-50	None	None	10YR2-2	Wet, thick humus	No
C Horizon	51-53	None	None	10YR5-6	Fine silt with permafrost	No

Comments: Pic # 0039

Phase 1 Archaeological Investigation	trueNORTH sustainable development solutions www.truenorthsds.com	Waypoint No. DE 19

Shovel Test Record

LAT/LONG: N 66.07635 W -162.73989

Project Name: Deering IRR		Excavated By:	RM/AH
Field Number: NA		**Date: 9/2/2013**	
Site Number: NA		**Depth:**	50 cmbs
Shovel Test Number:	3	**Diameter:**	60cm x 60cm
Describe Position on Landscape: **On raised remnant trail**		**Screen Size**:	1/8”
Describe Position in Relation to Surface Scatter: NA		**Surface Visibility:** **Ground Coverage:**	100% NA

Level:	Depth (cm)	Cultural Materials:	Features:	Soil Description:		
				Munsell Color	**Soil Texture/ pH**	**Soil Sample Collected**
O Horizon	0-10	None	None	10YR2-2	Thick wet, humus	No
A/B Horizon	11-18	None	None	10YR3-4	Fine silt	No
B Horizon	19-26	None	None	10YR2-2	Wet, thick humus	No
E Horizon	27-29	None	None	10YR4-1	Grey sand	No
C Horizon	30-50	None	None	10YR5-6 10YR 2-2	Organic stain and fine silt mottled	No

Comments: Pic # 0040

Phase 1 Archaeological Investigation	trueNORTH sustainable development solutions www.truenorthsds.com	Waypoint No. DE 23

Shovel Test Record

LAT/LONG: N 66.07050 W -162.75274

Project Name: Deering IRR		Excavated By:	RM/AH
Field Number: NA		**Date: 9/2/2013**	
Site Number: NA		**Depth:**	56 cmbs
Shovel Test Number:	4	**Diameter:**	50cm x 50cm
Describe Position on Landscape: **On low lying ridge facing river**		**Screen Size**:	1/8”
Describe Position in Relation to Surface Scatter: NA		**Surface Visibility:** **Ground Coverage:**	100% NA

Level:	Depth (cm)	Cultural Materials:	Features:	Soil Description:		
				Munsell Color	Soil Texture/ pH	Soil Sample Collected
O Horizon	0-18	None	None	10YR2-2	Thick wet, humus	No
A/B Horizon	19-25	None	None	10YR5-6	Fine silt	No
E Horizon	26-37	None	None	10YR2-2	Wet, thick humus	No
C Horizon		None	None	10YR5-6	Fine silt with permafrost	No

Comments: Pic # 0046

Phase 1 Archaeological Investigation	trueNORTH sustainable development solutions www.truenorthsds.com	Waypoint No. DE 24

Shovel Test Record

LAT/LONG: N 66.07071 W -162.75173

Project Name: Deering IRR		Excavated By:	RM/AH
Field Number: NA		**Date: 9/2/2013**	
Site Number: NA		**Depth:**	53 cmbs
Shovel Test Number:	5	**Diameter:**	50cm x 50cm
Describe Position on Landscape: **On low lying ridge facing river**		**Screen Size**:	1/8”
Describe Position in Relation to Surface Scatter: NA		**Surface Visibility:** **Ground Coverage:**	100% NA

Level:	Depth (cm)	Cultural Materials:	Features:	Soil Description:		
				Munsell Color	**Soil Texture/ pH**	**Soil Sample Collected**
O Horizon	0-10	None	None	10YR2-2	Thick wet, humus	No
A/B Horizon	11-34	None	None	10YR5-6	Fine silt	No
E Horizon	35-53	None	None	10YR2-2	Wet, thick humus with permafrost	No

Comments: Pic # 0047

Phase 1 Archaeological Investigation		Waypoint No. DE 25

Shovel Test Record

LAT/LONG: N 66.0769, W -162.75037

Project Name: Deering IRR		Excavated By:	RM/AH
Field Number: NA		**Date: 9/2/2013**	
Site Number: NA		**Depth:**	63 cmbs
Shovel Test Number:	6	**Diameter:**	54cm x 54cm
Describe Position on Landscape: **On low lying ridge facing river**		**Screen Size**:	1/8”
Describe Position in Relation to Surface Scatter: NA		**Surface Visibility:** **Ground Coverage:**	100% NA

Level:	Depth (cm)	Cultural Materials:	Features:	Soil Description:		
				Munsell Color	**Soil Texture/ pH**	**Soil Sample Collected**
O Horizon	0-12	None	None	10YR2-2	Thick wet, humus	No
A/B Horizon	13-53	None	None	10YR5-6	Fine silt	No
E Horizon	53-63	None	None	10YR1-1	Partially frozen with organic material and non-cultural charcoal over permafrost	No

Comments: Pic # 0048

Phase 1 Archaeological Investigation	trueNORTH sustainable development solutions www.truenorthsds.com	Waypoint No. DE 25

Shovel Test Record

LAT/LONG: N 66.07065 W -162.75040

Project Name: Deering IRR		Excavated By:	RM/AH
Field Number: NA		**Date: 9/2/2013**	
Site Number: NA		**Depth:**	63 cmbs
Shovel Test Number:	7	**Diameter:**	50cm x 50cm
Describe Position on Landscape: **On low lying ridge facing river**		**Screen Size**:	1/8”
Describe Position in Relation to Surface Scatter: NA		**Surface Visibility:** **Ground Coverage:**	100% NA

Level:	Depth (cm)	Cultural Materials:	Features:	Soil Description:		
				Munsell Color	Soil Texture/ pH	Soil Sample Collected
O Horizon	0-15	None	None	10YR2-2	Thick wet, humus	No
A/B Horizon	16-34	None	None	10YR5-6	Fine silt	No
E Horizon	35-63	None	None	10YR1-1	Partially frozen with organic material and non-cultural charcoal over permafrost	No

Comments: Pic # 0049