

# **St. Michael Airport**

## **ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT**

**ST. MICHAEL, ALASKA  
DOT&PF PROJECT NO. 62652**

**January 2008**



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

**FINDING OF NO SIGNIFICANT IMPACT**

**for**

**SAINT MICHAEL AIRPORT IMPROVEMENT PROJECT**

**ENVIRONMENTAL ASSESSMENT**

**PROJECT NO. 62652**

**SAINT MICHAEL, ALASKA**

**PURPOSE AND NEED (Section 1.0):**

**Purpose:** The purpose of this proposed project is to meet safety and capacity guidelines and recommendations set forth by the FAA, by widening the runway safety area (RSA), taxiway safety area (TSA), and taxiway. Furthermore, this project seeks to rehabilitate the airport facility and repair damaged and cracked runway, taxiway, and apron surfaces.

**Need:** Current deficiencies at the Saint Michael Airport in Saint Michael, Alaska include the following:

- The RSA width does not meet current FAA standards.
- The taxiway and TSA widths do not meet current FAA standards.
- There is insufficient apron space for current and future operations.
- The aviation support area is congested.
- The RSA side slopes have been damaged by permafrost degradation and do not meet FAA standards.
- The existing lighting system, installed in 1996, has been damaged due to differential settlement within the embankment and will need to be moved if the RSA is widened.
- The current alignment and width of the airport access road is insufficient for emergency vehicles. The road has both longitudinal and transverse cracks and its sharp corner has sustained significant erosion.
- There are no precision approach path indicator (PAPI) or runway end identifier light (REIL) pads.
- A high amount of dust is generated during operational periods.
- Water is ponding around the edges of the runway embankment.

## **PROPOSED ACTION (Section 2.0):**

The Saint Michael Airport Improvement Project consists of the following:

- Widening the RSA from 120 to 150 feet.
- Widening the taxiway from 35 to 50 feet and extending the TSA width from 90 to 118 feet.
- Expanding the apron to 162,000 square feet.
- Expanding the aviation support area to 67,500 square feet.
- Flattening the RSA slopes from 2:1 to 4:1.
- Replacing the existing lighting system.
- Realigning and widening the airport access road to 30 feet, as well as repairing the embankment.
- Constructing PAPI and REIL pads.
- Applying a dust palliative.
- Improving drainage around the runway.

## **REASONABLE ALTERNATIVES (Section 3.0):**

The Proposed Action and the No-Build Alternative were evaluated in the Environmental Assessment (EA) for the Saint Michael Airport Improvement Project.

### **No Build Alternative**

Under the No Build Alternative:

- The RSA, TSA, and taxiway would be non-compliant with FAA standards.
- The aviation support area and apron would continue to be congested.
- Operational surfaces and side slopes would not be repaired and would continue deteriorate. Continued deterioration could result in an unusable runway.
- The damaged lighting system would not be replaced.
- The airport access road would continue to deteriorate, possibly creating hazards for all airport traffic including emergency vehicles.
- REIL and PAPI pads would not be installed.
- Heavy dust would continue to be generated during airport operations.
- No drainage improvements would be made.

**ASSESSMENT:**

Based on the EA analysis, the Proposed Action would not have significant adverse impacts on any impact category (Section 4.0). Below is a summary table of the environmental consequences discussed in the EA.

**Environmental Consequences**

<b>Environmental Element</b>	<b>Description of Impact</b>	<b>Applicable Page Number in EA</b>
Noise	No Significant Impact-possible short term noise increase during construction	39
Compatible Land Use	No change from existing land use	34
Socioeconomic Impacts	Beneficial affects due to improved infrastructure	40
Air Quality	Temporary short-term impact Long-term improvement due to resurfacing operational surfaces and applying a dust palliative	30
Water Quality	Long-term improvement by reducing erosion – short-term degradation due to temporary construction impacts	40
Section 4(f)	None	11
Historic, Archeological, and Cultural Resources	No Effect	38
Fish	No Significant Impacts; minor impacts during construction	34
Wildlife	Minor long-term impacts from up to 25 acres of habitat loss - Minor short term impacts during construction	35
Plants	Minor impact due to habitat loss	36
Endangered and Threatened Species	No Anticipated Impacts	36
Wetlands	Up to 25 acres of wetlands filled	42
Floodplains	No Significant Impacts	37
Coastal Zone Management Program	No Significant Impacts	33
Coastal Barriers	None	11
Wild and Scenic Rivers	None	11
Farmlands	None	11
Light Emissions	No Significant Impacts	39
Energy Supply and Natural Resources	No Significant Impacts	39
Solid Waste	No Significant Impacts	37
Hazardous Waste and Materials	No Significant Impacts	37
Construction Impacts	Temporary, minor, negative impacts	43

The proposed project, to improve the Saint Michael airport, is consistent with community planning efforts (pages 14 and 45).

## COORDINATION (APPENDIX A):

### Agency

A scoping letter was sent to resource agencies on April 18, 2005. Follow up telephone calls and e-mails were sent to those who did not respond to ensure that the project information had been received. A summary of scoping comments received from the agencies is provided on page 53, Section 7.0.

Draft permit applications are included in Appendix D.

### Public

A public meeting was held in Saint Michael on December 7, 2004. Public comments are summarized on page 55, Section 8.0.

## PUBLIC REVIEW OF EA:

Notice of availability (NOA) of the EA for public review was provided to interested parties identified during the scoping process via mail and e-mail on December 11, 2007 (Appendix B-58 through B-68). A NOA was posted on the State of Alaska Website on December 18, 2007 and appeared in the Anchorage Daily News on December 20, 2007, (Appendix B-69 and B-71). No comments were received during the public review period.

## MITIGATION MEASURES:

Mitigation measures and Environmental Commitments, described below, will be followed, as well as any future stipulations and conditions associated with the permits (draft applications are in Appendix D).

### Mitigation Measures and Environmental Commitments

Concern	Mitigation Measure or Environmental Commitment	Applicable Page Numbers in EA
Water Quality Impacts	<ul style="list-style-type: none"><li>Seed and fertilize all disturbed areas</li><li>Use clean (uncontaminated) sand and gravel for all fills</li><li>Develop and implement a Storm Water Pollution Prevention Plan</li><li>Follow BMPs for Construction Erosion and Sediment Control</li></ul>	30, 49
Wetland Impacts	<ul style="list-style-type: none"><li>Integrated Avoidance and Minimization Procedures</li><li>Compensate for unavoidable wetlands impact by depositing approximately \$12,500 into mitigation fund, as specified in Memorandum of Agreement between the FAA, USACE, DOT&amp;PF, USFWS, and the ADF&amp;G</li></ul>	41, 49
Material Site Development Impacts	<ul style="list-style-type: none"><li>Follow material site development plan (Appendix C)</li><li>Minimize environmental footprint</li><li>Stockpile material within boundaries of site</li><li>Maintain 50-foot vegetative buffer between pit and creeks</li><li>Grade pit floor to allow drainage (prevent ponding)</li><li>Do not excavate below water table</li><li>Bench heights not to exceed 25 feet in height</li><li>Stockpile unused (waste) material at edge of site; dispose of in existing excavation area</li><li>Reclaim slope with salvaged overburden and grade to 1.5 to 1 or less</li><li>Cover with organic overburden if available; seed and fertilize</li></ul>	39, 50, Appendix C

Concern	Mitigation Measure or Environmental Commitment	Applicable Page Numbers in EA
Construction Impacts	<ul style="list-style-type: none"> <li>• Use dust control measures during construction</li> <li>• Prepare and use traffic safety plan</li> <li>• Revegetate erodible slopes and all disturbed areas</li> <li>• Service and fuel equipment a minimum of 100 feet (30 meters) from any drainage channel or active water body</li> <li>• Keep on-site sorbent materials to contain and clean up any petroleum spill</li> </ul>	43, 49, 50
Historical, Architectural, Archeological and Cultural Resources	<ul style="list-style-type: none"> <li>• Stop work immediately if cultural remains are encountered</li> <li>• Follow federal regulations pertaining to discovery (36 CFR Part 800) and contact: <ul style="list-style-type: none"> <li>• Contact Advisory Council on Historical Preservation</li> <li>• Contact FAA Airports Division</li> <li>• Contact SHPO</li> <li>• Contact local native organizations or tribal councils</li> </ul> </li> </ul>	38, 50
Birds	<ul style="list-style-type: none"> <li>• Contractor will walk extent of project area before construction and contact USFWS if Arctic peregrine falcon nest found in project area</li> <li>• Clear vegetation before May 5 or after July 25 to avoid direct taking of nesting migratory birds</li> </ul>	36, 50
Hazardous Waste or Contamination	<ul style="list-style-type: none"> <li>• Report discovery of unexpected hazardous waste or contamination to resident engineer, who will report to DEC</li> <li>• Dispose hazardous waste or contaminants according to a DEC-approved plan</li> <li>• Contractor will submit and follow a Hazardous Materials Control Plan</li> </ul>	37, 50

**FEDERAL FINDING AND APPROVAL:**

I have carefully and thoroughly considered the facts contained in the attached EA. Based on that information, I find the proposed Federal Action is consistent with existing national environmental policies and objectives of Section 101(a) of the National Environmental Policy Act of 1969 (NEPA). I also find the proposed Federal Action will not significantly affect the quality of the human environment or include any condition requiring any consultation pursuant to section 102(2) (C) of NEPA. As a result, FAA will not prepare an EIS for this action.

APPROVED: 

DATE: 3/10/08

**ENVIRONMENTAL ASSESSMENT  
AND  
FINDING OF NO SIGNIFICANT IMPACT**

**SAINT MICHAEL AIRPORT  
SAINT MICHAEL, ALASKA**

**DOT&PF Project No. 62652**

**Proposed Action: Federal funding for airport improvements  
through the Airport Improvement Project.**

**Prepared for:**

United States Department of Transportation  
Federal Aviation Administration  
222 West 7th Avenue  
Anchorage, Alaska 99513-7587

**Prepared by:**

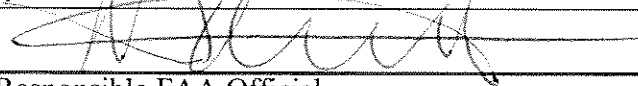
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**Prepared on behalf of the Sponsor:**

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

February 2008

**This Environmental Assessment becomes a Federal document when evaluated, signed,  
and dated by the responsible Federal Aviation Administration (FAA) official.**

	<u>2/26/2008</u>
Responsible FAA Official	Date

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Appendix F.....	Wetlands Avoidance and Minimization Checklist
Appendix G.....	Phase I Environmental Site Assessment
Appendix H.....	Airport Layout Plan
Appendix I.....	United States Army Corps of Engineers (USACE) Jurisdictional Determination

## LIST OF ACRONYMS

AASP	Alaska Aviation System Plan
ACMP	Alaska Coastal Management Program
ADF&G	Alaska Department of Fish and Game
ALP	Airport Layout Plan
ARC	Airport Reference Code
ASA	aviation support area
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMPs	best management practices
CFR	Code of Federal Regulations
CRSA	Coastal Resource Service Area
DCCED	State of Alaska Department of Commerce, Community and Economic Development
DEC	State of Alaska Department of Environmental Conservation
DMLW	Division of Mining, Land, and Water
DNR	State of Alaska Department of Natural Resources
DOT&PF	State of Alaska Department of Transportation and Public Facilities
DOWL	DOWL Engineers
EA	Environmental Assessment
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
MIRL	medium intensity runway lighting
MOA	Memorandum of Agreement
MSL	mean sea level
NPDES	National Pollution Discharge Elimination System
NTSB	National Transportation Safety Board
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
OFA	object free area
OHMP	Office of Habitat Management and Permitting
OPMP	Office of Project Management and Permitting
PAPI	precision approach path indicator
REIL	runway end identifier light
RPZ	runway protection zone
RSA	runway safety area
SHPO	State Historic Preservation Office/Officer
SREB	snow removal equipment building
SWPPP	Storm Water Pollution Prevention Plan
TSA	taxiway safety area
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
YKD	Yukon-Kuskokwim Delta

## DEFINITIONS

Airport Layout Plan (ALP): The plan of an airport showing the layout of existing and proposed airport facilities.

Airport Reference Code (ARC): A coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. Example: Airports expected to accommodate single-engine airplanes normally fall into ARC B-I. Airports serving larger general aviation and commuter-type airplanes are usually ARC B-II or C-II.

### Federal Aviation Administration (FAA) ARC Groups

Approach Speed		Wingspan	
Type	Speed in Knots	Type	Wingspan in Feet
A	Less than 91	I	Up to 49
B	91-120	II	49-78
C	121-140	III	79-117
D	141-165	IV	118-170
E	166 or more	V	171-213
		VI	214-262

Alaska Aviation System Plan (AASP): The State of Alaska’s aviation plan developed in the mid 1980s for the purpose of providing guidelines for developing, operating, and maintaining the Alaska Aviation System. The plan was developed by the State of Alaska Department of Transportation and Public Facilities (DOT&PF) in accordance with Federal Aviation Administration (FAA) guidelines for “State Airport System Plans,” and in response to a 1980 National Transportation Safety Board (NTSB) special study, “Air Taxi Safety in Alaska.” That study indicated that accident rates among air taxi operators in Alaska are significantly higher than the rest of the United States. The NTSB identified several contributing factors and recommended that the State prepare an aviation system plan in addition to taking other direct actions to improve airport facilities. The AASP was revised in 1996 (TRA-BV Airport Consulting, 1996).

Essential Fish Habitat: Defined in the Magnuson-Stevens Act as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” § 3(10), 16 U.S.C. 1802(10).

Object-Free Area (OFA): An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft maneuvering purposes.

Operation: A landing or takeoff by an aircraft.

Segmented Circle: A basic marking device used to aid pilots in locating airports, and which provides a central location for such indicators and signal devices as may be required.

Runway: A defined rectangular surface on an airport prepared or suitable for the landing or takeoff of airplanes.

Runway Length: The extent of a runway based on Advisory Circular 150/5325 and airplane flight manuals or computer program “Airport Design (for Microcomputers) Version 4.1.”

Runway Protection Zone (RPZ): An area off the runway end to enhance the protection of people and property on the ground.

Runway Safety Area (RSA): A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

Taxiway: A defined path established for the taxiing of aircraft from one part of an airport to another.

Taxiway Safety Area (TSA): A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

## **1.0 PURPOSE AND NEED**

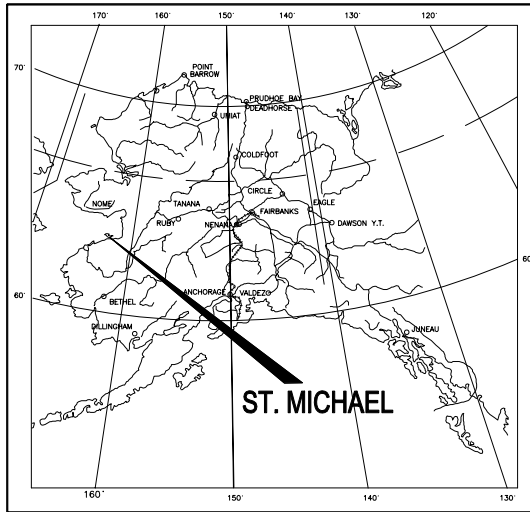
The DOT&PF, in cooperation with the FAA, is proposing to improve and rehabilitate the Saint Michael Airport in Saint Michael, Alaska (Figure 1, Figure 2). Federal funding for the proposed action is through the Airport Improvement Program.

The runway safety area, taxiway safety area, and taxiway widths at Saint Michael do not currently meet FAA standards (Table 1). Furthermore, the runway, taxiway, and apron surfaces are damaged and cracked, mostly due to permafrost degradation.

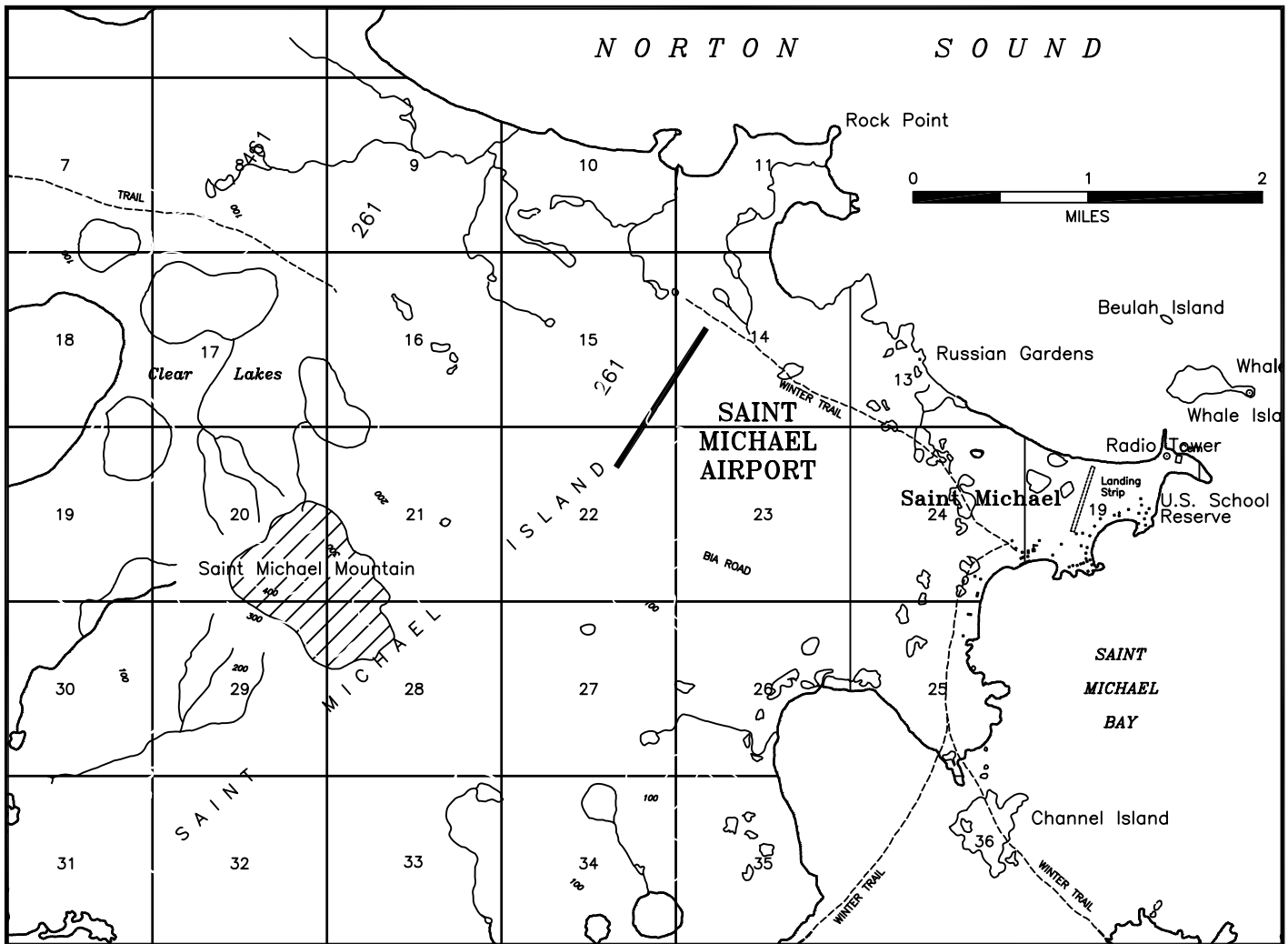
The purpose of the proposed project is to meet safety and capacity guidelines and recommendations set forth by the FAA and in the AASP. The proposed improvements (tentatively scheduled to begin in 2008) will also improve the safety of the airport area.

The recommended design standard for the Saint Michael Airport is ARC B-II, with B-III standards on the taxiway. Table 1 shows proposed improvements at the Saint Michael Airport and, where applicable, the FAA standards.

Detailed information on these proposed improvements and airport background information can be found in Appendix A.



**LOCATION MAP  
NTS**



Vicinity Map

T23S R18W SEC 14,15,22,23  
KATEEL RIVER MERIDIAN, ALASKA  
USGS QUAD ST. MICHAEL (B-1 & C-1)



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

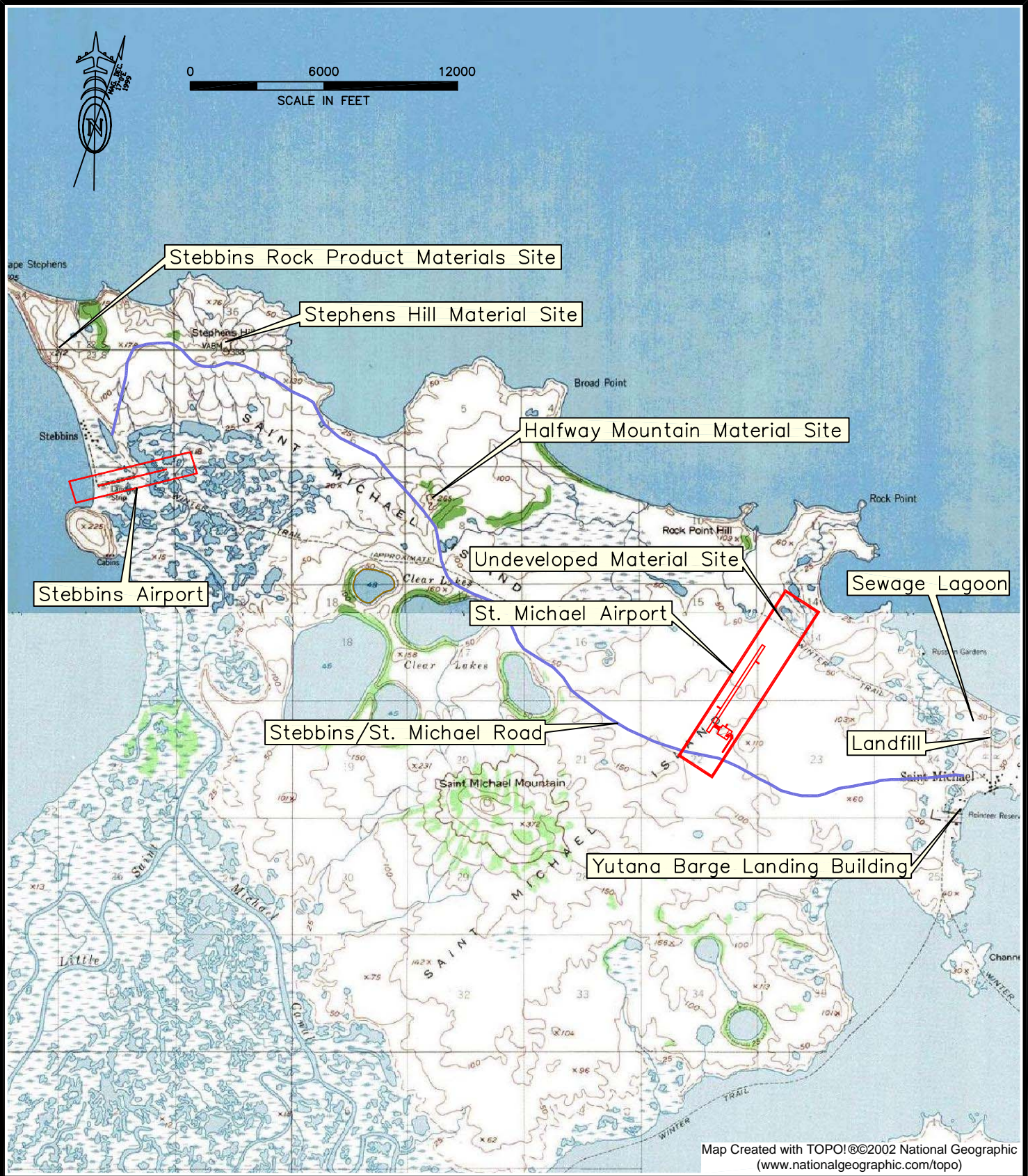
PROJ No. 62652  
SAINT MICHAEL AIRPORT

St. Michael, Alaska

DATE: 08/16/2007

FIGURE 1





Map Created with TOPO! ©2002 National Geographic  
(www.nationalgeographic.com/topo)

Area Map

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T23S R18W SEC 14,15,22,23  
KATEEL RIVER MERIDIAN, ALASKA  
USGS QUAD ST. MICHAEL (B-1 & C-1)



**STATE OF ALASKA**  
**DEPARTMENT OF TRANSPORTATION**  
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PROJ No. 62652  
SAINT MICHAEL AIRPORT

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St. Michael, Alaska

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DATE: 08/16/2007 | FIGURE 2



**Table 1: Saint Michael Airport Federal Aviation Administration Standards and Identified Deficiencies**

<b>Component</b>	<b>Identified Need or FAA Standard</b>	<b>Existing Condition</b>	<b>Corrective Action</b>
<b>Runway (B-II)</b>			
Width	75 feet	75 feet	None
Length	Varies	4,000 feet	None
RSA <sup>1</sup> Width	150 feet	120 feet	150 feet
RSA Length	300 feet	300 feet	None
RSA Slope	4:1	2:1	4:1
<b>Taxiway (B-III)</b>			
Width	50 feet	35 feet	50 feet
Length	None	400 feet	None
TSA <sup>2</sup> Width	118 feet	79 feet	118 feet
<b>Apron and Aviation Support Area (ASA)</b>			
Apron Width	None	300 feet	450 feet
Apron Length	None	350 feet	360 feet
ASA Width	None	300 feet	450 feet
ASA Length	None	150 feet	150 feet
<b>Lighting</b>			
MIRL <sup>3</sup>	Need to replace	Wiring exposed and outdated	Replace
PAPI <sup>4</sup>	None	None	Install
REIL <sup>5</sup>	None	None	Install
<b>Airport Surfaces</b>			
Runway, taxiway, and apron surfaces	Need to repair and improve	Cracked and damaged	Repair and resurface, apply dust palliative
Edges of Runway Embankment	Need to improve drainage	Ponded areas	Improve Drainage
<b>Airport Access Road</b>			
Airport Access Road	Need to improve for traffic safety	Cracked, damaged, and corner too tight for ambulance	Realign, widen <sup>6</sup>

<sup>1</sup> RSA- Runway Safety Area; area around runway designed to reduce risk of damage to plane if it deviates off runway

<sup>2</sup> TSA - Taxiway Safety Area; surface along taxiway designed to reduce risk of damage to plane if deviates off taxiway

<sup>3</sup> MIRL - Medium Intensity Runway Lighting; mark the edges of the runway

<sup>4</sup> PAPI - Precision Approach Path Indicator; lights used to ensure correct glide path

<sup>5</sup> REIL - Runway End Identifier Lights; strobe-light lights used to define end of runway

<sup>6</sup> Road will be widened from 20 to 30 feet across.

## **2.0 ALTERNATIVES**

This chapter describes the alternatives that are under consideration for this project, and based upon the information and analysis presented in Chapters 3 and 4, provides a basis for comparison in terms of their environmental impacts and their achievement of objectives.

### **2.1 Development of Alternatives**

#### **2.1.1 History and Development Process of Alternatives**

The Saint Michael Airport was relocated to its current location in 1996. Since the project was completed, the runway embankment has experienced differential settlement due to permafrost degradation beneath the embankment. Settlement has caused large longitudinal and transverse cracks in the runway and RSAs, as well as the taxiway, TSA, apron, and access road (Appendix A). Settlement has also caused damage to the airport lighting.

In 2004, DOT&PF held a public meeting in Saint Michael to discuss the airport and its problems. The community commented on the poor condition of the airport access road, the need for a longer runway due to increased volumes of materials and supplies currently being flown in, and the need for an expanded apron (Appendix B-52).

#### **2.1.2 Airfield Alternatives Considered but Dismissed**

Extending the runway to 5,000 feet was an alternative considered, but dismissed due to impact to surrounding wetlands, cost, and lack of large aircraft to justify the expansion.

Reorienting the apron was considered, but dismissed. Since the airport is surrounded on all sides by wetlands, expanding the apron in any direction will have equal impact on the wetlands. The proposed action widens the apron from the existing apron footprint.

Retaining side slopes instead of widening them was not considered as an alternative, as it would not meet the 4:1 slope recommended by the FAA. Shallower side slopes improve stability, provide safer runway conditions, and may reduce permafrost degradation.

## **2.2 Proposed Action**

### **2.2.1 Description of Action**

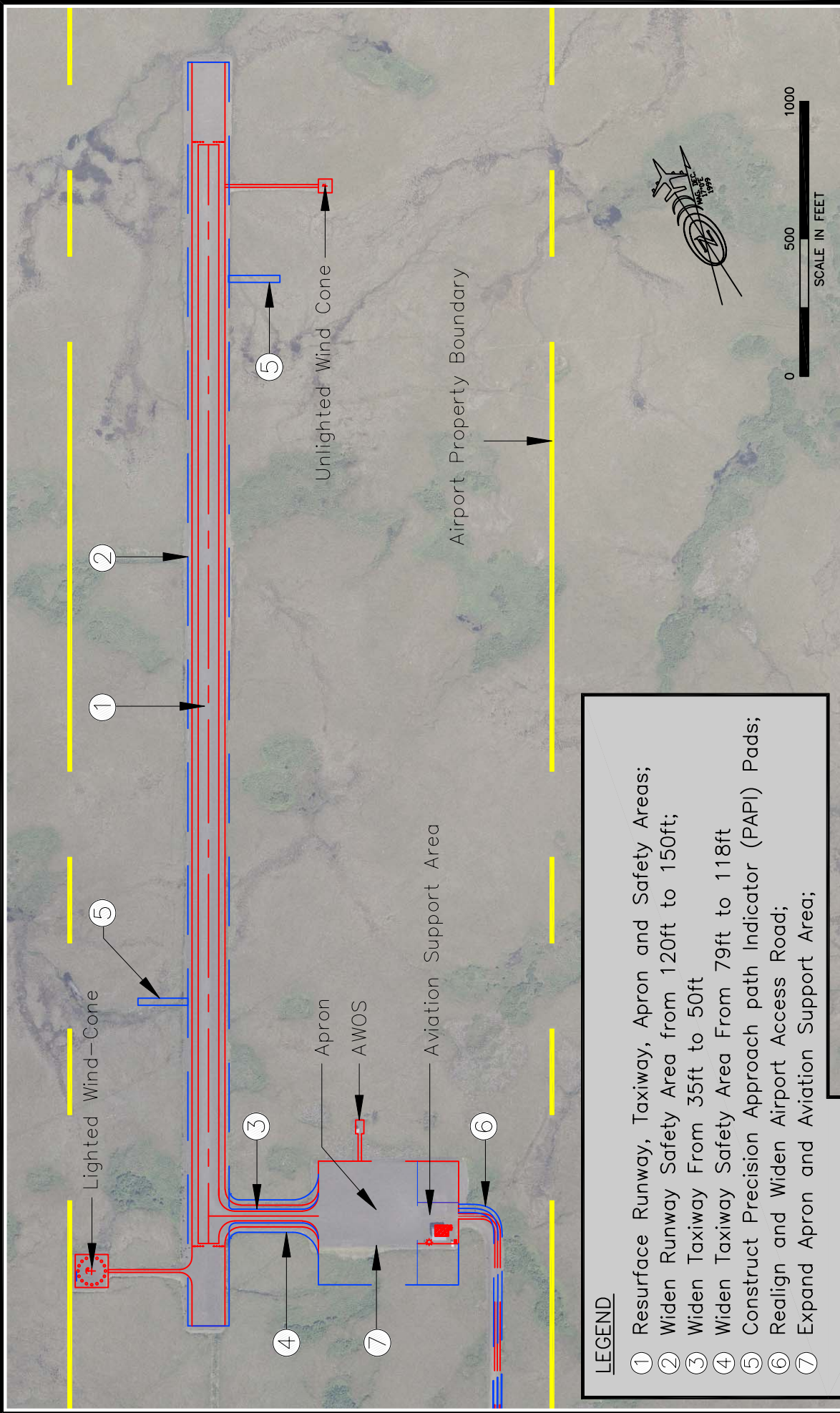
The proposed action (Figure 3) includes:

- Widening the RSA from 120 to 150 feet.
- Widening the taxiway from 35 to 50 feet and extending the TSA width from 79 to 118 feet.
- Expanding the apron to 162,000 square feet.
- Expanding the ASA to 67,500 square feet.
- Flattening the RSA slopes from 2:1 to 4:1.
- Replacing the existing lighting system.
- Realigning and widening the airport access road to 30 feet, as well as repairing the embankment.
- Constructing PAPI and REIL pads.
- Applying a dust palliative.
- Improving drainage around the runway.

Material for the airport rehabilitation project would be obtained from a local existing material site and transported via an existing haul route (Figure 2). Three developed material sites and one potential material site exist in the vicinity of Saint Michael and were evaluated, but only one (Halfway Mountain material site) is expected to meet the need for this project. For more information, see Section 3.9 Natural Resources and Energy Supply.

### **2.2.2 Summary of Environmental Consequences**

The following summarizes the environmental consequences that would result from the proposed action. They are discussed in more detail in Chapter 4, Environmental Consequences.



**LEGEND**

- ① Resurface Runway, Taxiway, Apron and Safety Areas;
- ② Widen Runway Safety Area from 120ft to 150ft;
- ③ Widen Taxiway From 35ft to 50ft
- ④ Widen Taxiway Safety Area From 79ft to 118ft
- ⑤ Construct Precision Approach path Indicator (PAPI) Pads;
- ⑥ Realign and Widen Airport Access Road;
- ⑦ Expand Apron and Aviation Support Area;

- Existing
- Proposed
- Airport Property Boundary



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

PROJ No. 62652  
SAINT MICHAEL AIRPORT

St. Michael, Alaska

DATE: 08/16/2007      FIGURE 3

**Proposed Action**

T23S R18W SEC 14, 15, 22, 23  
KATEEL RIVER MERIDIAN, ALASKA  
USGS QUAD ST. MICHAEL (B-1 & C-1)

- Approximately 24.5 acres of fill in palustrine wetlands would be impacted for the improvements to the airport. For a discussion on wetland functions and values in the project area, refer to Section 3.13 (see Figure 4).
- The dust palliative would reduce loss of fine grain surfacing materials, and improve air quality.
- Temporary air and water quality impacts would result during construction.
- The proposed material site for this project is Halfway Mountain. This is a previously developed material site, no removal of overburden or expansion of material site proposed; therefore, no wetlands will be impacted in or around the material site (see Mining and Reclamation Plan, Appendix C).

2.2.3 Permits Required

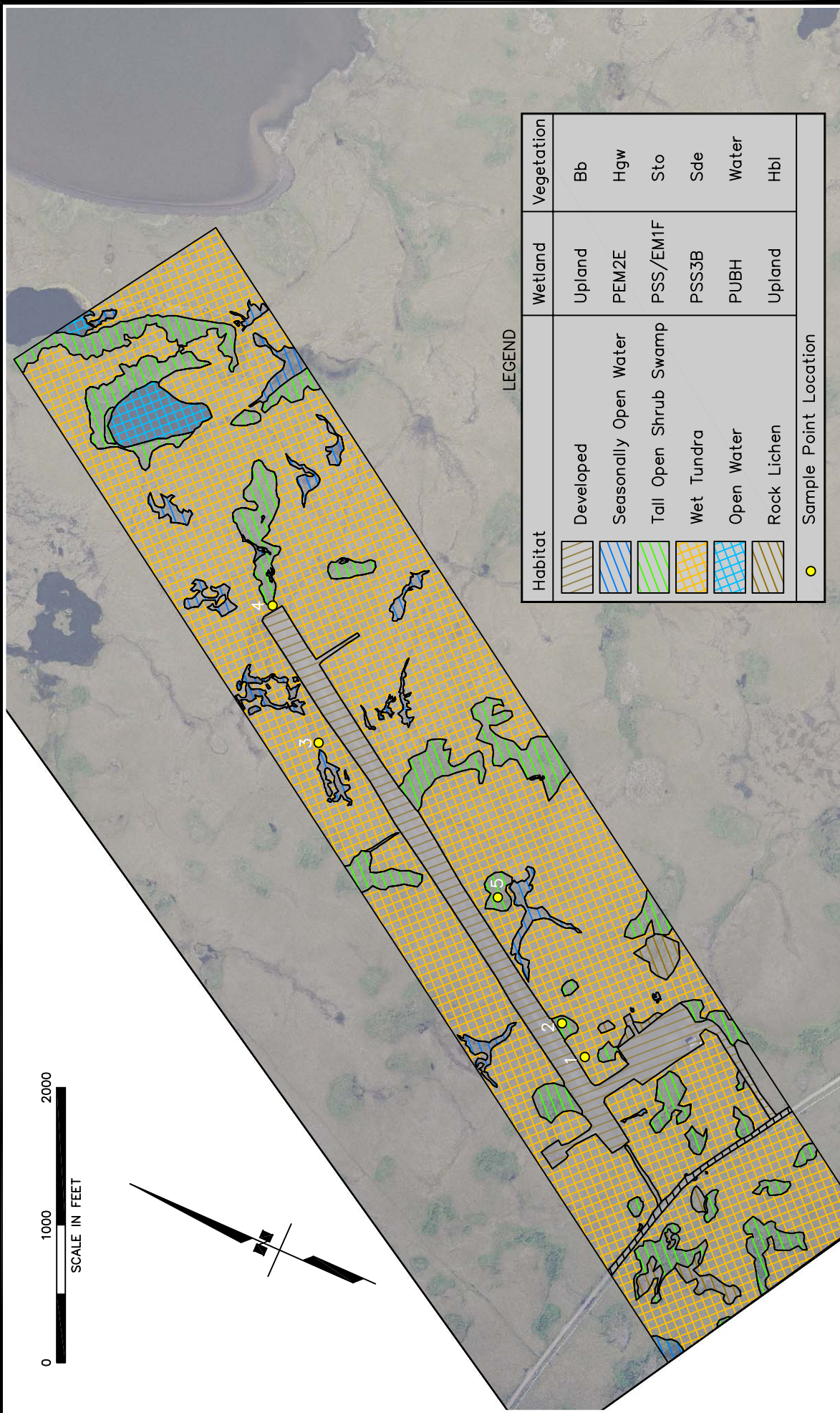
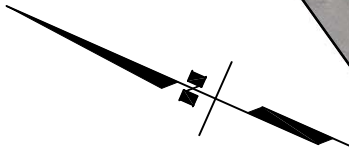
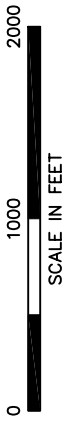
Table 2 indicates permits that are required for the construction of the proposed action in order to comply with federal, state, and local regulations. Draft permit applications are located in Appendix D.

**Table 2: Required Permits and/or Clearances**

<b>Type</b>	<b>Regulatory Agencies</b>
Section 404 Permit for Wetlands Fill	United States Army Corps of Engineers (USACE)
National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities, effective January 21, 2005	United States Environmental Protection Agency (USEPA)
Section 401 Water Quality Certification	State of Alaska Department of Environmental Conservation (DEC)
Material Sale Agreement and approval of Mining and Reclamation Plan	State of Alaska Department of Natural Resources (DNR), Division of Mining, Land, and Water (DMLW)
Alaska Coastal Management Program (ACMP) Consistency Determination	DNR-Office of Project Management and Permitting (OPMP)

A Section 404 Permit for wetlands fill will be obtained by the USACE prior to any work within wetlands and the project will comply with all the general and regional conditions associated with this permit.





LEGEND

Habitat	Wetland	Vegetation
Developed	Upland	Bb
Seasonally Open Water	PEM2E	Hgw
Tall Open Shrub Swamp	PSS/EM1F	Sto
Wet Tundra	PSS3B	Sde
Open Water	PUBH	Water
Rock Lichen	Upland	Hbl
Sample Point Location		



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

PROJ No. 62652  
SAINT MICHAEL AIRPORT  
TITLE 3

St. Michael, Alaska

DATE: 08/16/2007

FIGURE 4

Habitat, Wetland, and Vegetation  
in the Study Area

T23S R18W SEC 14, 15, 22, 23  
KATEEL RIVER MERIDIAN, ALASKA  
USGS QUAD ST. MICHAEL (B-1 & C-1)

The airport improvements would result in over one acre of ground disturbance, and therefore compliance with the USEPA NPDES General Permit for Construction would be required. A Storm Water Pollution Prevention Plan (SWPPP) would be developed and implemented, and the DOT&PF best management practices (BMPs) for Construction Erosion and Sediment Control (2003) would be followed. A Section 401 water quality certification would also be obtained from DEC as part of the permitting for this project.

A material Sale Agreement and approval of the Mining and Reclamation Plan will be obtained.

Finally, a Coastal Management Program Consistency Determination will be obtained from DNR-OPMP, to ensure that the proposed activities are consistent with the enforceable policies of the ACMP.

### **2.3 No-Action Alternative**

The no-action alternative provides baseline information on the existing conditions of the Saint Michael Airport, and is used for comparison of probable impacts during the development and evaluation of alternatives.

#### **2.3.1 Description of Action**

The airport facilities would remain as they currently exist and would continue to fail to meet FAA and Alaska Aviation System Plan Update safety guidelines. No airport improvements would occur, such as widening, slope flattening, building of PAPI and REIL pads, and replacing airport lighting.

#### **2.3.2 Summary of Environmental Consequences**

The no-action alternative would result in increased safety risks and potential damage to aircraft in the event of an accident. Potential social consequences of unreliable air transportation could limit access to better healthcare, prohibit medical evacuation, and access to and from adjacent communities. In addition, the runway embankment would continue to degrade and develop serious damages.

#### **2.3.3 Permits Required**

No permits would be required for the no-action alternative.

### **3.0 AFFECTED ENVIRONMENT**

This chapter provides a description of the existing environmental, social, and economic setting for the area that would be affected by the proposed Saint Michael Airport Improvement Project. FAA Order 1050.1E requires that impacts of a proposed federal airport project be evaluated for specific resource categories. As an issues-based Environmental Assessment (EA), only resource categories that were identified as issues of concern are evaluated in detail. Chapters 3 and 4 are organized by resource category in the same order to improve the readability of this document.

The following resource categories were not identified within the proposed project's affected area, and are not evaluated in this document:

- Farmland

There is no prime or unique farmland nor farmland of state or local importance in the vicinity of the project (United States Department of Agriculture Natural Resources Conservation Service, no date).

- United States Department of Transportation Act, Section 4(f)

There are no 4(f) properties within the project area, and the proposed action would not affect any adjacent 4(f) properties.

- Wild and Scenic Rivers

There are no designated state or federal wild and scenic rivers in the vicinity of the project area (National Wild and Scenic Rivers System, 2007).

- Coastal Barrier Resources Act

A review of the United States Fish and Wildlife Service (USFWS) website indicated that there is no *Coastal Barrier Resources Act* (Chafee, 1982) land located within Alaska.

#### **3.1 Air Quality**

According to Alaska Administrative Code (AAC) 18 AAC 50.15, all geographic areas in the state are designated by the federal administrator as “attainment,” “non-attainment,” or “unclassifiable.” An area is designated “attainment” for a particular contaminant if the air



quality meets the ambient standard for that contaminant. If air quality exceeds the standard, that area is designated “non-attainment.” If there is insufficient information to classify an area as attainment or non-attainment, the area is designated “unclassifiable.”

To establish standards for the prevention of significant deterioration of air quality, the state is categorized into three classes. Each class has a specific baseline ambient concentration of certain air contaminants and maximum allowable increases for the ambient concentration.

The three classes are:

- Class I areas: Denali National Park, Bering Sea National Wildlife Refuge (NWR), Simeonof NWR, and Tuxedni NWR.
- Class II areas: All other geographic areas in Alaska not classified as Class I or Class III.
- Class III: No areas in Alaska.

There is insufficient information on Saint Michael’s air quality, and therefore Saint Michael is designated as unclassifiable. Saint Michael is within a Class II area, which has less stringent air quality requirements than Class I areas. Although there is a lack of monitoring data in this area, DEC staff indicated that there are concerns regarding particulate matter 10 micron (PM10) levels in many villages during summer months, primarily due to the gravel roads and runways. However, since Saint Michaels has not been designated as a non-attainment area for air quality, no conformity analysis is required.

### **3.2 Coastal Resources**

The community of Saint Michael is located within the Bering Straits Coastal Resource Service Area (CRSA), as administered under Alaska Statue, Title 46, Chapter 40, ACMP. This project would be subject to a consistency review to ensure compliance with the ACMP statewide policies as well as Bering Straits CRSA District policies (see Appendix D).

DNR-OPMP would conduct a formal Coastal Consistency Review per the ACMP to ensure that all ACMP statewide standards and policies are met. The ACMP sets forth standards, goals, and policies that guide the Coastal Consistency Review. The proposed action appears to be consistent with the standards, goals, and policies of the ACMP. Additionally, the

proposed action would also be reviewed by the Bering Straits Coastal Coordinator to ensure that the project is consistent with the Bering Straits CRSA Coastal Management Plan. This plan allows the CRSA the ability to protect coastal resources and uses that are important to the people of the region, including subsistence uses and resources and wildlife habitat. The following are enforceable policies that directly relate to the proposed action:

- Coastal Development

Development priority should be given to water-dependent and/or related used of the coastal zone. The ACMP also states that placement of structures and the discharge of dredged or fill material into coastal water must, at a minimum comply with Title 33 of the United States Code of Federal Regulations (CFR) (33 CFR Vol. 42 of the Federal Register, pp. 37133-4).

- Habitat Protection

Projects that require dredging, clearing, or construction in productive habitats shall be designed to keep these activities to the minimum area necessary for the project.

Wetlands and tidflats shall be managed to assure adequate water flow, nutrients and oxygen levels, and to avoid adverse changes in natural drainage patterns, the destruction of important or essential habitats, and the discharge of toxic substances.

- Historic, Prehistoric, and Archaeological

Efforts would be made to identify areas of the coast that are important to the study, understanding, or illustration of natural, state, or local history or prehistory. Prior to development activities, historical and prehistoric sites identifies and listed on the Alaska Heritage Resource Inventory would be reviewed.

- Dredging and Filling

Projects that require dredging or filling in streams, rivers, lakes, wetlands, or saltwater areas including tidflats, will be located, designed, constructed, and maintained in a manner so as to avoid significant impacts to important fish and wildlife habitat, limit areas of direct disturbance to as small an area as possible, and maintain circulation and drainage patterns.

- Mitigation

All land and water-use activities shall be planned and conducted to mitigate potential adverse impacts on fish and wildlife populations and habitats.

- Transportation and Utilities

Transportation and utility routes and facilities must be sited to be compatible with district programs, inland from beaches and shorelines unless the route or facility is water-dependent or no feasible and prudent inland alternative exists to meet the public need for the route or facility.

- Mining and Mineral Processing

Mining and mineral processing in the coastal areas must be regulated, designed, and conducted to be compatible with the standards for other resources, adjacent uses and activities, statewide and national needs, and district programs. In addition, sand and gravel may be extracted from coastal waters, intertidal areas, barrier islands, and spits when there is no feasible and prudent alternative to coastal extraction, which will meet the public need for the sand or gravel.

- Subsistence

Subsistence use will be given the highest priority use for areas designated for subsistence use. Additionally, applicants shall accommodate access to coastal resources used for subsistence unless reasonable alternative access is provided that is acceptable to the district.

### **3.3 Compatible Land Use**

Saint Michael is classified as a second-class city, and is not in an area organized as a borough. Regarding land use considerations, the Community Development Plan identifies potential funding and community investments to implement development goals, and the Community Development Plan lists the airport as a community asset. Part of the City's responses to the scoping letter stated that they wanted to widen the access road to the airport and fix the 90-degree turn onto the apron. They explained that they have a top-heavy

ambulance that has trouble negotiating that curve. Additionally, the inside portion of the 90-degree turn is sloughing off.

DOT&PF currently owns the approximately 355-acre airport property. The airport is located approximately 2.2 miles from the community of Saint Michael, and no conflicting land uses such as sewage lagoons, landfills, or other bird attractants are situated within two miles of the airport. The area surrounding the airport is vacant and either patented or interim conveyed to the Saint Michael Native Corporation or the Bering Straits Native Corporation as a result of the Alaska Native Claims Settlement Act.

### **3.4 Fish, Wildlife, and Plants**

The region is described as Beringia Lowland Tundra, and the subregion of Saint Michael is within the Yukon-Kuskokwim Delta (YKD) (Conservation Biology Institute, 2007). Most of the area is below 100 feet mean sea level (MSL) and consists of a broad, flat delta created by the Yukon and Kuskokwim Rivers and their tributaries. The Saint Michael Airport is located approximately 10 miles from the northeastern point of the YKD Refuge.

This lake-dotted, marshy plain has many low hills of basalt and volcanic cinder cones and craters. Elevation is less than 400 feet MSL and poor drainage dominates the lower elevations, and wetlands cover over half of the lowland surface. This system of wetlands, lakes, streams, and tidal flats interspersed with tundra and sedge flats make the delta exceptional habitat for waterfowl, shorebirds, and furbearers.

#### **3.4.1 Fish**

The area immediately surrounding the airport does not contain any fish-bearing waterbodies. However, the following is a general description of fish habitat in the vicinity of Saint Michael.

Common resident fish of lakes and streams of the YKD include northern pike, blackfish, stickleback, sheefish, least cisco, and several species of whitefish. The lakes in this region are generally shallow and cannot support large fish populations in the winter; therefore, the majority of resident fish migrate from lake to river systems in the fall or early winter (U.S. Department of the Interior, 1973).

A search of the *Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes* (Alaska Department of Fish and Game [ADF&G], 1995) found that Saint Michael Canal (Anadromous Stream #333-70-10820) and Little Saint Michael Canal (333-70-10820-2011) host chinook, pink salmon, chum salmon, sheefish, and whitefish. Spawning and rearing habitat are not identified in the Saint Michael Canal. The Saint Michael and Little Saint Michael Canals are approximately three miles outside the project area, and therefore no impacts to anadromous fish are anticipated.

### 3.4.2 Wildlife

Situated approximately 10 miles northeast of the wildlife-rich YKD, Saint Michael is surrounded by an area that supports one of the largest aggregations of waterbirds and shorebirds known to the world (USFWS, no date). Diverse populations of terrestrial mammals exist in the nearby Píkmíktalik and Andreafsky River drainages and in the area of Apoon Pass. Smaller mammals inhabiting lowland swamps and lakes are also found in the vicinity of Saint Michael. The area surrounding the airport could provide foraging habitat for moose or cover for small mammals; however, no animals or scat were observed during the October 2004 wetlands delineation.

#### 3.4.2.1 *Mammals*

Prior to 1950, moose were rarely seen in the YKD; however, since that time, moose have migrated into the area using the Yukon and Kuskokwim Rivers as corridors. An estimated 500 moose inhabit the lower Yukon drainage and mapped moose distribution for the YKD NWR indicates that moose incidentally occupy the Saint Michael area (USFWS, 1988).

Historically, a large caribou population roamed along the Bering Sea coast from Bristol Bay to the Norton Sound. The population peaked by the 1860s and was declining by the 1870s. During the peak, caribou ranged over the Yukon-Kuskokwim lowlands (Skoog, 1968, as cited in USFWS, 1988). Today caribou are found in low numbers within the refuge.

Reindeer (domesticated caribou) were first driven from the Seward Peninsula to the YKD in 1901. Over the next 14 years, eight more herds were introduced to the YKD. The reindeer population grew to 68,000, but the population eventually collapsed for a number of reasons. The remaining reindeer herd is currently owned by the Village of Stebbins (located on Saint

Michael Island eight miles from the village of Saint Michael) (Wolfe and Deane, 1984, as cited in USFWS, 1988). The current population of reindeer is approximately 1,000 animals (personal conversation, Johnny Lockwood [July 6, 2006]). Monitors ensure that the reindeer stay away from public places such as the airport. However, the herd wanders onto the runway occasionally (personal conversation, Martin Andrews, 2004) (refer to Appendix B-45).

Brown bear and black bear are known to occur in the YKD NWR; however, the surrounding environment of Saint Michael provides marginal habitat for bears. Therefore, bears are unlikely to be found in the Saint Michael vicinity.

Furbearers such as mink, river otter, red fox, and arctic fox are common in the Saint Michael area. Mink are found generally in lowland swamps around lakes below 100 feet MSL, and river otters are abundant along lowland streams and rivers.

A complete list of mammal species found in the region is located in Appendix E.

#### *3.4.2.2 Birds*

The YKD supports the highest densities of nesting tundra swans, most of the world's population of emperor swans, and one-half of the total population of black brant (Conservation Biology Institute, 2003). The YKD include many high-quality habitats, which is reflected in the diversity and abundance of bird species. More than 150 species of birds dominate the landscape of the Yukon Flats during spring and summer. The thousands of ponds and lakes distributed across the Yukon Flats provide breeding habitat for a variety of waterbirds including ducks, loons, geese, swans, and shorebirds. The YKD is considered the largest and most important shorebird habitat in the Pacific Flyway (USFWS, 1988). Additionally, all of North America's cackling Canada geese are produced in these coastal lowlands that are the only known breeding grounds of the very rare Bristle-thighed curlew. Bristle-thighed curlews nest in two relative small, distinct region in Alaska; the Andreafsky Wilderness near the north YKD, and on the Central Seward Peninsula. Both of these areas are several miles outside the proposed project. Both spectacled eiders and Steller's eiders, which are listed under the Threatened and Endangered Species Act, migrate through the area (see Section 3.4.4 for more information). Bristle-thighed curlews are on the USFWS list of

species of special concern based on relative abundance, threats on non-breeding grounds, and breeding distribution.

Cranes, ducks, geese, raven, sea gulls, ptarmigan, and hawks have been observed in the vicinity of the airport (personal communication, Martin Andrews).

To avoid the direct taking of nesting migratory birds, the contract would require vegetation clearing to occur before May 5, or after July 25 for the YKD, per USFWS 2005 recommended time periods for avoiding vegetation clearing in Alaska to protect migratory birds.

A complete list of bird species found in the project vicinity appears in Appendix E.

### 3.4.3 Plants

The YKD lies within the northern boreal subzone of southwestern Alaska, consisting of subarctic tundra underlain by permafrost. Wet tundra communities consisting primarily of sedge mats, moss, and low growing shrubs characterize the area (Conservation Biology Institute, 2003). The vegetation communities of the YKD have adapted to permafrost, periodic flooding by tidal or riverine waters, and wind. This periodic flooding favors graminoid dominated plant complexes (USFWS, 1988). The coastal plain west and south of Saint Michael is scarcely above sea level and is frequently inundated by tides from the Bering Sea.

Saint Michael is non-forested and the terrain surrounding Saint Michael is a mixture of flat, marshy lowlands and gently rolling uplands, rising to an elevation of 400 feet MSL. As the elevation increases on the island, freshwater marshes transition into an ericaceous tundra community, and tall open shrub swamp.

In October 2004, DOWL Engineers (DOWL) performed a vegetation classification of the Saint Michael Airport property and potential material sites identified by DOT&PF (Figure 4). Four terrestrial habitats were grouped and classified using level III of the Alaska Vegetation Classification system (Viereck et al., 1992). A complete copy of the Saint Michael Wetlands Delineation and Wetlands Functional Assessment, Vegetation Classification, and Wildlife Habitat Evaluation can be obtained at DOWL (907-562-2000) or at Northern Region

DOT&PF (907-451-5129). Additionally, the Halfway Mountain material site was delineated as part of the wetlands delineation and functional assessment for the Stebbins Airport performed by DOWL in September 2004.

#### Dwarf Ericaceous Shrub (Wet Tundra)

The Viereck classification for the wet tundra habitat is dwarf ericaceous shrub (Sde). The dwarf ericaceous shrub habitat comprised approximately 75.23 percent (262.79 acres) of the airport study area and consisted of many co-dominants such as bog cranberry, dwarf blueberry, northern Labrador tea, and crowberry. Mosses are intermixed with the ericaceous shrubs and fruticose lichens are also very abundant.

#### Tall Open Shrub (Tall Open Shrub Swamp)

The Viereck classification for the tall open shrub swamp is tall open shrub (Sto). The tall open shrub habitat comprises approximately 11.17 percent (39.02 acres) of the airport study area and is dominated by bluejoint grass and spirea. This plant community was observed on the edge of the runway.

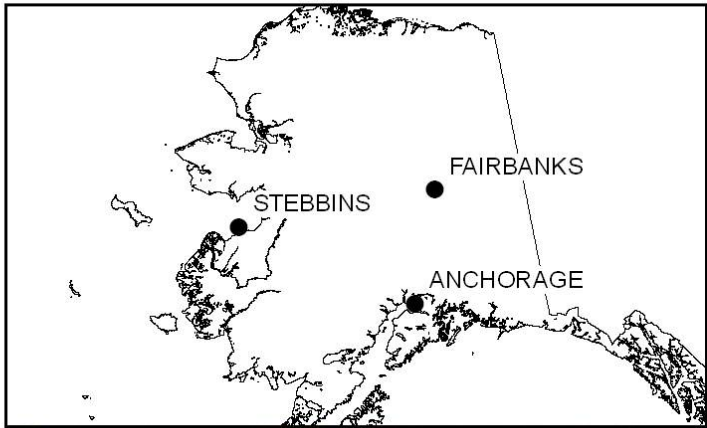
#### Herbaceous Bryophyte Lichen (Rock Lichen)

The Viereck classification for the rock lichen habitat is herbaceous bryophyte lichen (Hbl). The bryophyte lichen herbaceous habitat comprises 1.2 percent of the airport study area. This community grows on large rocky, soil-less areas.

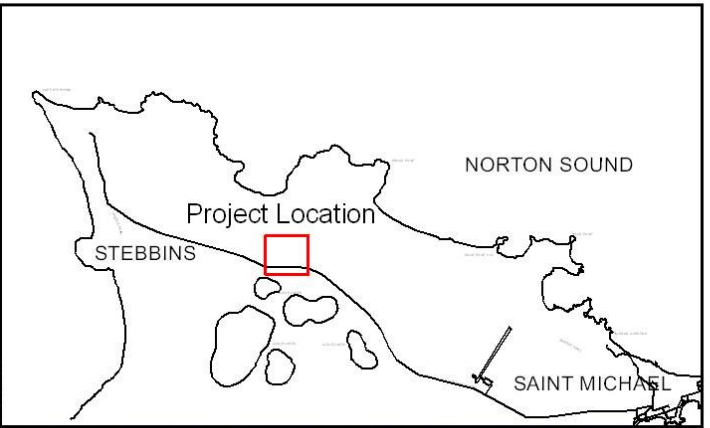
#### Tall Closed Shrub (Closed Shrub - Upland)

The Viereck classification for the Closed Shrub habitat is Shrub Tall Closed (Stc). This habitat was mostly encountered on the edge of the material sites. This habitat comprises approximately 47.2 percent (55.7 acres) of the Halfway Mountain material site assessment area (Figure 5). Dominant species in this habitat consist of green alder and bluejoint grass with spots of fireweed.








Location Map



Vicinity Map



LEGEND

	Wetland	Habitat	Vegetation
	UPLAND	Developed / Disturbed	D/D
	PSS1/3/4B	Wet Tundra	Sde
	UPLAND	Closed Shrub	Stc

Halfway Mountain Material Site  
Figure 5: Wetland Delineation

DOT & PF Project No. 62652

Scale: 1:24000  
April 10, 2006



W.O. D58530T  
Filename :Figure\_1.mxd

#### 3.4.4 Threatened and Endangered Species of Flora and Fauna

The USFWS previously listed two bird species that exist within the refuge on the threatened and endangered species list: the American peregrine falcon, and a subspecies of the arctic peregrine falcon. Both have been de-listed due to population recovery. However, the arctic peregrine falcon is listed as a species of concern by the ADF&G.

Both spectacled eiders and Steller's eiders, listed by the USFWS as "threatened," likely migrate through the region of Saint Michael. Consultation with the USFWS indicated that the village of Saint Michael is in close proximity to an important molting area for the spectacled eider. Saint Michael is adjacent to the Norton Sound molting area, which is the principal molting and staging area for females nesting, and for juveniles raised on the YKD. Nesting on the YKD is restricted to the vegetated intertidal zone (areas dominated by low wet-sedge and grass marshes with numerous small shallow water bodies). The airport is located approximately two miles inland. The habitat around the airport is dominated by wet tundra and tall open shrub swamp. (Federal Register, 2001).

### **3.5 Floodplains**

The 100-year floodplain is defined as those areas adjoining inland and coastal waters, which would be inundated by a 100-year flood. The USACE Floodplain Management database shows that Saint Michael does not participate in the National Flood Insurance Program and therefore is not located within a regulated floodplain (USACE, 2000).

The airport is located two miles from the town site of Saint Michael, and approximately two miles from the coast at 106 feet above MSL. No current floodplain mapping information exists for the Saint Michael Airport property.

The USACE Floodplain Management database shows that the community and airport have never flooded. The airport is above the 100-year flood elevation per the USACE survey. See Section 4.5 for more detailed information.

### **3.6 Hazardous Materials, Pollution Prevention, and Solid Waste**

A search of the DEC contaminated sites, spills and LUST databases found there have been two contamination releases in the vicinity of Saint Michael; however, both of these are over two miles from the airport, and are therefore outside the project area.

A Phase I Environmental Site Assessment (ESA) was conducted in October 2004, by DOWL, to determine the likelihood of contamination on the subject property. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property, with the exception of oil stains on the floor of the snow removal equipment building (SREB). These stains, however, are reportedly from an oil change and would have involved no more than a gallon of oil.

Based on the information obtained during the Phase I ESA, it was concluded that past activities on and adjacent to the proposed project area have posed no significant potential for environmental impairment of the property. The report is located in Appendix G.

The local landfill is located approximately two and a half miles outside the project area.

### **3.7 Historical, Architectural, Archaeological, and Cultural Resources**

A review of the Alaska Heritage Resource Survey indicates that there are several sites in the vicinity of Saint Michael; however, none are within the area of potential effect.

An Archeological Survey was conducted in 1992 for the original Saint Michael Airport construction project. No cultural resources were observed during the pedestrian survey or any of the subsurface tests. Nearly all of the project area is within featureless tundra terrain possessing very low probability for the presence of cultural resources. No additional archeological investigations were recommended for this site (Appendix B-42).

Additionally, on May 13, 2005, DOT&PF met with the State Historic Preservation Officer (SHPO), and it was determined that a negative archeological survey was conducted at Halfway Mountain material site and was cleared by the Bureau of Indian Affairs (BIA) (see Appendix B-40).

### **3.8 Light Emissions and Visual Impacts**

The existing airport is equipped with MIRL; however, since the airport is located approximately 2.2 miles east of the village of Saint Michael, light emissions from the airport do not affect residential areas. No public concerns of light emissions or visual impacts were raised at the public meeting.

### **3.9 Natural Resources and Energy Supply**

The Alaska Village Electric Cooperative, Inc., has a power plant in Saint Michael and provides electricity to the community as a diesel source. The existing airport, which has a SREB, receives approximately 45 kilowatts of electricity annually. The existing airport is also equipped with pilot-activated MIRL.

Three developed and one potential material sites exist in the vicinity of the Saint Michael Airport (Figure 2).

The three developed material sites include:

- Stebbins Rock Product Material Site
- Stephens Hill Material Site
- Halfway Mountain Material Site

The material sites are located to the northwest of the village of Saint Michael. DOT&PF evaluated these material sites and is proposing to use the Halfway Mountain Material Site. The other material sites were eliminated from consideration for not having enough material quantity to meet the needs of the project improvements or because the material did not meet surfacing specifications. A material site and reclamation plan has been developed as part of the EA (Appendix C).

### **3.10 Noise**

According to FAA order 5050.4a, a noise analysis is not necessary since forecasted operations are well below the threshold of 90,000 annual adjusted propeller operations, or 700 annual adjusted jet operations. Existing operations are well below this threshold.

### **3.11 Socioeconomic, Environmental Justice, and Children’s Environmental Health and Safety Risks**

During the gold rush of 1897, the “Fort Saint Michael,” a United States military post established in 1897, was a major gateway to the interior via the Yukon River. Saint Michael was also a popular trading post for Eskimos to trade their goods for Western supplies.

Centralization of many Yup’iks from the surrounding villages intensified after the measles epidemic of 1900 and the influenza epidemic of 1918. Saint Michael’s population is largely Yup’ik Eskimo today, and many residents are descendants of Russian traders. Seal, beluga whale, moose, caribou, fish, and berries are important staples. The sale or importation of alcohol is banned in Saint Michael (State of Alaska Department of Commerce, Community, and Economic Development [DCCED], 2007).

Saint Michael’s economy is based on subsistence food harvests supplemented by part-time wage earning. Most cash positions are found in city government, the IRA council and Village Corporation, schools, and local stores. Six residents hold commercial fishing permits, primarily for the herring fishery.

The 2000 United States census of the Village of Saint Michael indicates 268 residents, of which 22.9 percent of the population was below poverty and 91.2 percent of the population was Alaska Native or part Alaska Native. Approximately 53 percent of the population is male, and the median age is 22 years old. The per capita income is \$10,692.

### **3.12 Water Quality**

The Saint Michael Airport is surrounded by wet tundra with few streams or water bodies. According to the DEC, there are no listed Section 303(d) water quality limited water bodies within the Saint Michael Airport property (DEC, 2003). Water derived from Clear Lake, is treated and stored in a 1.2 million-gallon tank and piped to residents of Saint Michael. A new sanitation system is under construction to provide water delivery holding tanks for homes, a piped gravity and vacuum sewer system with septic treatment, and household plumbing. Forty-four homes are served by the new system, and another 37 houses are being connected. The unserved residents currently haul treated water and use honey buckets.

### **3.13 Wetlands**

A wetlands delineation and functional assessment for the airport was performed by DOWL in October 2004. Additionally, Halfway Mountain Material Site was delineated as part of the wetlands delineation and functional assessment for the Stebbins Airport, performed by DOWL in September 2004. The USACE approved DOWL's June 2005 Wetlands Delineation Report on June 26, 2006 (Appendix I). The wetlands report was approved concurrently with a permit modification for airport maintenance.

Field delineation of wetlands was performed according to the three-parameter approach using vegetative, pedologic, and hydrologic characteristics, as described in the USACE *Wetlands Delineation Manual* (USACE, 1987). A complete copy of the Saint Michael Wetlands Delineation and Wetlands Functional Assessment, Vegetation Classification, and Wildlife Habitat Evaluation can be obtained at the offices of Northern Region DOT&PF. The wetlands maps (Figures 4 and 5) and Functions and Values Tables (Tables 3 and 4) are included in this report.

#### **3.13.1 Wetland Types and Functional Assessment**

The project contained two distinct study areas, the Airport Site and the Halfway Mountain Material Site. A total of four National Wetlands Inventory (NWI) wetland classifications were documented in the airport study area and two NWI wetland classifications were documented in the Halfway Mountain Material Site, all of which are Palustrine.

The Palustrine System includes all wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, and lichens that are not influenced by ocean-derived salinity. Wetland types commonly referred to as bogs, muskegs, fens, marshes, and swamps are grouped in the Palustrine System. Lakes and ponds less than 20 acres in size are also a part of the Palustrine System (Cowardin et al., 1979).

##### **3.13.1.1 *Airport Study Area***

Of the 355-acre airport property, the wetlands delineation study area encompasses approximately 349 acres. Wetlands comprise approximately 318 acres (91.1 percent) of the project site, while upland and developed areas comprise 8.9 percent of the study area. A total

of four NWI wetland classifications were documented in the study area (tall open shrub swamp, open water, seasonally open water, and wet tundra). Wet tundra was the most common wetlands type, comprising 75.23 percent of the study area and 82.6 percent of the wetlands area (Figure 4).

**Table 3: Wetlands and Uplands in the Saint Michael Airport Study Area**

<b>Habitat Type</b>	<b>Open Water</b>	<b>Rock Lichen</b>	<b>Developed/ Disturbed</b>	<b>Seasonally Open Water</b>	<b>Tall Open Shrub Swamp</b>	<b>Wet Tundra</b>
Wetlands Type (Cowardin)	PUBH	U	U	PEM2E	PSS/EM1F	PSS3B
Vegetation Type (Viereck)	W	Hbl	D/D	Hgw	Sto	Sde
Percentage of Wetlands Type in Runway Study Area	1.57	1.23	7.65	3.12	11.17	75.23

**Wet Tundra**

The wet tundra habitat comprised 75.23 percent of the airport study area. The NWI classification for wet tundra is PSS3B (Palustrine, Scrub-Shrub, Evergreen, Broad-Leaved). Dwarf ericaceous shrubs dominate the vegetation in this community, including crowberry and Labrador tea. Other plants that are present in this community include yellow willow, cottongrass, lowbush cranberry, and alpine bearberry. Mosses (particularly club mosses) and fruticose lichen also provide substantial cover in this community.

The wet tundra habitat has an overall moderate functional ranking. Permafrost in this environment appears to be intermittent, according to a map of permafrost areas in Alaska. In areas where permafrost is absent, the flood storage capacity is moderate to high and capable of groundwater recharge and discharge. However, areas underlain with permafrost have less flood storage capacity and groundwater recharge/discharge due to the impermeable nature of permafrost.

The dense vegetation of this habitat would reduce velocity of overland flow and therefore provides erosion control. The dense vegetation also provides sediment-trapping capabilities. It is likely the frequency of overland flow in this environment is low; however, these functions would become important during heavy periods of precipitation. These functions also aid in overall water quality of the system by trapping sediment and pollutants before entering nearby ponds.



### **Tall Open Shrub Swamp**

The tall open shrub swamp habitat comprises 11.17 percent of the study area. The NWI classification for open tall scrub is PSS/EM1F (Palustrine Scrub Shrub/Emergent Persistent Semipermanently Flooded). The Alaska Vegetation Classification system classifies this vegetation type as tall open shrub. Vegetation in this community is dominated by bluejoint reedgrass, and spirea.

The open tall shrub swamp environment has an overall high functional ranking. Permafrost in this environment appears to be intermittent, according to a map of permafrost areas in Alaska. This habitat occurs on wet creek banks and in other places that receive seepage or relatively nutrient-rich water. As water flows slowly through the system, sediments and nutrients are gradually absorbed and recycled. Soils may be mineral, a mixture of well-decomposed organic material or sometimes peat.

### **Seasonally Open Water**

The seasonally open water habitat comprises 3.12 percent of the study area. The NWI classification for seasonally open water is PEM2E (Palustrine Emergent Nonpersistent Seasonally Flooded/Saturated). The Alaska Vegetation Classification system classifies this vegetation type as wet herbaceous graminoid.

The seasonally open water environment has an overall high functional ranking. Permafrost in this environment appears to be intermittent, according to a map of permafrost areas in Alaska.

### **Open Water**

The open water habitat comprises 1.57 percent of the study area. The NWI classification for open water is PUBH (Palustrine Unconsolidated Bottom Permanently Flooded). The Alaska Vegetation Classification system classifies this vegetation type as water.

The open water environment has a high functional ranking due to the important role in hydrological and ecological functions. Open water wetlands provide flood attenuation by holding rain or snowmelt and slowly release the water into surrounding environments.



However, due to the lack of vegetation in this environment, this wetlands type does not rank as high for flow regulation and erosion control, sediment, and toxicant retention.

**Rock Lichen**

The lichen habitat comprises 1.2 percent of the study area. The Viereck classification for this vegetation type is upland. The NWI classification for rock lichen is U (Upland). The Alaska Vegetation Classification system classifies this vegetation type as herbaceous bryophyte lichen. No sites were sampled in this habitat type.

*3.13.1.2 Halfway Mountain Material Site*

The Halfway Mountain material site study area encompasses approximately 118 acres. Wetlands comprise approximately 47 acres (39.8 percent) of the project site, while upland and developed areas comprise 60.2 percent of the study area. Wet tundra was documented in the study area and comprised of 39.8 percent of the study area. The NWI classification for wet tundra is PSS1/3/4B (Palustrine, Scrub-Shrub, Evergreen, Broad-Leaved).

**Table 4: Wetlands and Uplands in the Saint Michael Halfway Material Site Study Area**

Habitat Type	Developed/ Disturbed	Wet Tundra	Close Shrub
Wetlands Type (Cowardin)	U	PSS1/3/4B	U
Vegetation Type (Viereck)	D/D	Sde	Stc
Percentage of Wetlands Type in Wetlands and Uplands in the Saint Michael Halfway Material Site Study Area	12.9	39.8	47.2

**Wet Tundra**

The NWI classification for wet tundra (at the material site) is PSS1/3/4B (Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Broad-Leaved Evergreen, Needle-Leaved Evergreen, Saturated). The Viereck classification for this vegetation type is shrub dwarf ericaceous (Sde).

Dwarf ericaceous shrubs dominate vegetation in this community, including small bog cranberry, crowberry, and Labrador tea. Other plants that are present in this community include yellow willow, dwarf birch, cottongrass, bluejoint grass, and alpine bearberry. Mosses (particularly club mosses) and fruticose lichen also provide substantial cover in this community.

The functional assessment of wet tundra at the Halfway Mountain material site is the same as in the airport study area (Section 3.13.1.1).

### **Closed Shrub**

The Viereck classification for the closed shrub habitat is shrub tall closed (Stc). This habitat comprises approximately 47.2 percent (55.7 acres) of the assessment area. Dominant species in this habitat consist of green alder and bluejoint grass with spots of fireweed. This habitat was mostly encountered on the edge of the material sites (Figure 5). In the airport study area, closed shrub upland habitat is located on the slope of the hill southwest of the runway.

The closed shrub habitat has a moderate functional ranking for its hydrological (groundwater recharge/discharge, flow regulation, nutrient removal/retention, sediment retention, and nutrient cycling) and ecological functions (wildlife habitat and food web support). Additionally, this habitat ranks high for erosion control due to its vegetation that would help reduce velocity to overland flow during heavy periods of precipitation.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

This chapter of an EA is the scientific and analytic basis for the comparisons of the alternatives. Environmental effects that would likely result from the implementation of the alternatives presented in Chapter 2 are disclosed in this chapter. The two alternatives evaluated in this EA are the proposed action and the no-action alternative.

Environmental consequences are described in terms of direct, indirect, and cumulative impacts. Direct impacts are those that are caused by the action and occur at the same time and place. Indirect impacts are those that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable. Because the line between direct and indirect impacts is often difficult to draw, the discussion of these impacts is combined. Cumulative impacts are those that result from the incremental impact of the action when added to other past, present, and reasonable future actions (Section 4.15).

### **4.1 Air Quality**

#### Proposed Action Alternative

Temporary, localized air degradation may occur from short-term construction activities during gravel hauling and placement and during operation of heavy equipment. Construction activities would cause minor air quality degradation from increased dust and exhaust from heavy equipment. Due to the minor amount of land to be affected by construction activities (temporary impacts), air quality impacts are expected to be minimal.

Negative long-term air quality impacts would not result from the proposed action. DEC staff has indicated that there are concerns regarding particular matter 10-micron (PM-10) in many villages during summer months, primarily due to gravel roads and runways. By adding dust palliative to the runway, air quality in the community of Saint Michael may improve by reducing dust generated during aircraft operations.

The no-build alternative would allow dust to continue at existing levels.

## 4.2 Coastal Resources

### Proposed Action Alternative

Under this alternative, the DNR-OPMP would conduct a formal Coastal Consistency Review per the ACMP to ensure that all ACMP statewide standards and policies are met. The ACMP sets forth standards, goals, and policies that guide the Coastal Consistency Review. Additionally, the proposed action would also be reviewed by the Bering Straits Coastal Coordinator to ensure that the project is consistent with the Bering Straits CRSA Coastal Management Plan. This plan allows the CRSA the ability to protect coastal resources and uses that are important to the people of the region, including subsistence uses and resources and wildlife habitat. The proposed action appears to be consistent with the standards, goals, and policies of the ACMP and the Bering Straits CRSA Coastal Management Plan. The following are directly applicable standards and enforceable policies that directly relate to the proposed action:

- Coastal Development. Development priority should be given to water-dependent and/or related uses of the coastal zone. The ACMP also states that placement of structures and the discharge of dredged or fill material into coastal waters must, at a minimum, comply with 33 CFR.
  - This standard does not prohibit the proposed action, but would place it at a lower development priority than water-dependent and/or related projects May 2006. However, since this project proposes improvements to an existing facility, a non-coastal alternative is not feasible.
  - The proposed action would require a Section 404 Permit from the USACE. This permit would ensure that the proposed action would follow 33 CFR. Refer to Appendix D for the draft Section 404 Permit application.
- Habitat Protection. Projects that require dredging, clearing, or construction in productive habitats shall be designed to keep these activities to the minimum area necessary for the project. Wetlands and tideflats shall be managed to assure adequate waterflow, nutrients, and oxygen levels and to avoid adverse changes in natural drainage patterns, the destruction of important or essential habitats, and their discharge of toxic substances.

- Refer to sections 4.13 and 5.1.2 for a discussion on wetlands impacts of the proposed action and mitigation.
- Historic, Prehistoric, and Archaeological. Districts and appropriate state agencies shall identify areas of the coast that are important to the study, understanding, or illustration of national, state, or local history or prehistory. Prior to approval of large projects in coastal areas, an applicant must provide the district with an assessment of expected social and cultural impacts.
  - The proposed action includes compliance with Section 106 of the History and Archaeological Preservation Act. Refer to Section 4.8, Historical, Architectural, Archeological, and Cultural Resources for detailed information, as well as sections 4.7 and 4.11, for a discussion on the cultural resources and socioeconomic impacts of the proposed action.
- Dredging and filling. Projects that require dredging or filing in streams, rivers, lakes, wetlands, or saltwater areas including tideflats, will be located, designed, constructed, and maintained in a manner so as to avoid significant impacts to important fish and wildlife habitat, limit areas of direct disturbances to as small an area as possible, and maintain circulation and drainage patterns.
  - DOT&PF has analyzed the project, and determined that there are no practicable alternatives having less impact on wetland, and without other significant adverse environmental consequences. A section 404 permit from the USACE will be secured prior to construction.
- Transportation and Utilities. Transportation and utility routes and facilities must be sited to be compatible with district programs, inland from beaches and shorelines unless the route or facility is water-dependent or no feasible and prudent inland alternative exists to meet the public need for the route or facility.
  - The proposed action is compatible with district programs and is not located adjacent to beaches or shorelines.
- Mining and Mineral Processing. Mining and mineral processing in the coastal areas must be regulated, designed, and conducted to be compatible with the standards for

other resources, adjacent uses and activities, statewide and national needs, and district programs. In addition, sand and gravel may be extracted from coastal waters, intertidal areas, barrier islands, and spits, when there is no feasible and prudent alternative to coastal extraction, which will meet the public need for the sand or gravel.

- The existing potential material sites for the proposed action are compatible with the standards for other resources, adjacent uses and activities, statewide and national needs, and district programs.
- Mitigation. All land and water use activities shall be planned and conducted to mitigate potential adverse impacts on fish and wildlife populations, habitats.
  - See section 5.1.
- Subsistence. Before a potentially conflicting use or activity may be authorized within designated subsistence areas, a study of possible adverse impacts of the proposed potentially conflicting use or activity upon subsistence usage must be conducted and appropriate safeguards to assure subsistence usage must be provided. Subsistence use must be given the highest priority use for areas designated for subsistence use, and shall provide access to coastal resources used for subsistence unless reasonable alternative access is provided that is acceptable to the district.
  - During scoping, neither the Bering Straits Native Corporation nor the Saint Michael Native Corporation has identified impacts from the proposed action to designated subsistence areas.
  - Since the project involves improvements to an existing airport, and material sites, that is not designated as a subsistence use area, the proposed action would not impact subsistence, nor would it prohibit access to subsistence areas.

Based on the above review, this proposed alternative appears consistent with local enforceable policies and statewide standards. A formal review will be conducted during the permitting process.

### No-Action Alternative

The no-action alternative would not involve impacts to the Alaska Coastal Zone. A Coastal Consistency Review would not be required through the ACMP nor the Bering Straits CRSA.

## **4.3 Compatible Land Use**

### Proposed Action Alternative

The airport is located on a 355-acre parcel and is owned by the State of Alaska. This land has been dedicated for airport use only. Since all the improvements are on airport property, no change in land use would occur. As indicated in Chapter 3 the landfill and sewage lagoon are located approximately two and a half miles away from the airport, therefore both are compatible with FAA's recommended separation distance of 10,000 feet.

This alternative will not lead to community disruption; there will be no relocation impacts. There will be no critical habitat alterations to the surrounding areas and wetland impacts will be minimal. Seven percent (24.5 acres) of the airport will be impacted as a result of this project.

### No-Action Alternative

Under the no-action alternative, land would not be acquired by DOT&PF, and no impacts to land use would occur.

## **4.4 Fish, Wildlife and Plants**

### **4.4.1 Fish**

#### Proposed Action Alternative

The ADF&G Catalogue for anadromous fish streams does not list any anadromous water bodies within the project area therefore there will be no impacts to fish. An essential fish habitat assessment is not required. No work below Ordinary High Water is proposed.

#### No-Action Alternative

There would be no effect to fish or fish habitat under the no-action alternative.

#### 4.4.2 Wildlife

##### Proposed Action Alternative

Mammals (both large and small) and birds currently utilizing the project area adjacent to the runway and taxiway would be permanently displaced from that particular location. During construction periods, wildlife may be inhibited from using nearby habitat due to temporary noise disturbances. To avoid direct taking of nesting migratory birds, the contract would require vegetation clearing to occur between May 5 and July 25 for the year, per USFWS 2005 recommended time periods for avoiding vegetation clearing in Alaska to protect migratory birds.

The permanent and temporary impact areas are very small relative to the surrounding large areas of undisturbed habitat. Thus, the proposed action is expected to have a minimal impact on wildlife in the area. Table 5 summarizes the acreage of each habitat type that would be affected by the proposed action.

**Table 5: Affected Acreage by Habitat Type**

<b>Habitat Type</b>	<b>Acreage Filled</b>
Tall Open Shrub Swamp	0.7
Wet Tundra	23.4
Seasonally Open Water	0.03
Open Water	None
Close Shrub (Upland)	None
Developed	None

\* The footprint of the proposed project (and anticipated area of affected wetlands) includes a 30-foot buffer for equipment operational surfaces.

Note: Wet tundra, tall open shrub swamp, and closed shrub are Viereck habitat types. Viereck describes vegetation habitat types so a Viereck vegetation type could not be used to describe open water habitat types. There, the Cowardin naming convention was used for seasonally open water and open water.

##### No-Action Alternative

The no-action alternative would not have an effect on wildlife or wildlife habitat.



#### 4.4.3 Plants (and Terrestrial Habitats)

##### Proposed Action Alternative

Impacts to Plants and Terrestrial Habitats are described under the Wildlife (4.4.2) and Wetlands (4.13) Sections.

##### No-Action Alternative

Under the no-action alternative there would be no impacts to vegetation and terrestrial habitats.

#### 4.4.4 Threatened and Endangered Species and Other Species of Concern

All of the proposed activities (airport reconstruction, material site mining, material transportation) would occur within terrestrial environment, which is outside of spectacled eider critical habitat. The USFWS indicated that the project is not likely to adversely impact listed species. No further Section 7 Consultation is needed. (See USFWS coordination in Appendix B-34).

Arctic peregrine falcons are present in the area. The nearest known nest is three miles from the project area. The Contractor will walk through the project area prior to construction. Should the Contractor observe other nests in the project area, the USFWS would be contacted as an active nest would require protection under the Migratory Bird Treaty Act.

##### No-Action Alternative

There would be no effect to Threatened or Endangered Species under the no-action alternative.

### **4.5 Floodplains**

##### Proposed Action Alternative

Saint Michael does not participate in the National Flood Insurance Program, and there are no floodplain maps for this location. The USACE has determined that the entire town is above the 100-year floodplain (USACE, 2000). However, the USACE has determined the recommended building elevation to be two feet above the first floor of the Yutana Barge Landing building. The elevation of the first floor of the Yutana building is 24.50 feet above MSL; therefore, the recommended building elevation is 26.50 above MSL.

The runway at Saint Michael sits at approximately 106.5 feet above MSL, per the current ALP (approved by FAA in November 2000). The elevation of the Halfway Mountain Material Site is roughly 265 feet above MSL, based on the 1952 Saint Michael C-I topomap. Therefore the project will not lead to encroachment of the base floodplain.

#### **4.6 Hazardous Materials and Solid Waste Impact**

##### Proposed Action Alternative

The Saint Michael Phase I Environmental Site Assessment Report (based on the October 2004 site visit) concluded that there was no evidence of recognized environmental conditions on the airport property, with the exception of oil stains on the dirt floor of the SREB. These stains are reportedly from an oil change and would have involved no more than a gallon of oil. No work is proposed inside or outside the SREB. Outside of the developed areas, the subject property appears to be clean and free of debris, with no signs of negative environmental conditions.

No suspected or confirmed releases of hazardous substances have been documented on the airport property in the federal, state, or local environmental agency lists reviewed for this EA.

Furthermore, the Saint Michael landfill is located approximately two and a half miles outside the project area (Figure 2) and there are no identified solid waste impacts. Any solid waste generated during construction activities would be handled in accordance with the DEC's Solid Waste Program.

Should hazardous waste or contamination be encountered during construction, the contractor will be required to report to the resident Engineer, who would contact the DEC. Once contamination is characterized, it would be disposed of according to a DEC-approved plan.

The work contract will include specific language requiring the contractor to submit a Hazardous Material Control Plan, which would detail their proposed methods for handling and disposing of waste oil and hazardous wastes generated during construction. The plan would also specify the contractor's methods for handling accidental spills of hazardous wastes during construction.

### No-Action Alternative

The No-Action Alternative would not have impacts on hazardous materials or solid waste.

## **4.7 Historic, Architectural, Archaeological, and Cultural Resources**

### Proposed Action Alternative

The DOT&PF, on behalf of the FAA, initiated Section 106 consultation with the SHPO and the Native entities on April 18, 2005, as required by Section 106 of the National Historic Preservation Act (Appendix B-24 and B-29).

As a result, DOWL met with the SHPO on May 13, 2005 (Appendix B-40). During the meeting, it was discussed that, based on a previous survey of the airport area, no additional archeological investigations were recommended by the SHPO for this proposed action (see attached letter dated June 3, 2005, Appendix B-42). Furthermore, it was discussed that negative surveys occurred at Halfway Mountain material site and cleared by the BIA.

The SHPO, in a letter dated June 3, 2005, stated that they did not anticipate any impacts to historic properties (Appendix B-42). The DOT&PF, on behalf of the FAA, also determined that there would be no historic properties affected and distributed findings letters on July 25, 2005, to the SHPO and the Native entities (Appendix B, pages B-27 and B-29).

### No-Action Alternative

There would be no effect to historic, architectural, archaeological, or cultural resources under the no-action Alternative.

## **4.8 Light Emissions and Visual Impacts**

### Proposed Action Alternative

The proposed action would include replacement of the existing MIRL, including new taxiway lighting.

The airport is located 2.2 miles away from the community of Saint Michael, which is a sufficient distance to dissipate light emission impacts. Proposed lighting would not create an annoyance among the residents, since the current runway and segmented circle are already lighted, and a white-green beacon currently exists in the airport.

Furthermore, given the distance of the airport from the community, the proposed airport improvements will not lead to visual impacts.

#### No-Action Alternative

The no-action alternative will not have any light emission impacts.

### **4.9 Natural Resources and Energy Supply**

#### Proposed Action Alternative

The existing runway, taxiway, segmented circle, and beacon are currently lighted. The proposed improvements include changing and replacing the existing runway and taxiway lighting system. It is unlikely that the proposed action would not cause any substantial changes in the energy demand at Saint Michael.

Halfway mountain would serve as the material site for the proposed project improvements (Figure 2). All appropriate natural resource permits will be secured prior to any material extraction.

### **4.10 Noise**

#### Proposed Action Alternative

No substantial increase in aircraft related noise impacts are expected to result from the proposed action. The increase in aviation activity will not exceed the recommended threshold of 90,000 annual adjusted propeller operations or 700 annual adjusted jet operations for a noise analysis. The long-term impacts of the no-action and proposed action are anticipated to be the same. Heavy equipment operations during construction would temporarily increase noise levels; however, this would be short-term in duration.

#### No-Action Alternative

Under the no-action alternative, there would be no temporary noise impacts associated with the construction of the airport improvements.

#### **4.11 Socioeconomic Impacts, Environmental Justice, and Children’s Environmental Health and Safety Risks**

##### Proposed Action Alternative

The proposed upgrades at the Saint Michael Airport are not anticipated to negatively affect any minority of disadvantaged populations in the vicinity of the Saint Michael Airport. Because the majority of the Saint Michael population is Native (91 percent) and under the age of 19 (51 percent), the proposed airport improvements would affect minority and disadvantaged populations in a beneficial and positive manner. The proposed project is not anticipated to create environmental health concerns or safety risks for local children. Rather, it will likely improve air quality and provide safer air transportation to and from the village of Saint Michael. Public sentiment is supportive of the project in order to improve the airport as the sole transportation link for mail, cargo, and passenger travel with other communities.

##### No-Action Alternative

Under the no-action alternative there would continue to be safety issues, which include deterioration of the runway, RSA, taxiway, TSAs, apron, access road embankments, as well as lighting due to differential settlement. Additionally, the RSA and TSA widths would not meet FAA standards. If deficiencies at the airport are not improved, there could be a negative socioeconomic impact because the airport is an important transportation link for mail, cargo, and passenger travel with other communities.

#### **4.12 Water Quality**

##### Proposed Action Alternative

Minor short-term impacts to water quality, due to storm water runoff, may occur during the construction period. These impacts would be minimized through the use of BMPs as described in Section 5.1. Permanent impacts are not anticipated. Furthermore, the proposed action would address the erosion problems associated with the steep slopes, and therefore would result in long-term water quality improvements.

### No-Action Alternative

Under the no-action alternative, the existing slope erosion would not be repaired; therefore, the airport would continue to have minor erosion and sedimentation issues potentially leading to poor water quality over time. However, no major water quality impacts would occur.

## **4.13 Wetlands**

### Proposed Action Alternative

Executive Order 11990, Protection of Wetlands, requires that there be no practicable alternative to the proposed action, and that the projects include all practicable measures to minimize harm to wetlands.

Currently, the side slopes of the airport are too steep causing settlement problems and sedimentation into the adjacent wetlands. There is no other practicable alternative besides widening the side slopes to alleviate this problem. Additionally, the apron needs to be expanded to meet the demands of aviation activity. There is no practicable alternative to expanding the apron. Realigning and widening of the airport access road is a safety improvement and constructing a new road would impact more wetlands.

PAPIs and REILs would be installed as an airport safety feature. PAPIs are vertical glide slope indicators used for vertical descent guidance information during the approach to the runway. REILs are installed to provide rapid and positive identification of the approach end of a runway. Pads need to be constructed for this equipment to be installed by FAA. Since the airport is surrounded by wetlands, there is no other practicable alternative than constructing these pads in wetlands.

The widening of the RSA and TSA will also impact wetlands. Consideration was given to realigning the runway, but this alternative would lead to higher wetland impacts. There are no practicable alternatives to avoiding these impacts.

DOT&PF has analyzed the project, and determined that there are no practicable alternatives having less impact on the wetlands and without other significant adverse environmental consequences, such as building a new airport (which would lead to more environmental impacts). Due to the fact that wetlands surround the airport, there are no avoidance

alternatives. Therefore, minimization of impacts and compensatory mitigation are the primary mitigation measures available to this project.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in waters of the United States, and the proposed action includes all practicable measures to minimize harm to wetlands that may result from the project.

Proposed wetland BMPs for this project are listed below and are also documented in the Wetlands Avoidance and Minimization checklist (Appendix F).

- The runway, taxiway, apron, and access road side slopes would be stabilized to minimize erosion and sedimentation into wetlands areas. Sides slopes will be widened to prevent settlement problems as well as to meet FAA safety guidelines. Currently the slopes are 2:1, and permafrost degradation of the side slopes is causing cracking and erosion.
- Slopes subject to erosion and disturbed surfaces would be re-vegetated to minimize storm water pollution.
- Only clean sand and gravel will be used for fills.
- No material will be stockpiled at the airport. Material will be hauled and dumped at permanent placement locations. A Material Site Reclamation Plan is included as Appendix C. Note that no wetlands would be impacted at the material site; the site has already been cleared of vegetation and material would be removed from this cleared area.

Approximately 23.41 acres of moderately valued wetlands and 0.73 acres of high-valued wetlands would be filled as a result of the proposed action.

The amount of wetland impacts resulting by the proposed action would not adversely affect the wetlands' ability to function and protect the quality of water, sustain the hydrological needs of the area, or affect the maintenance of natural systems.

Table 6 shows the acreage of wetlands habitat types that would be filled at the airport as a result of the Proposed Action (Figure 6).

**Table 6: Wetlands Fill Acreage, by Type**

<b>Wetlands Habitat Type</b>	<b>Acreage Filled</b>
Tall Open Shrub Swamp	0.7
Wet Tundra	23.4
Seasonally Open Water	0.03

\* The footprint of the proposed project (and anticipated area of affected wetlands) includes a 30-foot buffer for equipment operational surfaces.

#### No-Action Alternative

There would be no effect to wetlands under the no-action alternative.

#### **4.14 Construction Impacts**

##### Proposed Action Alternative

Potential adverse impacts during the construction period include the following:

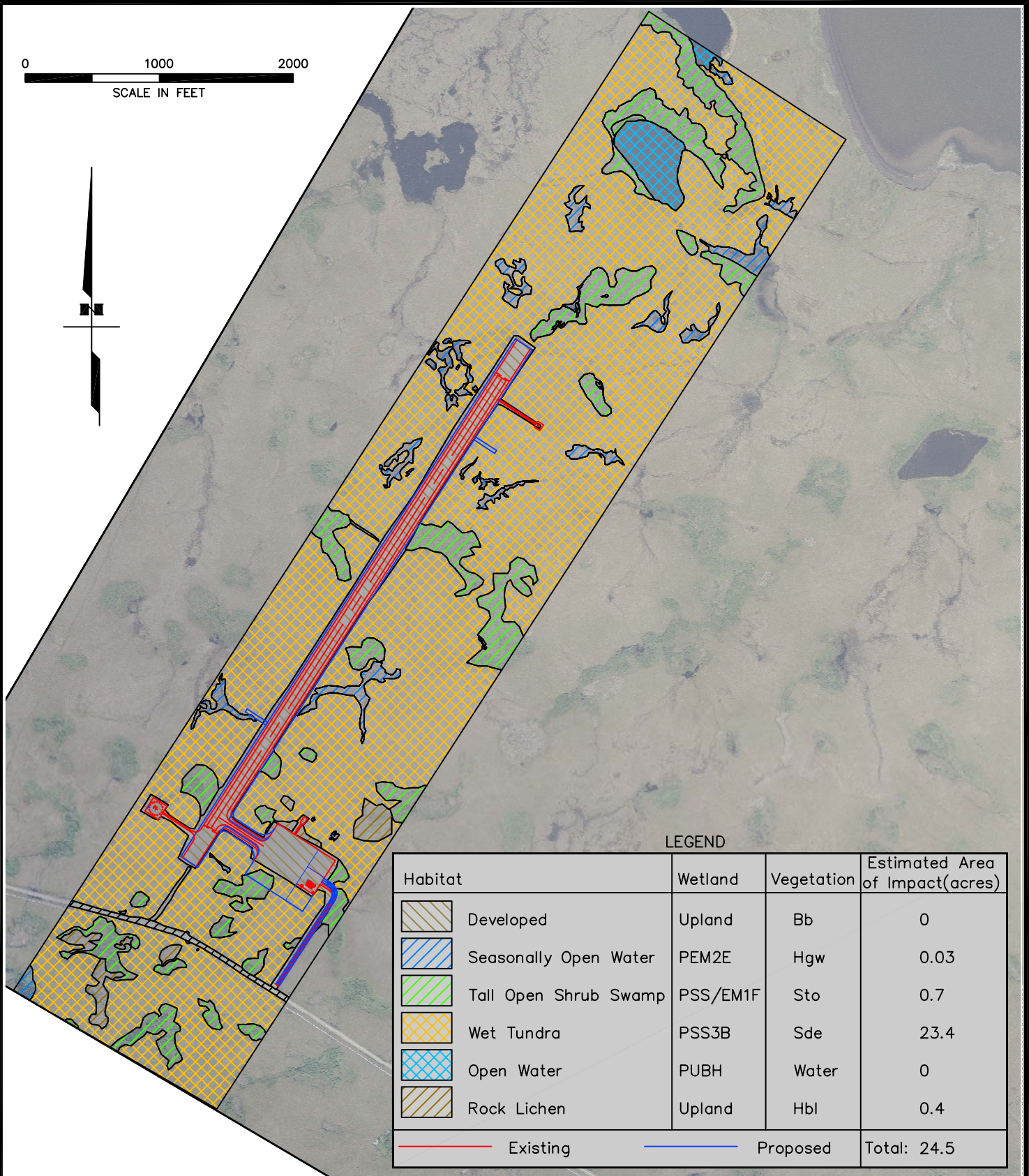
**Air Quality.** The use of fueled construction equipment may result in slight degradations in air quality during the construction period. These effects would be temporary. Dust control measures would be used by the contractor to reduce dust emissions

**Noise Level.** The construction period of the airport improvements may result in a temporary increase in noise from the transportation of heavy equipment. The airport is approximately 2.2 miles from town so the noise impacts should be minimal to the residents of Saint Michael. Halfway Mountain Material Site is approximately 5.5 miles; therefore, noise nuisance from construction should also be minimal to the residents.

**Traffic Concerns.** The use of heavy equipment during construction may affect residents traveling along the Stebbins-Saint Michael road. A traffic safety plan would be developed to minimize any potential conflicts.

**Water Quality.** There may be an increase in sediment-laden storm water runoff into adjacent wetlands associated with the construction period. Implementation of the Erosion and Sediment Control Plan and a SWPPP would reduce impacts to adjacent wetlands.





LEGEND

Habitat	Wetland	Vegetation	Estimated Area of Impact(acres)
Developed	Upland	Bb	0
Seasonally Open Water	PEM2E	Hgw	0.03
Tall Open Shrub Swamp	PSS/EM1F	Sto	0.7
Wet Tundra	PSS3B	Sde	23.4
Open Water	PUBH	Water	0
Rock Lichen	Upland	Hbl	0.4
Existing	Proposed	Total: 24.5	

Habitat, Wetlands, and Vegetation Impacts in the Study Area

T23S R18W SEC 14,15,22,23  
 KATEEL RIVER MERIDIAN, ALASKA  
 USGS QUAD ST. MICHAEL (B-1 & C-1)



STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES

PROJ No. 62652  
 SAINT MICHAEL AIRPORT

St. Michael, Alaska

DATE: 08/16/2007

FIGURE 6

**Socioeconomic Effects.** Potential positive impacts during construction include the income from food and housing personnel needed to complete construction; income from sales of goods and services to construction contractors; and income to local individuals who may be hired to perform some of the work.

#### **4.15 Cumulative Impacts**

Cumulative impacts are those that result from incremental impact of the action when added to other past, present and reasonable foreseeable future actions. Cumulative impacts are not discussed for the no-action alternative, since this alternative would not be expected to contribute to existing cumulative impacts in the project area, or for resources that the project is not impacting.

Based on the United States Census Bureau website (United States Census Bureau, 2006), the population for Saint Michael did not change from 2000 to 2006. Therefore, it can be considered that a significant increase in population is not anticipated.

The community of Saint Michael is only accessible by air and sea in the summertime and additionally by snow machine in the wintertime. Improvements to the airport would have positive sustainable impacts to the community of Saint Michael. Additional construction projects in the near future listed in the Community Development Plan include:

- the new sanitation system that is currently under construction to provide water delivery/holding tanks for homes (funded in 2003--in construction phase),
- a piped gravity and vacuum sewer system with septic treatment (funded in 2001 and 2005--in design phase),
- household plumbing (funded in 2001--in design phase),
- a multi heavy equipment and road upgrade (pending),
- the Indian Housing Block grant (funded in 2006--in preliminary stage),
- the City complex renovation (pending),
- the Mutual Help Housing (pending),
- cultural center and library (pending),
- road construction to Clear Water Lake (pending), and
- vacuum sewer mains and service lines (funded in 2001--in design phase).

The majority of these projects will take place in the community of Saint Michael approximately 2.2 miles east of the airport (Kawerak, 2004).

The planned airport improvement projects, tentatively scheduled to start in 2008, are not expected to significantly diminish available fill material in the area: Beside the Halfway Mountain Material Site, three other existing material sites and two other potential material sites are present in the Saint Michael-Stebbins vicinity.

The area that would be impacted as part of the airport improvements is not unique to Saint Michael. Due to the little development that currently exists in Saint Michael and the vast habitat that surrounds the airport and the community of Saint Michael, the overall cumulative impacts on the vegetation and terrestrial habitat would be negligible.

Following is a list of each resource category and cumulative impact analysis for that specific resource.

**Air Quality.** When combined with past and reasonably foreseeable future projects, the proposed action is not anticipated to have a substantial cumulative impact on air quality. Additionally the dust palliative added to the runway would reduce air quality impacts by reducing dust particles in the air.

**Coastal Resources.** The proposed project is located in the coastal zone and will comply with State and district coastal zone policies to reduce potential effects on coastal resources. Therefore, the proposed action combined with past and reasonably foreseeable future projects is not anticipated to substantially contribute to cumulative impacts on coastal resources.

**Compatible Land Use.** There are no other identified future development projects on airport property that would result in cumulative impacts to compatible land use.

All anticipated future projects are at least two miles away from the airport.

**Construction Impacts.** Short-term effects on air, noise, and water quality from the airport improvement are anticipated construction activities. These effects would be temporary and construction of the projects listed in the beginning of this section would not likely occur at

the same time as the proposed action. Therefore, the proposed action when combined with the other projects is not anticipated to have a substantial cumulative impact.

### **Fish, Wildlife, and Plants**

Wildlife. Although spectacled eiders and Steller's eiders migrate through the area, they do not nest or molt near the proposed airport and therefore no cumulative impacts are anticipated on these species.

Arctic peregrine falcons are present in the area; the nearest known nest is three miles from the project area. No cumulative impacts are anticipated on the arctic peregrine falcon since the nest is not within the project area. However, the contractor would inspect the site prior to construction. Should another nest be observed within the project area, the USFWS would be contacted (for more detailed information, see Section 4.4.4 Threatened and Endangered Species).

Cumulative impacts to terrestrial mammals and birds in the Saint Michael area include the permanent loss of habitat from the projects described earlier in the section. The proposed action would not have a substantial contribution to cumulative impacts due to the abundance of similar habitats in the region and the minimal impacts to vegetation. The overall cumulative impacts to the area are not anticipated to have a negative effect on the terrestrial mammals and bird populations that utilize the habitat.

Plants. Cumulative impacts to vegetation and terrestrial habitats in Saint Michael include the airport improvements, and possibly the sanitation system, which would result in indirect habitat loss. Due to the little development that currently exists in Saint Michael and the vast habitat that surrounds the airport, the overall cumulative impacts on the vegetation and terrestrial habitat would be negligible.

**Hazardous Materials.** Due to the lack of identified hazardous material sites in the vicinity of the airport, and the existing control measure instituted during construction of the project and maintenance of the airport facility, no significant cumulative impacts are anticipated.

**Natural Resources and Energy Supply.** Some additional energy supply would be needed for the additional PAPI and REIL lighting; however, the proposed action is not anticipated to

have substantial impact on natural resources and energy supply when added to past and reasonably foreseeable future projects.

Sufficient fill material exists in the area to accommodate future development.

**Noise.** Activity at the airport is not anticipated to change from the existing; therefore, the cumulative impact of the proposed action when considered with other past and reasonably foreseeable projects is not anticipated to be substantial.

**Socioeconomic Impacts, Environmental Justice, and Children’s Environmental Health and Safety Risks.** The proposed improvements to the Saint Michael Airport would lead to a positive sustainable impact to the community of Saint Michael, however it would have a small contribution to the overall cumulative socioeconomic impacts to the economic development in Saint Michael. When considered with other past and reasonably foreseeable projects, the cumulative effects are not expected to be substantial.

**Water Quality.** Cumulative water quality impacts in the project area relate to past, present, and reasonably foreseeable future projects in the vicinity of the airport, such as road construction and airport support structures. Due to the limited reasonably foreseeable future actions and the vast amount of wet tundra wetlands, which provide water quality functions, the proposed action combined with other past and future projects is not anticipated to have a substantive cumulative impact on water quality.

**Wetlands.** Due to the vast acreage of wetlands that encompass Saint Michael, and the limited existing and reasonably foreseeable development, it is not anticipated that the proposed action would have a substantial contribution to cumulative wetland impacts.

Cumulative impacts are not expected to be significant; the analysis found that the proposed project would not make a considerable contribution towards cumulative impacts identified in Saint Michael, therefore no additional mitigation would be required.

## 5.0 MITIGATION AND ENVIRONMENTAL COMMITMENTS

Mitigation efforts and environmental commitments are summarized in the following tables:

**Table 7: Mitigation Efforts**

<b>Concern</b>	<b>Mitigation Effort</b>
Water Quality Impacts	<ul style="list-style-type: none"> <li>• Seed and fertilize all disturbed areas</li> <li>• Use clean sand and gravel for all fills</li> <li>• Develop and implement a Stormwater Pollution Prevention Plan</li> <li>• Follow BMPs for Construction Erosion and Sediment Control</li> </ul>
Wetland Impacts	<ul style="list-style-type: none"> <li>• Follow MOA<sup>1</sup></li> <li>• Integrated Avoidance and Minimization Procedures</li> <li>• Compensate for unavoidable wetlands impact by depositing payment into mitigation fund<sup>2</sup></li> </ul>
Material Site Development Impacts	<ul style="list-style-type: none"> <li>• Follow material site development plan (Figure 7, Appendix C)</li> <li>• Minimize environmental footprint</li> <li>• Stockpile material within boundaries of site</li> <li>• Maintain 50-foot vegetative buffer between pit and creeks</li> <li>• Grade pit floor to allow drainage (prevent ponding)</li> <li>• Do not excavate below water table</li> <li>• Bench heights not to exceed 25 feet in height</li> <li>• Stockpile unused (waste) material at edge of site; dispose of in existing excavation area</li> <li>• Reclaim slope with salvaged overburden and grade to 1.5 to 1 or less</li> <li>• Cover with organic overburden if available; seed and fertilize</li> </ul>
Construction Impacts (dust, traffic, erosion)	<ul style="list-style-type: none"> <li>• Use dust control measures during construction</li> <li>• Prepare and use traffic safety plan</li> <li>• Revegetate erodable slopes and all disturbed areas</li> </ul>

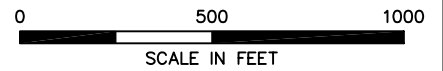
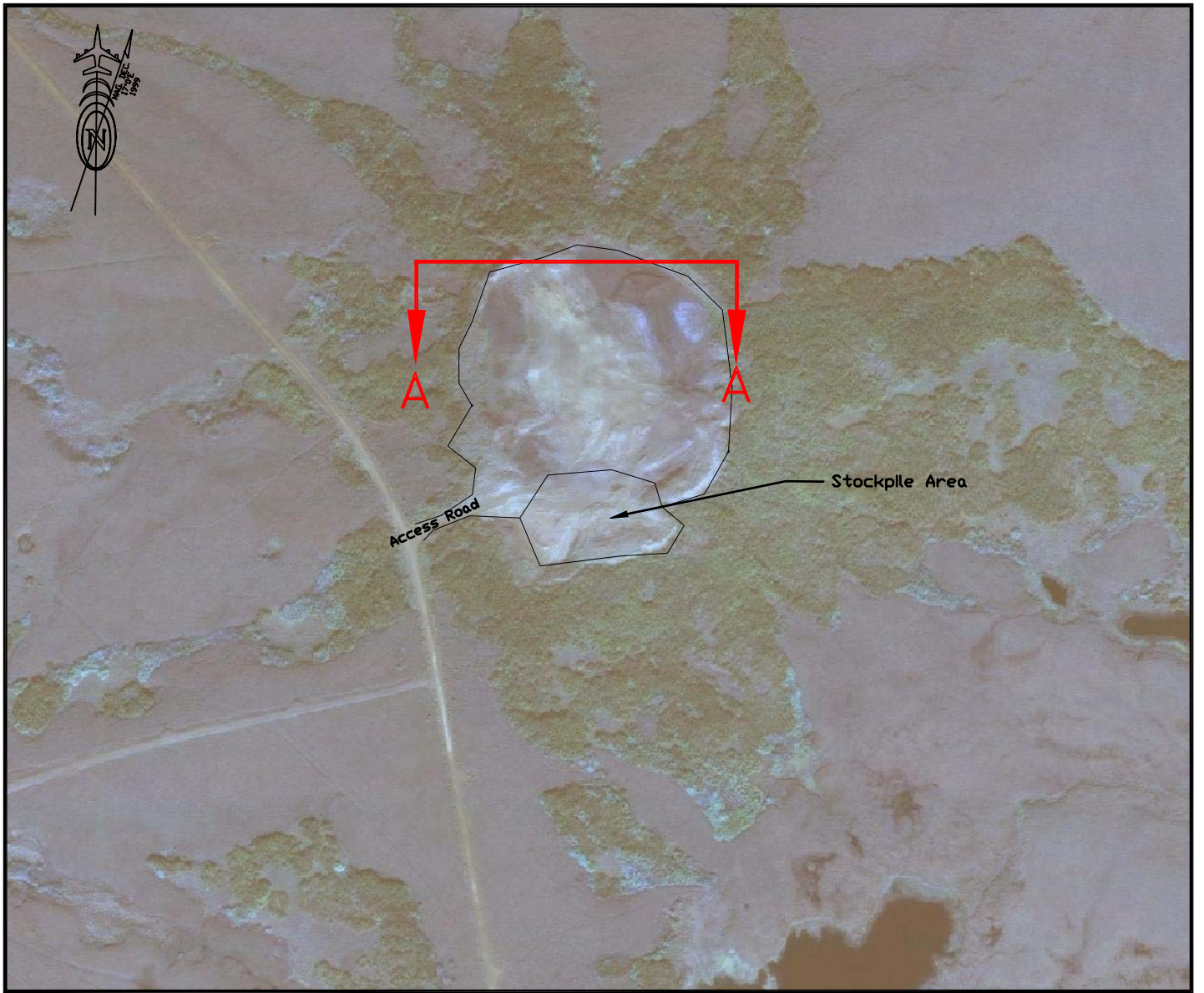
<sup>1</sup> Memorandum of Agreement (MOA) between the FAA, USACE, DOT&PF, USFWS, and the ADF&G Regarding Impacts to Wetlands and Other Aquatic Resources, Mitigation and Airport Improvement Projects in Alaska. This agreement is a programmatic approach to meeting the mitigation hierarchy of the National Environmental Policy Act, the Clean Water Act Section 404 (b)(1) Guidelines, Executive Order 11990 (protection of wetlands and the applicable agencies' mitigation policies). Based upon the nature of Alaska's landscape, the standardized requirements for airport improvement, and requirements to avoid wildlife hazards, this MOA recognizes that options to avoid and minimize impacts to wetlands and other aquatic resources may be limited. Use of this MOA does not generally require consultation with the agencies.

<sup>2</sup> Current rate \$500/acre (\$12,500 for 25 acres impacted). More information will be detailed on the cover letter for the COE permit application.

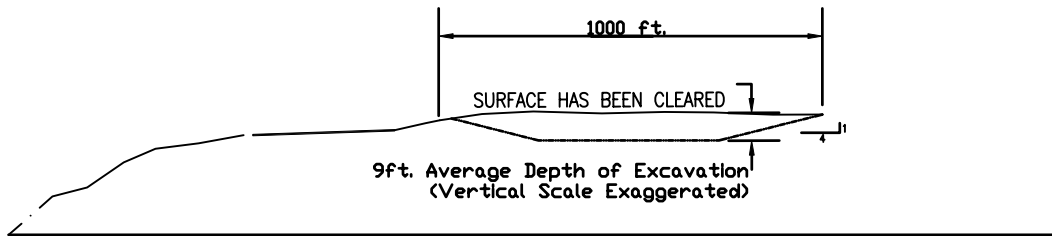


**Table 8: Environmental Commitments**

<b>Concern</b>	<b>Environmental Commitments</b>
Historical, Architectural, Archeological, and Cultural Resources	<ul style="list-style-type: none"> <li>• Stop work immediately if cultural remains are encountered</li> <li>• Follow federal regulations pertaining to discovery (36 CFR Part 800) and contact:                             <ul style="list-style-type: none"> <li>• Contact Advisory Council on Historical Preservation</li> <li>• Contact FAA Airports Division</li> <li>• Contact SHPO</li> <li>• Contact local native organizations or tribal councils</li> </ul> </li> </ul>
Birds	<ul style="list-style-type: none"> <li>• Contractor will walk extent of project area before construction and contact USFWS if Arctic peregrine falcon nest found in project area</li> <li>• Clear vegetation before May 5 or after July 25 to avoid direct taking of nesting migratory birds</li> </ul>
Construction Impacts	<ul style="list-style-type: none"> <li>• Service and fuel equipment a minimum of 100 feet (30 meter) from any drainage channel or active water body</li> <li>• Keep on site sorbent materials to contain and clean up any petroleum spill</li> </ul>
Hazardous Waste or Contamination	<ul style="list-style-type: none"> <li>• Report discovery of unexpected hazardous waste or contamination to resident engineer, who will report to DEC</li> <li>• Dispose hazardous waste or contaminants according to a DEC-approved plan</li> <li>• Contractor will submit and follow a Hazardous Materials Control Plan</li> </ul>



CROSS SECTION A-A



Proposed Mining Plan

T23S R18W SEC 14,15,22,23  
KATEEL RIVER MERIDIAN, ALASKA  
USGS QUAD ST. MICHAEL (B-1 & C-1)



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

PROJ No. 62652  
SAINT MICHAEL AIRPORT

St. Michael, Alaska

DATE: 08/16/2007

FIGURE 7



**6.0 AGENCY AND GOVERNMENT COORDINATION**

DOT&PF mailed out scoping letters to interested parties on April 18, 2005. If a response to the letter was not received, a phone call was made to inquire if the interested party had a comment. DOT&PF received comments from Federal and State Agencies, the local government and native organization, and members of the community. All public and agency scoping materials and comments are attached in Appendix B (Table 9).

**Table 9: Agency Scoping**

<b>Agency Contacted</b>	<b>No Response</b>	<b>Verbal/Written Correspondence</b>	<b>Correspondence Attached In Appendix B</b>
DEC		X (No Comment: E-mail 4/21/05)	Page B-43
DNR-SHPO		X	Page B-42
DNR- Office of Habitat Management and Permitting (OHMP)		X	Page B-37
DNR-OPMP		X (No Comment: Verbal 5/24/05)	
DNR-DMLW		X (No Comment: Verbal 5/24/05)	
Bureau of Land Management (BLM)		X	Page B-37
NOAA, National Marine Fisheries Service		X (No Comment: Verbal 5/24/05)	
USFWS		X	Page B-37
USEPA		X (No Comment: Verbal 5/24/05)	
USACE		X	Page B-35
Dineega Corporation	X		
Saint Michael Tribal Council	X		
Saint Michael City		X	Page B-44
Air Carriers	X		

The Native Village of Saint Michael was contacted during the government-to-government consultation (Appendix B-1). On November 1, 2007, the FAA received a response from Virginia Washington, vice president of the Native Village of Saint Michael, indicating that the tribe prefers to consult directly with the FAA for the proposed project (Appendix B-6).

## **7.0 SUMMARY OF SCOPING COMMENTS FROM AGENCIES**

### Federal Agencies

**USFWS** stated that the project was reviewed under Section 7 of the Endangered Species Act of 1973, as amended. They stated that the village of Saint Michael is in close proximity to an important molting area of the spectacled eider, which is listed as threatened under the Endangered Species Act. Both spectacled and Steller's eiders, which are also listed under the Endangered Species Act, probably migrate through the area.

*Action:* All of the proposed activities (airport reconstruction, material site mining, and material transportation) would occur within terrestrial environment, which is outside of spectacled eider critical habitat. Therefore the USFWS concluded that the project as described is not likely to adversely impact listed species (Appendix B-34). Furthermore, preparation of a Biological Assessment or further consultation under Section 7 of the Endangered Species Act regarding these projects is not necessary at this time.

**BLM** stated that they had no comments regarding the project. BLM does not retain any interest in the surface and subsurface estates of the referenced proposed material sites or of the airport site. The lands for all the proposed material sites are on lands that have been Interim Conveyed to the village corporation for the surface and the regional corporation for the subsurface (Appendix B-37).

**USACE** concluded that a Section 404 Permit will be required for work inland or placement of dredged and/or fill material into waters of the U.S. (Appendix B-35).

### State Agencies

**DNR-OHMP** concurred with the information provided in the scoping letter under Anadromous Fish Streams (Appendix B-9). There are several existing material sites in the vicinity that may be utilized for the project. As proposed, a Fish Habitat Permit from the OHMP will not be required for this project, as it does not affect a stream that supports fish. The OHMP has no objection to the project and no further comments (Appendix B-39).

**DNR-SHPO** stated that based on past surveys, there are no historic properties at the current airport location, and that they did not anticipate any impacts to historic properties (Appendix B-42).

#### Local

Vice Mayor Albert Washington stated that there are no concerns at all with the proposed project and that a zoning permit would not be necessary. His main concerns were that the access road be wide enough and that the dogleg needs to be fixed with a guardrail since the ambulance is top heavy and has trouble negotiating the current curve. In addition, he clarified that the Clear Lake Material Site is off limits since it is being used as a water source. Finally, he added that the Rock Garden Material Site is shown on the wrong side of the road in the graphics (Appendix B-44).

Action: DOT&PF considered the Vice Mayor's comments regarding the access road and decided to include improvements to the access road in the proposed action. Furthermore, the Clear Lake Material Site is no longer considered for a material source.

## **8.0 PUBLIC SCOPING**

A public meeting was held at the Saint Michael Community Hall on December 7, 2004 (Appendix B-52). Members of the Saint Michael Village Corporation Board, Tribal Council, and City Council were present. The community was encouraged to comment on the scope of the project as well as other issues of concern. The community requested that improvements were made to the road between the apron and the intersection with the Stebbins-Saint Michael Road and that guardrail be added.

Runway lengthening, safety area widening and apron expansion were also concerns brought up due to the amount of cargo flights landing at the airport.

Airport maintenance personnel explained that the SREB floor is subsiding in the middle and that needs to be addressed, as well as the beacon that needs to be mounted on the building, since its current location is being jeopardized by erosion.

A resident herd of reindeer wanders onto the runway occasionally, and the community asked if a short fence would be an option to keep them out, and DOT&PF explained that snow drifting and the effectiveness of a fence would have to be evaluated.

Finally, it was brought to DOT&PF's attention that the Clear Lake gravel source is no longer available for use, since the lake will be their new water supply next year. Halfway Mountain material site is still available, as well as other material sites that were presented to DOT&PF during the meeting.

All comments and minutes taken during the Public Meeting are attached in Appendix B-51.

Action: DOT&PF considered lengthening the runway. However, not enough large aircraft frequent the airport to justify the cost and wetland impacts. DOT&PF also considered building a fence to keep reindeer out of the airport area. Since fencing has low efficacy due to snowdrifts in the winter and are difficult to maintain, DOT&PF did not pursue this option.

**9.0 LIST OF PREPARERS**

**Table 10: List of Preparers**

<b>Name/Education</b>	<b>Expertise Applied to Document</b>	<b>Profession/Experience</b>
<b>Project Development and Supervision</b>		
Ryan Anderson, P.E.	DOT&PF Project Manager	Design Engineering Manager
Scott Maybrier	Design	Design Engineer
<b>Text and Organization</b>		
Kristen Hansen M.S. Environmental Science	Project Manager, EA review	Sr. Environmental Planner Six years experience
Cecile A. Davis M.S. Environmental Quality Science	Environmental research and author	Environmental Planner Five years experience
Phil Barnes B.S. Environmental Science	Assistant author	Environmental Planner Two years experience
Brandie T. Hofmeister M.S. Environmental Geology	Assistant author	Environmental Planner Ten years experience

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