



**RUNWAY SAFETY AREA IMPROVEMENTS**

*Environmental Assessment*

---

May 2011



Page intentionally left blank

**Department of Transportation  
Federal Aviation Administration**

**FINDING OF NO SIGNIFICANT IMPACT GUSTAVUS AIRPORT RUNWAY  
SAFETY AREA  
IMPROVEMENTS PROJECT**

**ENVIRONMENTAL ASSESSMENT**

**STATE PROJECT NO. 68287**

**PURPOSE AND NEED**

**Purpose:** The purpose of the proposed project is to enhance safety at the Gustavus Airport by providing a runway safety area (RSA) that meets Federal Aviation Administration (FAA) standards to the maximum extent practicable.

**Need:** The safety and operational deficiencies at Gustavus Airport were identified in the Southeast Region Aviation System Plan (State of Alaska 2008). The current Runway Safety Area (RSA) is 262 feet wide and extends 591 feet past runway end 11 (north) and 201 feet past runway end 29 (south), which does not meet FAA standards for safety for the commercial jet aircraft that use the airport. The current Airport Reference Code (ARC) for the Gustavus Airport's Runway 11/29 is C-III which is based on the 737 jet aircraft that serves the community during the summer. According to FAA standards for C-III runways, an RSA should be 500 feet wide and 1,000 feet long beyond each runway end.

**REQUESTED FEDERAL ACTION**

The requested federal action is FAA approval of the revised Gustavus Airport Layout Plan and participating in funding for the proposed airport improvements through the Airport Improvement Program.

**DESCRIPTION OF THE PROPOSED ACTION**

The Gustavus Airport RSA Improvements Project consists of the following:

- Lengthening and widening the RSA for Runway 11/29 by:
  - Adding 409 feet at runway end 11 and 799 feet at runway end 29, and
  - Widening the entire RSA by adding 238 feet to its width.
- Construction of facilities to accommodate the expanded RSA including:
  - Grading a road section within the extent of the proposed RSA,
  - Rerouting 1,400 linear feet of road to remain outside the proposed RSA, and

- Re-grading the existing RSA ditches and realigning RSA ditches or rerouting other ditches as necessary.
  - Project grading would generate more material than needed for fill; excess material would be disposed of in upland areas on airport property.
- Realigning a portion of airport fence to accommodate the RSA expansion near runway 11.
- Rerouting approximately 543 linear feet of an Unnamed Anadromous Stream (Stream) around the northern extension of the RSA on the eastern side and filling the former stream channel.
  - New Stream length would be approximately 418 linear feet.
- Rerouting approximately 625 linear feet of an Unnamed Ditch (Ditch) around at the southern end of the existing runway to accommodate a new culvert in the portion of the Ditch within the RSA expansion area.
  - New culvert would be approximately 600 linear feet.
- Installation of an Asphalt Stabilized Surface to the entire RSA.
- Removing and replacing culverts, including:
  - Removing one culvert near the end of runway end 11.
  - Installing one new culvert in the existing ditch under the RSA area off the end of runway 29.
  - Removing and replacing one culvert near the end of runway end 29.
  - Installing one new culvert in a new ditch parallel to the runway near the runway end 29 supplemental wind cone.
- Adjusting and replacing existing electrical facilities.
  - Replacing electrical conduit to the wind cones, VASI, and runway lighting where the realigned RSA ditches intersect existing conduit.
  - Lowering VASI, REIL, and Distance to Go sign, and other NAVAID concrete bases to match the proposed RSA elevation.
  - Adjusting electrical junction boxes to match the proposed RSA elevation.
  - Replacing failing direct buried cable between the VASI.
- Construction areas would be accessed by existing airport roads.

## **ALTERNATIVES CONSIDERED**

### **Alternatives Considered but Eliminated from Detailed Study**

**Engineered Material Arresting System (EMAS) and Lateral RSA Widening:** While technically feasible, this alternative exceeds the financial cost threshold established in

FAA Order 5200.9 for financial feasibility of RSA improvements, and therefore could not be implemented. This alternative would have an adverse effect to the Gustavus Airfield Historic District (JUN-01093), a Department of Transportation Section 4(f) property. For these reasons, this alternative was dismissed from further consideration.

**EMAS without Lateral RSA Improvement:** The lateral RSA width would remain 'as is' and would not meet FAA standards for RSAs; thus, does not meet the project purpose and need. Therefore, this alternative was dismissed from further consideration.

**Geocell Reinforced Soil RSA:** This alternative would construct the full RSA dimensions in AC 150/5300-13 by reinforcing the existing sand with a cellular confinement system (geocell) and would meet the purpose and need for the RSA. The sand in the geocells would be seeded to prevent the sandy soil from eroding and endangering the ability of the geocell to support an errant aircraft. This alternative was dismissed from further consideration because it would continue to cause unacceptable safety problems due to perpetuating wildlife aviation hazards by enhancing wildlife habitat adjacent to an active runway.

**RSA to Full Standards with Aggregate (gravel):** This alternative would construct the full RSA dimensions in AC 150/1500-13; therefore, would meet the purpose and need. Sand would be removed and a layer of aggregate base course would be placed within the RSA dimensions to support an errant aircraft. This alternative was dismissed because, 1) It is not a safe practice to construct gravel surfaces on airports that serve jet aircraft because gravel can be ingested into jet engines on take-off, 2) The gravel RSA would eventually support the growth of grass on the side slopes which would further existing wildlife hazards and potential bird strikes. In addition, gravel would attract avian fauna that frequent the Gustavus area and 3) This alternative would cost substantially more than the Proposed Action. For these reasons, this alternative was dismissed from further consideration.

### **Alternatives Carried Forward**

The Proposed Action and the No-Action Alternative were evaluated in the Environmental Assessment (EA) for the Gustavus Airport RSA Improvements Project.

**No-Action Alternative:** Under the No-Action Alternative, no expansion of the RSA or change to the existing conditions at the Gustavus Airport would occur and the RSA would not meet FAA RSA standards. The No-Action Alternative does not meet the Purpose and Need.

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

**ENVIRONMENTAL CONSEQUENCES**

<b>Environmental Element</b>	<b>Description of Impact</b>	<b>Applicable Page Number in EA</b>
<b>Coastal Zone</b>	Loss of 125 linear feet of stream habitat.	9
<b>Fish, Wildlife, and Plants</b>	<ul style="list-style-type: none"> <li>• Loss of 125 linear feet of essential fish habitat (EFH) and stream habitat.</li> <li>• The new Stream reach would improve fish habitat by providing a more naturally formed steam habitat which includes bars, near bank vegetation, meandering and complex habitat. Water flow would also be improved</li> </ul>	13
<b>Floodplains</b>	<ul style="list-style-type: none"> <li>• Decreased flooding events adjacent and upstream of airport.</li> </ul>	16
<b>Historical, Architectural, Archaeological, and Cultural Resources</b>	<p>The Gustavus Airport Historic District (JUN-01093) is eligible for the National Register of Historic Places (NHRP) as an example of World War II (WWII) construction and the Civil Aeronautics Authority Administration (CAA) period following the war. The proposed lengthening and widening of runway 11/29 would affect the proportionality of the existing runway. This change in proportionality would affect one of the District's character defining features (the runway). The project would have an adverse visual effect on the Historic District. The State Historic Preservation Officer (SHPO) concurred with a finding of adverse effect on December 13, 2011. A Memorandum of Agreement (MOA) was signed February 11, 2011 between FAA, SHPO and the Alaska Department of Transportation and Public Facilities (DOT&amp;PF) to resolve adverse effects.</p>	18
<b>Department of Transportation, Section 4(f)</b>	<p>FAA and DOT&amp;PF determined that there are no feasible or prudent alternatives that avoid adversely affecting the Gustavus Airport Historic District (District; JUN-01093) which is a Section 4(f) property. The Department of the Interior has reviewed and concurred with the Section 4(f) Statement and the proposed mitigation.</p>	19
<b>Wetlands</b>	<ul style="list-style-type: none"> <li>• Net loss of 125 linear feet of Waters of the U.S. (Stream)</li> <li>• Fill in 0.44 acres of Wetlands.</li> <li>• A total impact of 1.07 acres of Waters of the U.S.</li> </ul>	22

Environmental Element	Description of Impact	Applicable Page Number in EA
<p><b>Construction Impacts</b></p>	<ul style="list-style-type: none"> <li>• Temporary localized decrease in air quality during construction around project area and existing roads to and from the project.</li> <li>• Minor short term induced socioeconomic impacts associated with construction.</li> <li>• Temporary increase in employment during construction.</li> <li>• Direct temporary impacts to uplands on airport property for use as staging areas during construction.</li> <li>• Water resource impacts include the temporary use of water from the former material site located on airport property for RSA compaction and dust control.</li> <li>• Temporary increase in income of local businesses that provide support services during the construction period.</li> <li>• Minor and temporary noise impacts include the temporary disturbance to residential areas, birds, terrestrial mammals, and other wildlife in areas adjacent to the Gustavus Airport.</li> <li>• Minor short term impacts to noise and water quality associated with construction.</li> </ul>	<p>24</p>

The proposed project to improve the Gustavus Airport RSA is consistent with community planning efforts (EA page 10).

**COORDINATION (EA APPENDIX F)**

**MITIGATION MEASURES AND ENVIRONMENTAL COMMITMENTS**

Mitigation measures and environmental commitments (described below) will be followed, as well as any future stipulations and conditions associated with the permits (signed permit applications are included in EA Appendix A). The project has been coordinated with the appropriate agencies and local tribes and includes measures to avoid and minimize impacts.

**MITIGATION MEASURES AND ENVIRONMENTAL COMMITMENTS**

<b>Environmental Resource</b>	<b>Description of Mitigation Measure or Environmental Commitment</b>	<b>Applicable Page Numbers in EA</b>
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• Contractors will follow Best Management Practices (BMPs) to reduce fugitive dust and exhaust emissions from the construction vehicles.</li> <li>• If the hot mix hardening option is selected, the asphalt plant will be located on the airport property away from residential areas.</li> </ul>	28
<b>Fish, Wildlife and Plants</b>	<ul style="list-style-type: none"> <li>• Adherence to the USFWS recommended vegetation clearing window (April 15 to July 15) to avoid nesting migratory birds.</li> <li>• All work will be completed in compliance with the ADF&amp;G permit stipulations.</li> <li>• Contractor will ensure the survival of fish in the existing stream by removing and placing them downstream of the construction area.</li> <li>• The in-stream work will be timed to minimize impacts to fish (work to be completed between June 30 and August 30). BMPs will be used for work in the Ditch to minimize water quality impacts.</li> <li>• A professional with expertise in stream hydraulics and fish habitat restoration will be on-site to monitor and record construction activities.</li> <li>• The new Stream will be constructed to allow for continuous flow even during low water levels thus allowing continuous fish passage and decreasing fish fatalities.</li> </ul>	28 & Appendix E Essential Fish Habitat Assessment
<b>Hazardous Materials, Pollution Prevention, and Solid Waste</b>	<ul style="list-style-type: none"> <li>• Contractor is required to remove all hazardous materials and solid waste generated by construction activities.</li> <li>• Contractor is required to submit and have approved a Hazardous Materials Control Plan (HMCP) prior to construction. Construction will be conducted in accordance with an approved HMCP.</li> </ul>	28
<b>Historic, Architectural, Archeological, and Cultural Resources/DOT Section 4(f) properties</b>	<ul style="list-style-type: none"> <li>• Impacts to the 4(f) property will be mitigated through implementing the stipulations in the FAA, SHPO, and DOT&amp;PF MOA.</li> <li>• Excess sand excavated from the project will be used as a top coat in the chip seal to lessen the visual impacts and minimize impacts to the character defining features of the RSA expansion on the District. Also, as part of the stipulations of the MOA, a historic context and evaluation of the District will be completed within four years of the MOA execution on February 11, 2011.</li> <li>• The Contractor will cease operations in the area and notify the DOTPF on site Engineer and FAA if prehistoric artifacts, burials, dwelling site remains, or paleontological remains are encountered. Work will not continue in the area until so directed by the Engineer.</li> </ul>	28
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Construction equipment will be equipped with mufflers that meet the minimum original equipment manufacturer specifications to reduce noise.</li> </ul>	28



Environmental Resource	Description of Mitigation Measure or Environmental Commitment	Applicable Page Numbers in EA
Water Quality	<ul style="list-style-type: none"> <li>• Side slopes of the relocated Stream will be stabilized with BMPs detailed within a Stormwater Pollution Prevention Plan (SWPPP) allowing for rapid re-growth of vegetation. Slopes will use organic matter salvaged during excavation to the extent practicable.</li> <li>• Contractor will follow BMPs and the Erosion Sediment Control Plan and develop a SWPPP.</li> </ul>	28
Wetlands and Other Waters of the U.S.	<ul style="list-style-type: none"> <li>• Disposal site will be flagged to avoid inadvertent wetland fill.</li> <li>• All work will be conducted in accordance with USACE, ADNR, ADF&amp;G, and Alaska Department of Environmental Conservation (ADEC) permit stipulations.</li> <li>• The banks will be vegetated with native plant species and will include placement of organic matter salvaged during excavation.</li> <li>• If any stream bank stabilization is required (other than replacement of sidecast organics) Contractor will use only certified 100% weed-free native seed mix or mats. This reduces the chance of invasive non-native plants from quickly destroying any natural riparian vegetation, and reducing the quality of riparian and in-stream habitat.</li> <li>• The Contractor will be required to rinse equipment tracks, wheels, and under carriages off-site, removing any soil or plant fragments. This reduces the danger of transporting weed seeds or other propagules to the project site.</li> <li>• During construction the Contractor will use an approved method to allow continuous flow of the stream and ditch.</li> </ul>	28

**Wetlands**

The proposed project will result in unavoidable wetland impacts. The new *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule* emphasizes a “watershed approach” to include all aquatic resources (water bodies and wetlands) in proposed mitigation plans: “[T]his rule should apply to compensatory mitigation for all types of aquatic resources that can be impacted by activities authorized by DA permits, including streams and other open waters” (Federal Register, Rules and Regulations: Vol. 73, No. 70: April 10, 2008: 19596).

Proposed wetland Avoidance and Minimization Measures for this project are listed below and documented in the Wetland Avoidance and Minimization Analysis (EA Appendix J).

1. Project design has minimized the fill footprint to the maximum extent practicable.
2. The stream gradient of the new stream will be steeper to improve water flow.
3. Streambank slopes subject to erosion and disturbed areas will be re-vegetated to minimize stormwater pollution.
4. Only clean sand and gravel will be used for fills to avoid contamination of the adjacent stream and ditch system.
5. Materials will be stockpiled in developed areas to avoid impacting additional wetlands.

6. Operation of construction vehicles will be limited to the permitted boundaries within the project area or on designated roads to avoid unintentional impacts to wetlands in the area.

The Proposed Action would permanently fill approximately 1.07 acres of jurisdictional wetlands. DOTPF has proposed an in lieu fee (ILF) for wetlands preservation using an ILF sponsor to compensate for the unavoidable loss of wetlands. DOTPF will comply with the terms of the Corps fill permit stipulations including compensatory mitigation requirements.

#### **REQUIRED PERMITS**

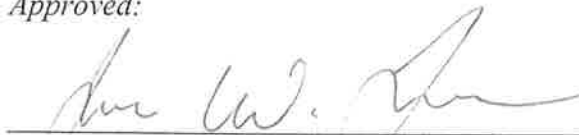
- USACE Section 404 permit for fill in wetlands
- ADNR Coastal Consistency Determination
- ADEC Section 401 Water Quality Certification
- ADEC Alaska Pollutant Discharge Elimination System General Permit for Construction Activities
- ADF&G Title 16 Fish Habitat Permit
- ADNR Temporary Water Use Permit
- ADNR Easement Issuance

Signed permit applications are included in Appendix A of the EA.

#### **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 Environmental Impact Statement for this action.

*Approved:*

  
\_\_\_\_\_  
*James W. Lomen, P.E. Deputy Manager*

*5/9/2011*  
\_\_\_\_\_  
*Date*

*Airports Division, FAA Alaska Region*

FINAL ENVIRONMENTAL ASSESSMENT  
GUSTAVUS AIRPORT RUNWAY SAFETY AREA IMPROVEMENTS  
GUSTAVUS, ALASKA

DOT&PF PROJECT NO. 68287

**PROPOSED ACTION: THE PURPOSE OF THE PROPOSED PROJECT IS TO ENHANCE SAFETY AT THE GUSTAVUS AIRPORT BY IMPROVING RUNWAY SAFETY AREA TO MEET FEDERAL AVIATION ADMINISTRATION STANDARDS.**

**Prepared for:**

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

**On behalf of the sponsor:**

State of Alaska  
Department of Transportation and Public Facilities,  
Southeast Region  
6860 Glacier Highway  
Juneau, Alaska 99801

**Prepared by:**

DOWL HKM  
4041 B Street  
Anchorage, Alaska 99503

W.O. D60159

May 2011

This Environmental Assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA Official

Responsible FAA Official



Date



LIST OF ACRONYMS.....	III
AVIATION AND PROJECT SPECIFIC DEFINITIONS .....	IV
1.0 PURPOSE AND NEED .....	1
2.0 PROPOSED ACTION .....	3
3.0 ALTERNATIVES.....	5
3.1 Proposed Action.....	5
3.1.1 Description of Action .....	5
3.1.2 Summary of Environmental Consequences.....	5
3.2 No-Action Alternative .....	5
3.2.1 Description of Action .....	5
3.2.2 Summary of Environmental Consequences.....	5
3.3 Alternatives Considered but Dismissed .....	5
3.3.1 Engineered Material Arresting System (EMAS) and Lateral RSA Widening .....	5
3.3.2 EMAS without Lateral RSA improvement.....	6
3.3.3 Geocell Reinforced Soil RSA.....	6
3.3.4 RSA to Full Standards with Aggregate (gravel) .....	6
4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES .....	10
4.1 Air Quality .....	10
4.2 Coastal Zone.....	10
4.3 Compatible Land Use .....	11
4.4 Energy Supplies and Natural Resources .....	12
4.5 Environmental Justice and Social Impacts.....	12
4.5.1 Environmental Justice Impacts .....	12
4.5.2 Social Impacts .....	13
4.5.3 Induced Socioeconomic Impacts .....	14
4.6 Fish, Wildlife, and Plants.....	14
4.6.1 Avian Populations .....	14
4.6.2 Mammal Populations.....	15
4.6.3 Fish Populations and Essential Fish Habitat .....	15
4.6.4 Vegetation and Terrestrial Habitats .....	16
4.6.5 Federally-listed Endangered and Threatened Species .....	17
4.7 Floodplains.....	17
4.8 Hazardous Materials, Pollution Prevention, and Solid Waste.....	18
4.9 Historical, Architectural, Archaeological, and Cultural Resources .....	19
4.10 Light Emissions and Visual Effects .....	20
4.11 Department of Transportation Act of 1966, Section 4(f) .....	20
4.12 Noise .....	22
4.13 Water Quality.....	22
4.14 Wetlands and Other Waters of the United States.....	23
4.15 Construction Impacts.....	25
4.15.1 Air Quality .....	25
4.15.2 Energy Supplies and Natural Resources .....	25
4.15.3 Induced Socioeconomic Impacts .....	25
4.15.4 Fish, Wildlife, and Plants.....	26
4.15.5 Hazardous Materials, Pollution Prevention, and Solid Waste.....	26
4.15.6 Noise .....	26
4.15.7 Water Quality.....	26
4.16 Cumulative Impacts .....	26
4.16.1 Induced Socioeconomic Impacts .....	27

4.16.2 Fish, Wildlife, and Plants..... 28  
4.16.3 Department of Transportation, Section 4(f)..... 28  
4.16.4 Water Quality..... 28  
5.0 ENVIRONMENTAL COMMITMENTS AND MITIGATION..... 29  
6.1 Coordination and Consultation with Agencies and Tribes ..... 32  
6.1.1 Federal Agencies..... 32  
6.1.2 State Agencies..... 33  
6.1.3 Local Government..... 35  
6.1.4 Tribal Government..... 35  
6.2 Public Scoping ..... 35  
7.0 LIST OF PREPARERS ..... 37  
8.0 REFERENCES ..... 38

**TABLES**

Table 1: Comparison of Alternatives’ Environmental Effects ..... 7  
Table 2: Estimated Net Impacts to Waters of the United States..... 24  
Table 3: Projects Considered for Cumulative Impact Analysis ..... 27  
Table 4: Environmental Commitments and Mitigation ..... 29  
Table 5: Agency Scoping ..... 31  
Table 6: List of Preparers ..... 37

**FIGURES**

Figure 1 ..... Vicinity Map  
Figure 2 ..... Existing Conditions  
Figure 3 ..... Proposed Action  
Figure 4 ..... Wetland Classes  
Figure 5 ..... Wetlands & Waters of the U.S.  
Figure 6 ..... Wetlands & Waters of the U.S.  
Figure 7 ..... Culvert Profile and Section  
Figure 8 ..... Wetlands & Waters of the U.S.

**APPENDICES**

Appendix A ..... Permit applications  
Appendix B..... Gustavus Airport Terminal Area Forecast  
Appendix C..... Bald Eagle Nest Locations  
Appendix D ..... DNR-OHMP Fish Sampling Reports  
Appendix E..... Essential Fish Habitat Assessment  
Appendix F..... Consultation and Coordination  
Appendix G ..... DOT&PF Contaminated Site Visit Report  
Appendix H ..... Cultural Reconnaissance Report  
Appendix I..... Wetlands Delineation Report and DOT&PF Site Visit Memorandum  
Appendix J ..... Wetlands Avoidance & Minimization Checklist  
Appendix K..... Section 4(f) Statement

**LIST OF ACRONYMS**

AAC	Alaska Administrative Code
ac	acre
AES	Asphalt Emulsified Surface
ADEC	State of Alaska Department of Environmental Conservation
ADF&G	State of Alaska Department of Fish and Game
ARC	Airport Reference Code
BMPs	Best Management Practices
CAA	Civil Aeronautical Administration
cy	cubic yard
DCCED	State of Alaska Department of Commerce, Community and Economic Development
DEC	State of Alaska Department of Environmental Conservation
DNR	State of Alaska Department of Natural Resources
DNR-MLW	DNR-Division of Mining, Land and Water
DOT	U.S. Department of Transportation
DOT&PF	State of Alaska Department of Transportation and Public Facilities
DOWL	DOWL HKM
EA	Environmental Assessment
EFH	Essential Fish Habitat
EMAS	Engineered Material Arresting System
EPA	Environmental Protection Agency
ESCP	Erosion and Sediment Control Plan
FAA	Federal Aviation Administration
ft	feet
FOD	Foreign Object or Debris
GAHD	Gustavus Airfield Historic District
MALS	Medium-Intensity Approach Lighting System
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OHA	Office of History and Archaeology
OHW	ordinary high water
PAPI	Precision Approach Path Indicator
PCB	polychlorinated biphenyls
R/W	runway
RSA	Runway Safety Area
R/W	runway
sf	square feet
SHPO	State Historic Preservation Officer
SRE	snow removal equipment
SWPPP	Storm Water Pollution Prevention Plan
sy	square yard
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VASI	Visual Approach Slope Indicator

### AVIATION AND PROJECT SPECIFIC DEFINITIONS

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 A-I or B-I. Airports serving larger general aviation and small jet airplanes are usually ARC B-II or C-II.

#### FAA ARC Groups

Approach Speed		Wingspan	
Type	Speed in Knots	Type	Wingspan in Feet
A	Less than 91	I	Up to 49
B	92 - 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

Operation: A landing or takeoff by an aircraft.

Runway (R/W): A defined rectangular surface on an airport prepared or suitable for the landing or takeoff of airplanes.

Runway Edge Lights: Used to outline the edges of runways during periods of darkness or restricted visibility conditions. These light systems are classified according to the intensity they are capable of producing:

- High Intensity Runway Lights (HIRL)
- Medium Intensity Runway Lights (MIRL)
- Low Intensity Runway Lights (LIRL)

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 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.

Runway Safety Area (RSA) Ditches: The RSA Ditches are directly adjacent to Runway 11/29 and airport apron.

Southeast Region Aviation System Plan: The Southeast Alaska (Southeast) aviation system consists of over 70 public and private airports, seaplane bases (SPB), and helicopter facilities registered with the FAA. Nearly half of them are owned by the State of Alaska Department of Transportation and Public Facilities (DOT&PF) and have been developed following airport master plans and/or airport layout plans. Aside from these plans and the Alaska Aviation System Plan (AASP), there were no comprehensive airport planning studies that addressed existing conditions and future needs for aviation in Southeast Alaska. Consequently, the DOT&PF has developed the Southeast Region Aviation System Plan (SRASP). The SRASP is a part of the Southeast Alaska Transportation Plan.

Unnamed Ditch (Ditch): The Ditch begins south of Runway end 29 near the airport apron area and connects to unnamed stream (#114-23-10199) southeast of Runway end 29. The Ditch is not an ADF&G cataloged anadromous stream (Figure 3).

Unnamed Stream (Stream): The Stream begins at the former material site northeast of the airport and flows parallel to Runway 11/29 and then discharges to the Icy Strait. It is an ADF&G cataloged anadromous stream (#114-23-10199).



## 1.0 PURPOSE AND NEED

The Gustavus Airport is located approximately 40 miles west of Juneau on a peninsula off the Southeast Alaska mainland in Gustavus, Alaska (Figure 1). The purpose of the Gustavus Airport Runway Safety Area (RSA) Improvement project is to enhance safety at Gustavus Airport by bringing the airport up to FAA standards to the maximum extent practicable. The safety and operational deficiencies at Gustavus Airport were identified in the Southeast Region Aviation System Plan (State of Alaska 2008). The Southeast Region Aviation System Plan was developed with input from the Gustavus community, local government, airport tenants, and various resource agencies. The design aircraft for this airport is the Boeing 737 that uses the Gustavus Airport during the summer months.

An RSA enhances the safety for airplanes that undershoot, overrun, or veer off the runway. The RSA is a cleared area surrounding the runway to help reduce the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. According to a Boeing Commercial Airplanes study published in 2005, 71 percent of the world's jet aircraft accidents between the years of 1995 and 2004 occurred during landing and takeoff and accounted for 41 percent of all onboard and third party fatalities. Another study found that in the seventeen months between October 2004 and February 2006, seven airplanes skidded off the runways in Canada and U.S. resulting in eight deaths, 34 injuries, and a complete loss of four aircraft.

On Aug 8, 2010 an Alaska Airline 737 taking off from Sitka Airport ingested an eagle into an engine. The engine shutdown automatically. The aircraft was rolling down the runway at high speed and the engine shut down just before takeoff. The pilot was able to stop the aircraft on the runway but the outcome could have been disastrous if the bird had been ingested seconds later. In that instance an expanded RSA would provide extra room for the aircraft to stop. DOT&PF, in coordination with the FAA, is currently expanding the RSA at the Sitka Airport.

In addition, there are three accident reports issued by the NTSB for aircraft accidents at the Gustavus Airport that involve operational safety concerns that would be addressed with an expanded RSA. The aircraft are smaller than a 737 but all aircraft involved veer off course upon landing. An aircraft that undershoots, overshoots, or veers off a runway into a safety area that meets FAA design standards has less chance of damage and a lower probability of loss of lives.

The RSA also provides greater accessibility for fire-fighting and rescue equipment during such incidents. As prescribed in FAA AC 150/5300-13, Design Standards for Airports for Design Group C (aircraft such as the Boeing 737), the RSA shall be:

1. Cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations;
2. Drained by grading or storm sewers to prevent water accumulation;
3. Capable, under dry conditions, of supporting snow removal equipment, Airport Rescue and Fire-fighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and

4. Free of objects, except for objects that need to be located in the RSA because of their function.

The required RSA length and width are based on the characteristics of aircraft that regularly use an airport. The current Airport Reference Code (ARC) for the Gustavus Airport's Runway 11/29 is C-III. According to FAA standards for C-III runways, an RSA should be 500 feet wide and 1,000 feet long beyond each runway end. The width of the RSA is the distance from outer edge to outer edge. The RSA length extends to each runway threshold. The current RSA is 262 feet wide and extends 591 feet past runway end 11 (north) and 201 feet past runway end 29 (south), which does not meet FAA standards for safety.

The Department of Transportation & Public Facilities (DOT&PF), in cooperation with the FAA, proposes to complete the following:

1. Expand the RSA for runway 11/29 to meet FAA standards and ensure to the maximum extent practicable a safe operating runway, and
2. Realign drainage ditches and reroute an adjacent stream to accommodate the expanded RSA.

The proposed federal action that DOT&PF is requesting is funding the proposed action through the Airport Improvement Program and approval of the Airport Layout Plan. Construction is expected to begin in 2011.

## 2.0 PROPOSED ACTION

The DOT&PF proposes to upgrade the Gustavus Airport RSA to meet FAA standards. The current length, width, and alignment of Runway 11/29 will be maintained. The Proposed Action is discussed in more detail below and shown in Figure 3.

Specifically, the Proposed Action would include:

- Lengthening and widening the RSA for Runway 11/29 by:
  - Adding 409 feet at runway end 11 and 799 feet at runway end 29, and
  - Widening the entire RSA by adding 238 feet to its width.
- Construction of facilities to accommodate the expanded RSA including:
  - Grading a road section within the extent of the proposed RSA,
  - Rerouting 1,400 linear feet of road to remain outside the proposed RSA, and
  - Re-grading the existing RSA ditches and realigning RSA ditches or rerouting other ditches as necessary.
    - Project grading would generate more material than needed for fill; excess material would be disposed of in upland areas on airport property.
  - Realigning a portion of airport fence to accommodate the RSA expansion near runway 11.
  - Rerouting approximately 543 linear feet of an Unnamed Anadromous Stream (Stream) around the northern extension of the RSA on the eastern side and filling the former stream channel.
    - New Stream length would be approximately 418 linear feet.
  - Rerouting approximately 625 linear feet of an Unnamed Ditch (Ditch) around at the southern end of the existing runway to accommodate a new culvert in the portion of the Ditch within the RSA expansion area.
    - New culvert would be approximately 600 linear feet.
- Installation of an Asphalt Stabilized Surface to the entire RSA.
  - Surfacing hardening options would include either:
    - A hot asphalt sand mix with the following factors:
      - The hot asphalt sand mix would require a mobile batch plant including a mobile power plant.

- The hot asphalt sand mix can be installed during a wide range of environmental conditions. The RSA can be surfaced later in rainy fall weather than the other option. This option would allow project completion in one construction season.
- An emulsified asphalt and Portland cement surface (also known as an Asphalt Emulsified Surface (AES))with the following factors:
  - Preparation, mixing, and dispersal of the AES would be done by truck so no batch plant would be required.
  - Initial compaction of RSA would require water withdrawal from a former material site on airport property.
  - AES requires water evaporation to become the final hardened surface. If construction begins in the late summer season, the generally wet fall conditions would require the AES be applied in the next warmer/dryer season of late spring. This would result in a two construction season project.
- Surfacing options would be identical in appearance and would have a sand seal on the surface. The sand seal would be installed in the spring following construction because of weather constraints.
- Removing and replacing culverts, including:
  - Removing one culvert near the end of runway end 11.
  - Installing one new culvert in the existing ditch under the RSA area off the end of runway 29.
  - Removing and replacing one culvert near the end of runway end 29.
  - Installing one new culvert in a new ditch parallel to the runway near the runway end 29 supplemental wind cone.
- Adjusting and replacing existing electrical facilities, but no new lighting would be added.
  - Replacing electrical conduit to the wind cones, VASI, and runway lighting where the realigned RSA ditches intersect existing conduit.
  - Lowering VASI, REIL, and Distance to Go sign, and other NAVAID concrete bases to match the proposed RSA elevation.
    - Trenching to the nearest junction would be necessary to adjust the conduit leading into these NAVAIDs.
  - Adjusting electrical junction boxes to match the proposed RSA elevation.
  - Replacing failing direct buried cable between the VASI.
- Construction areas would be accessed by existing airport roads.

### **3.0 ALTERNATIVES**

This section describes the alternatives considered for this project. This Environmental Assessment (EA) analyzes one Action Alternative and the No-Action Alternative. Other alternatives were considered during the preliminary design and environmental phase, but dismissed from further evaluation, as discussed below.

#### **3.1 Proposed Action**

##### **3.1.1 Description of Action**

The Proposed Action as described in Chapter 2.0 would result in the Gustavus Airport meeting FAA RSA standards.

##### **3.1.2 Summary of Environmental Consequences**

The Proposed Action would not have significant adverse impacts on any environmental or socioeconomic resource. Based on the EA analysis, there is a National Register (NR) eligible Gustavus Airfield Historic District (JUN-01093) (District) within the Proposed Action's Area of Potential Effect (APE). This historic property is a U.S. Department of Transportation (DOT) Act of 1966<sup>1</sup> Section 4 (f) resource. The Proposed Action would have an adverse effect on this 4(f) resource because of proposed changes to District contributing properties (discussed in more detail in Section 4.11). Table 1 summarizes the environmental consequences discussed in the EA. Impact categories not identified in the project area are not discussed in the table, but are listed in Section 4.0.

#### **3.2 No-Action Alternative**

##### **3.2.1 Description of Action**

Under the No-Action Alternative, no expansion of the RSA or change to the existing conditions at the Gustavus Airport would occur and the RSA would not meet FAA RSA standards.

The No-Action alternative (Figure 2) does not meet the Purpose and Need identified in Chapter 1.

##### **3.2.2 Summary of Environmental Consequences**

Associated with the RSA project is rerouting of a stream that floods the runway. This stream would be rerouted during construction. Without rerouting this stream, flooding adjacent to the airport may continue due to the sharp curve of the Stream channel at the 11 end of runway 11/29. Environmental consequences of the No-Action Alternative are summarized in Table 1.

#### **3.3 Alternatives Considered but Dismissed**

##### **3.3.1 Engineered Material Arresting System (EMAS) and Lateral RSA Widening**

This alternative would construct a 600-foot (ft) long RSA containing a 345-ft by 150-ft bed of EMAS on each end of Runway 11/29. The RSA would be widened at the runway centerline 120 ft in each direction. While technically feasible, this alternative, was estimated at \$23.5 million, which exceeds the financial cost threshold established in FAA Order 5200.9 for financial feasibility of RSA

---

<sup>1</sup> DOT Act of 1966 [Title 49, USC Section 1653(f); amended and recodified in 49 USC Section 303]

improvements, and therefore could not be implemented. To be within the FAA's financial feasibility threshold, this alternative would have to be modified to include a non-standard EMAS installation which would not meet RSA standards. This would not meet the purpose and need to enhance RSA to the maximum extent practicable because another alternative, the Proposed Action, exists that is within the FAA's financial feasibility threshold and meets RSA standards.

Further, even if modified this alternative would still have an adverse effect to the Gustavus Airfield Historic District (JUN-01093), a DOT Section 4(f) property.

For these reasons, this alternative was dismissed from further consideration.

### 3.3.2 EMAS without Lateral RSA improvement

This alternative would construct a 600-ft long RSA containing a 345-ft by 150-ft bed of EMAS on each end of Runway 11/29. The lateral RSA width would remain 'as is' and would not meet FAA standards for RSAs; thus, does not meet the project purpose and need.

### 3.3.3 Geocell Reinforced Soil RSA

This alternative would construct the full RSA dimensions in AC 150/5300-13 by reinforcing the existing sand with a cellular confinement system (geocell) and would meet the purpose and need for the RSA. The sand in the geocells would be seeded to prevent the sandy soil from eroding and endangering the ability of the geocell to support an errant aircraft. This alternative would require continued maintenance because the vegetation growing in the RSA would need to be mowed regularly. This alternative was dismissed because it would continue to cause unacceptable safety problems due to perpetuating wildlife aviation hazards by having enhancing wildlife habitat adjacent to an active runway. The Gustavus Wildlife Hazard Management Plan (October 2004) includes a vegetation management plan whose purpose it is to reduce the amount of natural cover available to hazardous wildlife species at the Gustavus Airport. Thus, this alternative was dismissed from further consideration because it would maintain the presence of hazardous wildlife habitat at the airport.

### 3.3.4 RSA to Full Standards with Aggregate (gravel)

This alternative would construct the full RSA dimensions in AC 150/1500-13 and therefore it would meet the purpose and need. Sand would be removed and a 14-inch thick layer of aggregate base course would be placed within the RSA dimensions to support an errant aircraft. This alternative was dismissed because: 1) It is not a safe practice to construct gravel surfaces on airports that serve jet aircraft. Gravel is a hazard to jet aircraft because it can be ingested into jet engines on take-off. 2) The gravel RSA would attract avian fauna such as Canada geese, ducks, ravens, crows, jays, bald eagles, and magpies that frequent the Gustavus area. It would also eventually support the growth of grass on the side slopes, which would further the existing Gustavus Airport issues with wildlife hazards and potential bird strikes, as outlined in the Gustavus Airport Wildlife Hazard Management Plan. 3) This alternative is \$1.3 million dollars more than the Proposed Action. For these reasons, this alternative was dismissed from further consideration.

**Table 1: Comparison of Alternatives' Environmental Effects**

Resource Category	Potential Environmental Effects	
	Proposed Action	No-Action Alternative
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>No long term impacts.</li> <li>Minor short term impacts associated with construction.</li> </ul>	No change
<b>Coastal Zone</b>	<ul style="list-style-type: none"> <li>Loss of 125 linear feet of stream habitat.</li> </ul>	No change
<b>Compatible Land Use</b>	No change	No change
<b>Energy Supplies and Natural Resources</b>	No change	No change
<b>Environmental Justice and Social Impacts</b>	No change	No change
<b>Induced Socioeconomic Impacts</b>	<ul style="list-style-type: none"> <li>No long term impacts.</li> <li>Minor short term impacts associated with construction.</li> </ul>	No change
<b>Fish, Wildlife, and Plants</b>	<ul style="list-style-type: none"> <li>Loss of 125 linear feet of essential fish habitat (EFH) and stream habitat.</li> <li>Minor and temporary noise impacts include the temporary disturbance of birds, terrestrial mammals and other wildlife in areas adjacent to the Gustavus Airport.</li> </ul>	No change
<b>Floodplains</b>	<ul style="list-style-type: none"> <li>Decreased flooding events adjacent and upstream of airport.</li> <li>No 100-year floodplain data (United States Army Corps of Engineers, Floodplain Hazard Data). Based on hydraulic analysis (HEC-RAS) of the stream which runs adjacent and parallel to the airport, on its northeast side, its 100-yr flood water surface elevation is estimated to be 32.5 feet adjacent to the north end of the runway. The runway surface elevation near this point is 37 feet.</li> </ul>	Continued flooding adjacent and upstream of airport.
<b>Hazardous Materials, Pollution Prevention, and Solid Waste</b>	No environmental impairment.	No change
<b>Historical, Architectural, Archaeological, and Cultural Resources</b>	The Gustavus Airport Historic District (JUN-01093) is eligible for the National Register of Historic Places (NHRP) as an example of World War II (WWII) construction and the Civil Aeronautics Authority Administration (CAA) period following the war. The State Historic Preservation Officer (SHPO) concurred with a finding of adverse effect	No change

Resource Category	Potential Environmental Effects	
	Proposed Action	No-Action Alternative
	on December 13, 2011. A Memorandum of Agreement (MOA) was signed February 11, 2011 between FAA, SHPO and DOT&PF to resolve adverse effects.	
<b>Light Emissions and Visual Effects</b>	The proposed lengthening and widening of runway 11/29 would affect the proportionality of the existing runway. This change in proportionality would affect one of the District's character defining features (the runway). The project would have an adverse visual effect on the Historic District.	No change
<b>Department of Transportation, Section 4(f)</b>	<ul style="list-style-type: none"> <li>SHPO concurred with a finding of adverse effect on the Section 4(f) resource on December 13, 2011. A Section 4(f) Statement on the adverse effects to the Gustavus Airport Historic District (District; JUN-01093) was written to analyze impacts of the proposed action compared to other potential alternatives to this 4(f) resource. FAA and DOT&amp;PF determined that there are no feasible or prudent alternatives that avoid using or adversely affecting the Section 4(f) property. A MOA was signed February 11, 2011 between FAA, SHPO, and DOT&amp;PF to resolve adverse effects.</li> </ul>	No change
<b>Noise</b>	<ul style="list-style-type: none"> <li>No long-term noise impacts.</li> <li>Minor short term impacts associated with construction.</li> </ul>	No change
<b>Water Quality</b>	<ul style="list-style-type: none"> <li>Minor short term impacts associated with construction.</li> </ul>	No change
<b>Wetlands</b>	<ul style="list-style-type: none"> <li>Net loss of 125 linear feet of Waters of the U.S. (Stream)</li> <li>Fill in 0.44 acres of Wetlands.</li> <li>A total of impact to 1.07 acres Waters of the U.S.</li> </ul>	No change
<b>Construction Impacts</b>	<ul style="list-style-type: none"> <li>Temporary localized decrease in air quality during construction around project area and existing roads to and from the project.</li> <li>Direct impacts to uplands on airport property for use as staging areas.</li> <li>Water resource impacts include the temporary use of water from the former material site located on airport property for RSA compaction and dust control.</li> <li>Temporary increase in employment during construction.</li> <li>Temporary increase in income of local businesses</li> </ul>	None



Resource Category	Potential Environmental Effects	
	Proposed Action	No-Action Alternative
	<p>that provide support services during the construction period.</p> <ul style="list-style-type: none"> <li>Minor and temporary noise impacts include the temporary disturbance of birds, terrestrial mammals, and other wildlife in areas adjacent to the Gustavus Airport.</li> </ul>	
<b>Cumulative Impacts</b>	<ul style="list-style-type: none"> <li>Some temporary increase in employment as a result of the reasonably foreseeable Gustavus area projects.</li> <li>Some temporary increase in the income of local businesses as a result of the reasonably foreseeable Gustavus area projects.</li> <li>Moderate beneficial impacts on aquatic resources and EFH as a result of the Proposed Action, coupled with reasonably foreseeable Gustavus area drainage improvements.</li> <li>Minimal impacts to vegetation and wildlife habitat as a result of the Proposed Action and reasonably foreseeable Gustavus area projects.</li> <li>Minimal short-term direct and indirect water quality impacts during construction of the Proposed Action and the other reasonably foreseeable projects in the Gustavus area.</li> <li>A direct use of the 4(f) property would be mitigated through implementing the stipulations in the FAA, SHPO, and DOT&amp;PF MOA.</li> </ul>	No change
<b>Required Permits, Approvals, and Consultations</b>	<p>U.S. Army Corps of Engineers Section 404 Permit; Alaska Coastal Management Program Coastal Consistency Review; Section 401 Water Quality Certification; Alaska Pollutant Discharge Elimination System General Permit for Construction Activities; State Historic Preservation Office Section 106 consultation under the National Historic Preservation Act; Title 16 Fish Habitat Permit; and Temporary Water Use Permit or Asphalt Plant Permit depending on the Asphalt Stabilized Surfacing method (to be submitted by contractor).</p>	None

#### 4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter provides a description of the existing environmental, social, and economic setting of the area affected by the Proposed Action. It also presents a discussion of the potential impacts of the Proposed Action and the No-Action Alternative. FAA Order 5050.4B, and the FAA *Environmental Desk Reference for Airport Actions* (2007), provide direction on how to evaluate the impacts of a proposed federal airport project on specific environmental impact categories. This is an issues-based EA; that is, only those environmental impact categories where the project impacts were identified as an issue of potential concern are evaluated in detail.

The No Action and Proposed Action alternatives would not affect the following resources:

- **Coastal Barriers:** There are no Coastal Barriers located within Alaska. ([www.fws.gov/habitatconservation/coastal\\_barrier.htm](http://www.fws.gov/habitatconservation/coastal_barrier.htm)).
- **Farmland:** There is neither prime or unique farmland nor farmland of state or local importance in the project area ([www.ak.nrcs.usda.gov/technical/soils/soilslocal.html](http://www.ak.nrcs.usda.gov/technical/soils/soilslocal.html)).
- **Wild and Scenic Rivers:** There are no designated state or federal wild or scenic rivers in the project area.

Environmental consequences are described in terms of direct, indirect (secondary), and cumulative impacts. Indirect impacts are those that are caused by the action and occur later in time or are further removed in distance, but are still reasonably foreseeable. Both direct and indirect impacts are discussed in this chapter. Cumulative impacts are those that result from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions. Cumulative impacts for the Proposed Action are discussed in Section 4.16.

#### 4.1 Air Quality

The EPA has not classified Gustavus to be within an attainment, non-attainment or maintenance area for any National Ambient Air Quality Standard therefore is considered not classifiable.

Proposed Action: Long-term direct and indirect impacts to air quality would not result from the Proposed Action; no significant increase in aviation activity is anticipated or is expected for the Airport. For a description of short-term impacts to air quality due to construction activities, refer to Section 4.15.1. For a description of mitigation of short-term impact to air quality, refer to Section 5.

No-Action Alternative: Under the No-Action Alternative, there would be no change in air quality.

#### 4.2 Coastal Zone

The Gustavus Airport lies within the Alaska coastal zone and as such, the project would be subject to a review to ensure consistency with the Alaska Coastal Management Program (ACMP).

Since Gustavus is not located within a local coastal district, only statewide standards are applicable.

Proposed Action: A review of ACMP's 12 statewide standards showed that stream habitat, would have a minor direct impact but would still be consistent with statewide standards. Impacts to stream habitat include the loss of 125 linear feet of Stream due to the rerouting of the Stream around the northeast end of runway 11/29. DOT&PF, on behalf of FAA, has determined that the long-term effect of the project is beneficial for essential fish habitat (EFH). The improved stream habitat offsets the loss of approximately 125 linear feet of EFH. The improvements are:

- creation of new bars, near bank vegetation, meandering and complex form/habitat
- better water flow ensuring fish passage during low water flow events, and
- increased flood capacity.

ADF&G, USFWS, and NMFS accepted this determination on January 11, 2010 (see Appendix F, Agency Coordination)

Additionally, impacts are discussed in more detail as part of the formal coastal consistency review, included in Appendix A, as well as discussed in Section 4.6.3. The Proposed Action is not expected to have a substantial impact to any resources listed in the Statewide Standards.

No-Action Alternative: Under the No-Action, no direct or indirect impacts to coastal resources would occur and no coastal consistency review would be required.

#### **4.3 Compatible Land Use**

DOT&PF owns and controls the land within the airport property boundary (Figure 3) around the area of the Proposed Action. Other lands surrounding the airport property boundary are under control of the State of Alaska Department of Natural Resources (DNR). Land use adjacent to the airport includes a public school, residential areas, and light industrial facilities. Planning, platting and zoning were not addressed in the Gustavus Strategic Plan (Strategic Planning Committee, 2005), so land use practices are not regulated by local government.

FAA encourages a distance of at least 10,000 feet between solid waste facilities and runways that serve turboprop aircraft (FAA Advisory Circular 150/5200-33), however the existing permitted Gustavus Disposal and Recycling Center (DRC) is approximately 4,490 feet away from the nearest point on the runway. The City of Gustavus is planning on moving part or all of DRC functions to an area north of the airport off Wilson Road known as the 'Airport Triangle.' The Airport Triangle is within 6 miles of the airport. The City of Gustavus is also planning to construct a sewage disposal area within the Airport Triangle. The sewage disposal area would contain land spread treated sewage which would not attract birds, and FAA would be required to approve the disposal area before installation (Personal Communication, Berry, 2009). The cumulative impacts of the DRC are further discussed in Section 4.15.

Proposed Action: The Proposed Action would not result in a change in land use because proposed actions would occur on DOT&PF airport property and there would be no new objects on or off airport property that would pierce the obstruction zone.

No-Action Alternative: The No-Action Alternative would not result in changes to land use.

#### 4.4 Energy Supplies and Natural Resources

Electricity in Gustavus is provided by the Gustavus Electric Company, which operates the Falls Creek Hydroelectric Plant and diesel-powered generators capable of producing 800 kilowatts and 500 kilowatts of power respectively (Gustavus Electric Company, 2009; Alaska Department of Commerce, Community, and Economic Development [DCCED], 2009).

Approximately half of all year-round homes have individual water wells, septic tank systems and full plumbing. A community well with water treatment is also available. The school currently purchases water from the National Park Service (NPS). Drinking water wells for the DOT&PF maintenance shop and other airport facilities are located on the airport site. Outhouses are used at homes without septic systems (DCCED, 2009).

Natural resources used directly to construct the proposed project are sand and organic soils found on airport property.

*Proposed Action:* The Proposed Action would not increase power use or sanitary services needs. The Terminal Area Forecast (Appendix B) shows that there would be no increase in air traffic, and thus no increase in aircraft users, to the airport; therefore, there would be no increase in power use or sanitary services needs.

The proposed improvements are expected to use approximately 85,000 cubic yards of material. Materials used for the Proposed Action would be generated by the grading or excavation of the current surfaces so no additional material resources are necessary. Excess material of approximately 15,000 cubic yards would be disposed of in upland areas on site airport property.

Additionally, if AES is used for hardening the RSA and would be prepared, mixed, and dispersed by truck so no mobile batch plant would be required. If a hot mix sand asphalt is used to provide a stabilized RSA surface, a mobile batch plant would be required. Construction impacts related to temporary water use are discussed in Section 4.15.7, and temporary air quality impacts are discussed in Section 4.15.1

*No-Action Alternative:* Power use would remain at its current level, and no additional natural resources would be used.

#### 4.5 Environmental Justice and Social Impacts

##### 4.5.1 Environmental Justice Impacts

The 2000 census listed the Gustavus population to be 429 people. The population of the community consisted of 34 (8.2%) Alaska Native or part Native. The median household income was \$34,766, and the average per capita income was \$21,089. Of the 429 residents, 62 (14.6%) were found to be living below the poverty level (DCCED, 2009). Consultation with Tribes did not indicate subsistence resource uses (see section 4.6.3). According to the project archaeological report<sup>2</sup> the closest traditional use of

---

<sup>2</sup> Meitl, Sarah and Yarborough, Michael, "Historical Review for the Gustavus Airport RSA Improvements Project (No. 68287), Gustavus, Alaska

a subsistence resource was on Pleasant Island near the mouth of Strawberry Creek (hunting and berry picking).

*Proposed Action:* There may be minor temporary impacts from air quality emissions to the population of Gustavus during construction as discussed in Sections 4.15.1.

Gustavus is outside any EPA designated air quality attainment area and not subject to Alaska's State Implementation Plan (SIP) for air quality. Since the proposed project is not covered in a SIP and air quality impacts are minor and temporary there is no potential to disproportionately affect the air quality of low-income and minority residents in Gustavus.

Since the project would not result in increased air traffic there would be no long term noise impacts. There may be minor temporary impacts from construction noise to the population of Gustavus during construction as discussed 4.15.6.

There is also an adverse affect to a Historic resource as discussed in Section 4.9. However the combined percentage of low-income and minority persons in Gustavus is 22.4%<sup>3</sup>. Since the percentage of low-income and minority residents in Gustavus is less than 50% they are not disproportionately affected by adverse impacts to Historic resources.

Agency scoping identified measures (see section 4.6.3 for more details) to protect EFH (Appendix F); therefore, the Proposed Action is not anticipated to impact EFH. Water quality impacts would be temporary and minor as BMPs for erosion and sediment control during construction would be used. Since the percentage of low-income and minority residents in Gustavus is less than 50% they are not disproportionately affected by project impacts to water quality.

*No-Action Alternative:* The No-Action Alternative would not provide the safety enhancements proposed by this project. The No-Action Alternative would not result in any disproportionately high and adverse impacts to minority populations or low-income populations.

#### 4.5.2 Social Impacts

The proposed project was evaluated to determine if it would cause social impacts. The following facts are used in the evaluation:

- There is a school approximately 0.4 of a mile to the southwest of the proposed project.
- Also, there are no business or residential relocations that would result from the proposed project.
- The Gustavus climate is a temperate rain forest.
- The project is not expected to induce more air traffic or change traffic patterns.

*Proposed Action:* Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, defines the risks to children's safety that are attributable to products or substances that the child is likely to touch or ingest. Considering the expected rain and distance from construction activities

---

<sup>3</sup> 34 Alaska Natives and 62 low income residents is a total of 96 persons. 96 divided by 429 (total Gustavus population) yields 22.4% of the Gustavus population are minority and low income persons.

to the school there is no expected impact from temporary construction activities to air quality, water quality or noise impacts to children resulting from the project.

Since there are no relocations or changes to traffic patterns there would be no:

- division or disruption of established communities,
- changes in surface traffic patterns,
- disruption of planned development, or
- changes in employment.

*No-Action Alternative:* The No-Action Alternative would not provide the safety enhancements proposed by this project. The No-Action Alternative would not result in any increase in children's environmental health and safety risks.

#### 4.5.3 Induced Socioeconomic Impacts

Gustavus is considered to be the gateway to Glacier Bay National Park and Preserve, and the local economy is dependent on tourism activities and employment at the Glacier Bay National Park and Preserve. The Federal government is the largest employer in Gustavus, with the National Park Service (NPS) providing 36 full time positions with an additional 55 seasonal positions during the tourist season. Several other businesses related to tourism or which benefits from tourism exist in Gustavus. There are also several contractors and equipment leasing companies as well as eight retail businesses in the area (Strategic Planning Committee, 2005).

*Proposed Action:* No long-term induced socioeconomic impacts are expected. All work would be done within the airport boundary so no relocations or disruptions of businesses would occur. Short-term construction induced impacts are discussed in Section 4.15.3.

*No-Action Alternative:* The No-Action Alternative would not impact socioeconomic factors.

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

### 4.6.1 Avian Populations

Airport maintenance personnel are required by FAA regulations to constantly exercise measures to detract wildlife and birds from the property and to minimize obstructions such as trees to avoid safety issues for aircraft (Federal Aviation Regulations Part 139-Certification of Airports, Subpart D – Operations 139.337 Wildlife Hazard Management). Canada geese, ducks, ravens, crows, jays, bald eagles, and magpies frequent the Gustavus area (Strategic Planning Committee, 2005).

The USFWS Alaska Bald Eagle Nest Atlas reviewed on April 6, 2009 indicates there are no known bald eagle nests near the project. The nearest nest is approximately six miles from the project site (see Appendix C for bald eagle locations map).

*Proposed Action:* The Proposed Action would occur within the airport boundaries, and in close proximity to the runway. Although construction activities could result in short-term disturbance of birds in the immediate vicinity of the airport, all activity would occur in areas that are currently used for

airport operations. The Proposed Action would not affect bird populations because bird activities within the airport vicinity are actively discouraged and no bald eagle nests are located within 6 miles of the airport. Additionally, the shorter Stream length would allow for continuous water flow even during low water events therefore allowing for fish passage and thereby decreasing fish mortality which is a bird attractant. Due to the current activities associated with daily airport operations, it is anticipated that no adverse impacts to birds would result from the Proposed Action.

Mitigation for avoiding migrating bird populations and bald eagle activities during construction is discussed in Section 5. Noise impacts are discussed in Section 4.12 and 4.15.6.

No-Action Alternative: Vegetative clearing and other wildlife hazard management activities would continue to discourage bird and mammal activity on the airport property. However, stranded dying fish at low water events in the existing Stream would continue to be a bird attractant.

#### 4.6.2 Mammal Populations

The Gustavus area is home to moose, black bear, brown bear, wolves, coyotes, marten, and river otter. Airport fencing prevents such animals from accessing airport operations (Personal Communication, Pedersen, 2009). For this reason it is unusual for large mammals to frequent the airport property.

Proposed Action: Approximately 79 acres of upland on airport property would be impacted due to the Proposed Action. This habitat is not unique to the area and much of it is already disturbed. In addition, as noted above, airport fencing precludes larger mammals from using these upland areas. As such, no substantial impacts to mammals are anticipated. Short-term construction impacts to disturbed upland or upland habitat are discussed in Section 4.15.4.

Noise impacts are discussed in Section 4.12 and 4.15.6.

No-Action Alternative: Vegetative clearing and other wildlife hazard management activities would continue to discourage bird and mammal activity on the airport property.

#### 4.6.3 Fish Populations and Essential Fish Habitat

The ADF&G *Anadromous Waters Catalog and Atlas* identifies one unnamed stream, #114-23-10199, (Stream) which runs along the east side of runway 11/29 as being anadromous. The existing Stream alignment was excavated in 1940 and is primarily straight with two 90-degree bends. During summer months the Stream may dry and during the rainy season it can flood; however, stream level is most dependent on groundwater flows. This Stream provides rearing habitat for Coho salmon. Additionally, State personnel observed adult Coho salmon and Dolly Varden upstream of the airport that migrated through the area prior to spawning (DNR-OHMP, 2006). However, when the Stream water levels are low, fish can be stranded and die. See Appendix D for DNR-Office of Habitat Management and Permitting (OHMP) report. This Stream is therefore considered Essential Fish Habitat (EFH) under the Magnuson-Stevens Fisheries Conservation Management Act. An EFH Assessment was prepared and submitted to NMFS and can be found in Appendix E.

Water Quality, important to anadromous fish, is discussed in Section 4.13.

Proposed Action: The Proposed Action would require work below the ordinary high water of the Stream and Ditch; therefore, there would be direct impacts to aquatic resources and essential fish habitat. Approximately 543 linear feet of the Stream would be rerouted into a newly constructed 418 linear foot stream channel. The Proposed Action would cause a loss of approximately 125 linear feet of the Stream. Fish habitat would be improved because the new Stream would be constructed to have a more naturally formed stream habitat including bars, near bank vegetation, meandering and complex form/habitat and allowing continuous water flow therefore allowing for continuous fish passage thereby decreasing fish mortality.

DOT&PF, on behalf of FAA, has determined that there would be a temporary adverse effect on EFH from the proposed project; however, based on the design of the stream relocation, short construction time duration, and the mitigation measures proposed, the temporary impacts to EFH would not be substantial (Appendix E).

Additionally, DOT&PF on behalf of FAA has determined that the long-term effect of the project is beneficial for EFH. The improved stream habitat offsets the loss of approximately 125 linear feet of EFH. The shorter stream length would, effectively, steepen the gradient improving water flow ensuring fish passage even during low water flow events as well as increased flood capacity.

Title 16 Fish Habitat Permits from ADF&G would be required for this project, and can be found in Appendix A.

For a description of mitigation of impacts to fish populations and EFH, refer to Section 5.

No-Action Alternative: Under the No-Action Alternative, the Stream would continue to provide limited fish passage during low water conditions. No other impacts to fish or essential fish habitat are anticipated.

#### 4.6.4 Vegetation and Terrestrial Habitats

Vegetation in the Gustavus area is mostly a mosaic of young spruce, pine, and cottonwood forest; willow thickets; sweet gale; and wet meadows. In cleared areas there are dryer grassy meadows (Strategic Planning Committee, 2005). These terrestrial habitats are not unique to the area.

Most habitats on the airport property are either upland or disturbed upland (FAA, 1997). Generally, plant species present in undisturbed upland habitats are composed of fireweed, bluejoint grass, strawberry, willow, alder, Sitka spruce, and lodgepole pine. Within the area of proposed RSA expansion, fireweed, bluejoint grass, and strawberry are generally present.

Proposed Action: The Proposed Action would directly impact approximately 79 acres of previously disturbed and upland vegetation. None of the upland plant species impacted by the Proposed Action are unique to the area. Since only a small amount of locally common vegetation would be affected, no substantial direct or indirect impacts are anticipated. Short-term construction impacts to previously disturbed and upland vegetation are discussed in Section 4.15.4.

No-Action Alternative: Vegetative clearing activities would continue on the airport property.



#### 4.6.5 Federally-listed Endangered and Threatened Species

One threatened species, Stellar sea-lion (*Eumetopias jubatus*), and one endangered species, humpback whale (*Megaptera novaeangliae*) may occur in the Gustavus area but not close to the airport property (FAA, 1997). There are no major haul outs or rookeries for the Stellar sea-lion in the Gustavus area (NOAA, 1993).

Consultation with the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) indicates that no threatened, endangered or candidate species are present in the project area (Section 6.1.1 and Appendix F).

Proposed Action: The project would have no long-term or short term impacts on threatened and endangered species or candidate species. Concurrence from USFWS and NMFS are in Section 6.1.1 and Appendix F.

No-Action Alternative: The No-Action Alternative would not result in any impacts to threatened or endangered species.

#### 4.7 **Floodplains**

Gustavus does not participate in the National Flood Insurance Program, so there are no United States Federal Emergency Management Agency (US FEMA) maps available. USGS gage stations in the area have been installed on the Salmon River, Good Creek and Rink Creek, but only have been collecting data since 2009. There is no USGS generated flood data associated with these sites.

Based on hydraulic analysis (HEC-RAS) performed by DOT&PF materials section, the 100-yr flood water surface elevation in the Stream which runs adjacent and parallel to the airport, (on its northeast side), is estimated to be 32.5 ft. The runway surface elevation near this point is 37.80 ft, well above the 100-yr flow.

This same Stream has repeatedly caused flooding adjacent and upstream of the airport. Flooding adjacent of the airport included water nearly overtopping the stream banks, and flooding upstream of the airport included overflowing Wilson Road (Pedersen, Personal Communication, 2009).

Proposed Action: A small section of the Stream northeast of Runway 11/29 would be rerouted to allow for the RSA expansion. This rerouting would eliminate the two 90-degree bends which exacerbates the flooding. In order to address the flooding issue the new Stream alignment would be a two stage channel. The low flow stage accommodates geomorphic process which creates self formed stream features and associated habitats. The high flow stage would provide flood conveyance area with width and bank slopes sufficiently open for improved flood conveyance conditions (Inter Fluve, 2009). ADF&G indicated during scoping that the Stream rerouting and floodplain development would help alleviate the flood problem adjacent and upstream of the airport by allowing water to flow more easily (Section 6.1.2). The proposed new Stream length would also include an increased floodplain basin which would increase the flood capacity of the Stream channel (See Appendix E for floodplain details).

A portion of the Ditch southwest of Runway 11/29 would be rerouted to allow for the expansion of the RSA. The rerouting would increase the Ditch length by 85 linear feet which allows for better flood capacity. A culvert would be placed in the portion of the existing ditch channel that lies within the RSA footprint.

*No-Action Alternative:* There would continue to be flooding associated with the Stream adjacent and upstream of the airport.

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

The Gustavus Disposal and Recycling Center (DRC), owned and operated by the City of Gustavus, is permitted by the ADEC as a Class III solid waste facility. Under the current permit the DRC capacity has an annual average of less than 5 tons of domestic and commercial refuse per day. The DRC accepts separated scrap metal, aluminum and some non liquid household hazardous wastes. Organic material must be separated for composting. The DRC is located approximately 4,490 feet from the airport.

A review of data obtained from various databases was completed in February 2009 to determine if past activities on or adjacent to the project area pose a potential for environmental contamination. The databases used identify sites regulated by the U. S. Environmental Protection Agency (USEPA) and the Alaska Department of Environmental Conservation (ADEC). The search focused on sites found in the federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), Facility Index System/Facility Registry System (FINDS), and Formally Used Defense Site (FUDS) programs as well as the state Contaminated Sites, Leaking Underground Storage Tank (LUST), Underground Storage Tank (UST) and Spills Database (SPILLS) programs.

The search revealed that the airport property is likely to have environmental conditions, including probable soil and groundwater contamination. The results of the search and subsequent site visit and testing indicated the following:

- Several sites were identified and grouped by DEC as one site.
  - Numerous 55 gallon drums, batteries, and bags of various chemicals were identified in the vicinity of the airport (Ecology & Environment, 1992).
- A site visit by DOT&PF and ADEC staff narrowed the areas of concern and action to the following:
  - PCBs 18-25 parts per million (ppm) are not present at the end of Runway 11/29.
  - A concrete vault with unknown purpose or contents is located outside the Proposed Action limits off the end of runway 29.

*Proposed Action:* General waste generated from the project would be disposed of in accordance with local, state, and federal regulations.

The area surrounding the concrete vault was surveyed and no volatile organic compounds were detected. However, ditching in the area of the vault was eliminated from the design to avoid the potential to expose hazardous materials.

The proposed project would not be expected to affect the potential for hazardous material spills, pollution prevention, or solid waste generation in the long-term. Minimal short-term impacts for solid waste generation are expected from construction activities. Environmental Commitments regarding the disposal of construction related hazardous waste are included in Section 5.

*No-Action Alternative:* The No-Action Alternative would not impact hazardous materials, pollution prevention, or solid waste.

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

Cultural Resource Consultants LLC (CRC) conducted a Historical Review of the Gustavus Airport in December 2009 (Appendix H). The historical review included a detailed literature review, interviews, and site visit. The Alaska Heritage Resource Survey (AHRs) files, maintained at the Office of History and Archaeology (OHA), were also consulted. The Area of Potential Effect (APE) was defined as the airport's existing footprint, associated ditches and roads, and extends approximately 500 feet beyond the ditch area.

The survey and analysis resulted in a recommendation of a new Gustavus Airfield Historic District (GAHD or District)(JUN-01093) that was composed of the National Park Service's Gustavus Civilian Aeronautical Administration's (CAA) compound (JUN-01047) and airfield runways, road system, and ditches (ditches include the man made anadromous Stream #114-23-10199 ). The District has a period of significance from 1941 to 1958 and is eligible for the National Register of Historic Places (NRHP) under Criterion A for its association with the Gustavus CAA compound (JUN-01047). Confirmation of significance will be addressed in subsequent research stipulated under the Memorandum of Agreement (MOA) (Appendix F, page 247).

The District's contributing properties include the existing CAA Gustavus Compound Historic District (CAA Compound; JUN-01047), the Airfield Runways (JUN-01094), the Airfield Roads (JUN-01095), and the Airfield Ditches (JUN-01096). The runways, roads, and ditches are not individually eligible for the NRHP.

*Proposed Action:* The runways form the core and focus of the eligible GAHD. The runway's ability to contribute to the District relies upon their design, workmanship, and setting (the runways' proportionality) as well as their close association with other surrounding and associated elements of the historic landscape. The proposed lengthening and widening and subsequent hardening of the RSA for Runway 11/29 would substantially change its original design and workmanship. It would adversely affect the still apparent, 1940s and 1950s spatial design or proportionality of the airfield. The grading and filling components of the Proposed Action would also relocate the drainage ditches paralleling the runways and re-route other important sections of the ditch complex. While the Proposed Action would replace most of the ditches "in-kind" (including the fish stream rerouted near the end of runway 11), grading and filling the ditches and replacing one ditch into a culvert under the new RSA would affect the airfield's proportionality. The accumulation of changes to the GAHD contributing properties does result in an adverse effect on the District as a whole.

A Finding of Adverse Effect on the characteristics that qualify the Gustavus Airfield Historic District (JUN-01093) for inclusion in the NRHP was sent by the FAA to the SHPO on November 8, 2010. The SHPO concurred with this finding on December 13, 2010 (Appendix F) and agreed to develop an MOA to resolve the adverse effects. A key stipulation of the MOA is additional research to more thoroughly understand the historic context of the GAHD and its contributing features. The National Park Service (NPS) concurred with the finding of an adverse effect on January 4, 2011 and expressed interest in participating in the MOA. On January 18, in comments to the draft MOA, the NPS requested an expansion of the scope of the additional research to include features located outside the GAHD. DOT&PF expressed concern over the proposed expansion in scope in a phone conference with the NPS on January 27. DOT&PF, FAA, and SHPO had concluded that the mitigation should be kept at a level that corresponds to the scope and scale of the project's impact to the historic resource. On February 1, 2011, the NPS agreed that the scope of investigation under the MOA could be kept consistent with the scope and scale of the project.

*No-Action Alternative:* The No-Action Alternative would not result in any impacts to the historic, architectural, and cultural resources in the project area.

#### **4.10 Light Emissions and Visual Effects**

The airport currently has medium-intensity runway lights (MIRL) on Runway 11/29 and there are no runway lights on Runway 02/20.

*Proposed Action:* The Proposed Action would not change the existing lighting or add additional lighting.

The Proposed Action is visually compatible with the surrounding development and may potentially enhance the visual character of the area as current flooding issues may be alleviated. As discussed above under 4.9, the Proposed Action would affect the proportionality of the airfield.

*No-Action Alternative:* The No-Action Alternative would not change the existing lighting or visual conditions at the Gustavus Airport.

#### **4.11 Department of Transportation Act of 1966, Section 4(f) Included as Appendix K**

Section 4(f) of the Department of Transportation Act of 1966 provides that the Secretary of Transportation will not approve the use of land from a significant publicly-owned park, recreation area, wildlife or waterfowl refuge, or significant historic site unless there is no feasible or prudent alternative to using land from the property and the action includes all possible planning to minimize harm to the property from use, or the impact is determined to be "de minimis" impact.

The proposed project vicinity and relationship to the Section 4(f) property is illustrated in Appendix K, Figure 1, 2, and 3. The Section 4(f) property that would be adversely affected by the Proposed Action is the Gustavus Airfield Historic District or District (JUN-01093) as described above in Section 4.9. The District was recommended as eligible under Criterion A by Cultural Resource Consultants LLC (CRC) with a period of significance from 1941 to 1958. CRC's research found that the District represents the evolution in place of a "first-class" airfield and its continued use and maintenance is part of broader patterns in Alaska's history (Meitl and Yarborough, 2009).

As described in detail in Appendix K, DOT&PF evaluated previously identified alternatives to see if any of them met the purpose and need and avoided the Section 4(f) resources. Only the No Action alternative avoids the Section 4(f) resource.

*Proposed Action:* The Proposed Action would result in a direct use of one of the airfield runways, an adverse effect to the Historic District, by altering the proportionality of Runway 11/29 and changing portions of the ditch system. It has the least overall harm to the Section 4(f) resource (Appendix K; Table 5) and includes all possible planning to minimize harm. Measures to minimize harm to the resource have been incorporated including using a light gray chip seal to produce a similar color as existing conditions and replacing the majority of ditches “in-kind” with similar cross sections, also to maintain a similar appearance to the existing conditions.

DOT&PF coordinated with SHPO, tribal governments and the National Park Service relative to the adverse effect to the Section 4(f) Property which includes the NPS’s eligible CAA compound (JUN-1047) (Appendix K; Table 6). The SHPO and NPS entered into discussions with the FAA and DOT&PF regarding possible mitigation including the MOA. Because the NPS’s CAA compound would not be affected by the proposed project, they declined to be a signatory to the MOA but are going to remain reviewers in the subsequent report that would be prepared under the MOA.

FAA sent a Finding of Adverse Effect Letter and invitation to participate in an MOA to the Advisory Council on Historic Preservation (ACHP). ACHP responded to FAA with a no interest in participation in the Section 106 process of the proposed project.

Proposed mitigation for impacts to the District are stipulated in an executed MOA between FAA and SHPO (signed February 11, 2011). The MOA will result in a more thorough historic context and evaluation of the Gustavus Airfield Historic District. The resulting report is expected to establish a comprehensive basis to understand the significance of the District, its contributing features, and the influence of this historic event on the eventual development of Gustavus and Glacier Bay National Park and Preserve.

FAA sent the 4(f) Statement to the Department of the Interior. The Department of the Interior responded with no objection to the Section 4(f) Statement.

*EMAS and Lateral RSA Widening:* While this alternative was dismissed as not being feasible because the cost exceeds the financial cost threshold established in FAA Order 5200.9, it was considered prudent under Section 4(f). This alternative would require less reconfiguring of the ditch system because the unnamed Anadromous Stream located to the Northeast of runway 11 would not need to be relocated. On the other hand, this alternative would have a greater effect on the proportionality of the runways which are the core and focus of the district. With EMAS, the length to width ratio of the main runway would be 15.4 compared to the original runway’s ratio of 27. Under the Proposed Action, the length to width ratio would be 17. Also, due to the lighter-colored EMAS beds, this alternative would introduce a new type of design and workmanship that that is clearly different from the original runway.

Overall, there is not a substantive difference between the effects of the Proposed Action and effects of the EMAS and Lateral RSA Widening Alternative on the Section 4(f) resources. The Proposed Action

would have a marginally greater impact to the ditches and the EMAS and Lateral Widening would have a greater impact to the runways, a more important character defining feature of the 4(f) resource.

The No-Action Alternative is the avoidance alternative under Section 4(f). It would not affect the 4(f) property. However this alternative is not feasible or prudent because it does not meet the purpose and need of the project.

There is no feasible or prudent avoidance alternative.

#### **4.12 Noise**

There are three noise-sensitive areas located within one-quarter mile of the airport but within the airport boundary; the Gustavus School, associated teacher housing, and the Civil Aeronautics Administration Historic District. There are also several homes which are considered to be noise-sensitive areas located within one half mile of the airport outside the airport boundary. Airport noise contours have not been developed for the airport, and airport noise has not historically been a substantive issue in the area.

*Proposed Action:* This action would not affect the projected terminal area forecast (Appendix B). This project would not change existing flight tracks or result in larger or more frequent aircraft operations at the Gustavus Airport. No increase in aircraft-related noise is expected to result from the Proposed Action and no long term impacts to the current noise regime are anticipated.

For a description of short-term increases in noise related to construction activities, refer to Section 4.15.6.

*No-Action Alternative:* The No-Action Alternative would not result in any increases in noise.

#### **4.13 Water Quality**

There are no bodies of water in the project area on Alaska's List of Impaired or 303(d) Listed Water Bodies (DEC, 2008).

Drinking water wells for the DOT&PF maintenance shop and other airport facilities are located on the airport site. The nearest drinking water well to the proposed project area is approximately 680 feet. Drinking water for the Gustavus School is purchased from the NPS.

Currently flooding adjacent to and upstream of the airport is associated with the Stream because of the two 90° bends northeast of Runway end 11. This flooding causes erosion of the stream bank which increases turbidity.

*Proposed Action:* No adverse impacts to existing drinking water wells are expected.

The long term direct effects of the Proposed Action would reduce flooding which could indirectly result in less turbidity in the Stream. Construction of the rerouted stream and ditch would cause short-term direct and indirect water quality impacts. A Section 401 Water Quality Certification is required for this project, it would be submitted as part of the U.S. Army Corps of Engineers (USACE) Section 404 Permit

to be reviewed and approved concurrently (Appendix A). For more detailed information on water quality impacts due to construction see Section 4.15.7.

*No-Action Alternative:* The No-Action Alternative could result in continued flooding of the Stream which causes increased turbidity. No other water quality impacts would result from the No-Action Alternative.

#### **4.14 Wetlands and Other Waters of the United States**

The Clean Water Act (33 U.S.C. 1344) authorizes the USACE to exercise jurisdiction over Waters of the U.S., meaning deep-water aquatic habitats and special aquatic sites, which include wetlands. For the purposes of this EA, Waters of the U.S. are divided into wetlands and Other Waters of the U.S.

Wetlands are defined by the USACE as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE, 2007).

Other Waters of the U.S. are defined by the USACE as territorial seas with respect to the discharge of fill material, coastal and inland waters, lakes, rivers, and streams that are navigable waters of the U.S., interstate waters and their tributaries (USACE, 1987). Jurisdictional streams and ditches are listed in Table 2, below.

In 2010, a wetland delineation was completed for the Gustavus airport. The delineation covered approximately 272-acres within the airport property. The wetland delineation found approximately 4.81 acres of wetlands, 1 acre of streams (Waters of the U.S.), and 266.49 acres of upland or disturbed areas (Appendix I) within the airport's boundary.

*Proposed Action:* The Proposed Action would directly impact Waters of the U.S. (see Figures 5 through 8). Impacts are:

- Loss of 1.07 acres of Waters of the U.S.
- 4,050 cy of fill in Waters of the U.S.
- A net loss of 360 linear feet of jurisdictional ditch and a net loss of 125 linear feet anadromous stream for a total loss of 485 linear feet of jurisdictional waters of the US.
  - Approximately 543 linear feet of anadromous stream (Area E, Figure 8) and 625 linear feet of Ditch (Area A, Figure 6) would be rerouted.
  - Approximately 445 linear feet of existing culvert in the Ditch (Area C, Figure 8)) would be abandoned and filled.
  - Approximately 600 linear feet of culvert (see Figure 6) would be placed in the ditch near the end of runway 29.

A USACE Section 404 Permit would be required for this project and would be submitted to the USACE (Appendix A). Table 2 describes the estimated net impacts to Waters of the U.S.

Excess material would be placed in an upland area. This excess material site would be flagged to avoid inadvertent placement of fill in a wetland area.

**Table 2: Estimated Net Impacts to Waters of the United States**

Runway End	Project Description	Fill In Waters of the U.S. (cubic yards)	Loss (-) or Gain (+) of Waters of the U.S. Impacts (linear feet)	Loss (-) or Gain (+) of Waters of the U.S. (acres)
11	Stream: Loss of existing Unnamed Stream (#114-23-10199)	1400	-543	-0.24
11	Stream: Gain of realigned Unnamed Stream (#114-23-10199)		+418	+0.22
<b>Subtotal of Permanent Project Impacts to Unnamed Stream (#113-23-10199) [Stream], Loss (-) or Gain (+)</b>		<b>1400</b>	<b>-125</b>	<b>-0.02</b>
29	Ditch: Loss of existing Unnamed Ditch	2000	-625	-0.49
29	Ditch: Gain of realigned Unnamed Ditch		+710	+0.41
11	Ditch: Loss of existing Unnamed Ditch	650	-445	-0.34
<b>Subtotal of Permanent Project Impacts to Unnamed Ditch (Ditch), Loss (-) or Gain (+)</b>		<b>2650</b>	<b>-360</b>	<b>-0.42</b>
<b>Total Permanent Project Impacts, Loss (-) or Gain (+)</b>		<b>4050</b>	<b>-485</b>	<b>-0.44</b>

Executive Order 11990, *Protection of Wetlands*, requires that there be no practicable alternative to the Proposed Action, and that the project includes all practicable measures to minimize harm to wetlands. DOT&PF has analyzed the project and determined that there are no practicable alternatives having less impact on the aquatic ecosystem. The improvements were designed to avoid wetlands and Other Waters of the U.S. to the extent practical; however, due to the proximity of Other Waters of the U.S. to the airport, it is not possible to avoid them completely therefore, minimization of impacts and compensatory mitigation are the primary mitigation measures available to this project. The proposed project has unavoidable Other Waters of the U.S. impacts. The new *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule* emphasizes a “watershed approach” to include all aquatic resources (water bodies and wetlands) in proposed mitigation plans: “[T]his rule should apply to compensatory mitigation for all types of aquatic resources that can be impacted by activities authorized by Department of the Army permits, including streams and other open waters” (Federal Register, Rules and Regulations: Vol. 73, No. 70: April 10, 2008: 19596).



Keeping the watershed approach in mind, the measures to minimize harm to the traditional navigable waters and wetlands associated with this project would be mitigated on site. The proposed mitigation measures are listed in Section 5, and the Wetlands Avoidance and Minimization Analysis is attached in Appendix J.

It is expected on site mitigation would not entirely offset impacts to wetlands and Waters of the US. An in-lieu fee is proposed in the USACE permit application.

*No-Action Alternative:* The No-Action Alternative would not result in any additional adverse effects to wetland habitats.

#### **4.15 Construction Impacts**

##### Proposed Action:

Construction impacts involve short-term direct and/or indirect impacts. Construction impacts to various resource categories are discussed below.

##### 4.15.1 Air Quality

The Proposed Action would result in minor short-term, localized direct impacts to air quality from heavy construction equipment and, if the hot asphalt sand mix option is selected, an asphalt plant operating during the construction period. Diesel powered construction equipment including the power plant associated with the asphalt releases emissions and generates fugitive dust, which may result in slight degradations in air quality during the construction period. These direct effects are expected to be minor and short-term in duration and would be minimized through the use of Best Management Practices (BMPs), as discussed in Section 5.

##### 4.15.2 Energy Supplies and Natural Resources

If the AES surface hardening option is selected, the Proposed Action would require the temporary use of water from the former borrow site northeast of runway end 29 for RSA compaction. It is anticipated that 200,000 to 1,000,000 gallons would be needed and could be obtained entirely from the former borrow site. Permits for water withdrawal would be required from DNR. It is expected that impacts from water withdrawal would be temporary and minor during construction. The withdrawal site is not cataloged anadromous and fed by ground water. There would be increased turbidity during water withdrawal only.

##### 4.15.3 Induced Socioeconomic Impacts

Construction may result in a short-term increase in employment in Gustavus but would not cause stress on the area by an increase of population. Indirectly, construction may increase the income of local businesses that provide support services during the construction period.

Travel to Gustavus Airport would not be disrupted by the Proposed Action because construction would be scheduled around commercial scheduled flights and crosswind runway 2/20 would remain open as to not cause an airport or runway closure.

#### 4.15.4 Fish, Wildlife, and Plants

The Proposed Action would require temporary construction staging areas to be located on approximately 3.85 acres of previously disturbed and upland areas. These impacts are temporary and are anticipated to be minor due to the fact that the area is previously cleared airport use. Additionally, there would be no impact to mammals and birds habitat as they are presently discouraged or prevented from entry to the airport.

#### 4.15.5 Hazardous Materials, Pollution Prevention, and Solid Waste

Hazardous and solid waste generated by the contractor during construction activities would be removed and properly disposed of by contractor.

The Contractor would also be required to prepare and implement a Hazardous Materials Control Plan (HCMP) to address hazardous material that would be used or encountered during project construction and to detail measures to control discharges of such materials in the Waters of the U.S.

#### 4.15.6 Noise

The Proposed Action would result in minor short-term direct noise impacts increase during the construction phase of the project, due to heavy equipment operations. No indirect noise impacts are anticipated as a result of construction.

#### 4.15.7 Water Quality

The Proposed Action would result in the temporary degradation of water quality from sedimentation due to the rerouting of the stream and ditch. The contractor would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with a DOT&PF Erosion and Sediment Control Plan (ESCP). The contractor would also follow Best Management Practices (BMPs) for erosion and sediment control to minimize the introduction of suspended sediment in the water column. The contractor would be required to follow an approved HCMP. These plans would detail erosion and siltation control measures and other pollution prevention measures that would be used during project construction to minimize water quality impacts. Water would be needed for compaction of the RSA during construction of the AES surface hardening option which would be obtained from the former material site northeast of runway end 29 on airport property. This temporary water withdrawal would require a Temporary Water Use Permit from the DNR, Division of Mining Land and Water, which would be submitted by the contractor.

A more detailed discussion of mitigation measures related to water quality is included in Appendix E and the Title 16 Fish Habitat Permits and Section 404/401 Permit of Appendix A.

### **4.16 Cumulative Impacts**

Cumulative impacts are those that result from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from several individually minor impacts which may collectively be substantial over time (40 CFR 1508.7).

Cumulative impacts are not discussed for the No-Action Alternative since this alternative would not be expected to change existing conditions. Table 2 describes projects that were considered during the cumulative impact analysis.

**Table 3: Projects Considered for Cumulative Impact Analysis**

Project	Description
<b><i>Past - Completed Projects</i></b>	
Boat Harbor Improvements Projects	Replacements of the Salmon River boat launch ramp and barge landing.
Gustavus Causeway Replacement	Replace the trestle / dock facility in Gustavus.
Gustavus Ferry Terminal Project	Add a new Alaska Marine Highway System ferry terminal to the new Gustavus dock.
Various Airport Improvements	Rehabilitate runway, airport perimeter fencing, apron expansion, and runway resurfacing.
Falls Creek Hydroelectric Project	River facility consisting of a diversion dam, powerhouse with turbine/generator, 10,000 feet of water pipeline, 3 miles of access and service roads and 5 miles of interconnect transmission line.
<b><i>Reasonably Foreseeable - Projects in Planning or Funding is Being Sought</i></b>	
Wilson Road/Rink Creek Road Culvert Replacement Project	Replace 4 undersized culverts with 1 adequately sized culvert.
Bridge and Culvert Replacement	Replace Rink Creek Bridge and culverts under Good River Road.
Transient Vessel Mooring Facility	Build a breakwater float and timber mooring float at the small boat harbor connected to the new dock.
Disposal and Recycling Center (DRC) Site Relocation	Part or all of DRC functions would be relocated to an area north of the airport off Wilson Road known as the 'Airport Triangle.' Also in planning is the creation of a sewage disposal area within the Airport Triangle.

4.16.1 Induced Socioeconomic Impacts

The Proposed Action may result in a short-term increase in employment in Gustavus. Indirectly construction may increase the income of local businesses because of increased use. The cumulative effect of the increase in employment due to this project and other projects in Gustavus is expected to be minimal.

#### 4.16.2 Fish, Wildlife, and Plants

The cumulative impacts of the Proposed Action, Wilson Road/Rink Creek Road Culvert Replacement, and Bridge and Culvert Replacement projects would be moderate for aquatic resources and EFH by increasing fish passage and decreasing flooding events. The cumulative impact to aquatic resources and essential fish habitat in relation to other projects would be minimal because other projects involve different waterbodies, which all flow into the Icy Strait as does the Stream, and/or take place during a different time period.

The cumulative impact on vegetation and wildlife habitat would be minimal because much of the project area is previously cleared or disturbed upland where wildlife activities are actively discouraged and the other projects do not take place directly adjacent to the airport and/or during construction of the Proposed Action. Additionally the vegetation is not unique to the area and only affects a minimal amount of this upland vegetative type.

#### 4.16.3 Department of Transportation, Section 4(f)

The cumulative impacts of the Proposed Action, when combined with past, present, and reasonably foreseeable actions, on the Section 4(f) property would be minimal because all possible measures to minimize impacts to the 4(f) property have been taken. Through design, the visual effect of the RSA expansion has been lessened to look similar to its current surface. Also, an MOA has been developed that stipulates a report containing a more thorough historic context and evaluation would be completed within four years of MOA execution.

#### 4.16.4 Water Quality

The cumulative impacts of the Proposed Action and the Wilson Road/Rink Creek Road Culvert Replacement and Bridge and Culvert Replacement projects could improve water quality because of decreased flooding events with the placement of culverts and the straightening of the Stream. The construction of all the in water projects both directly associated with the Stream or Ditch and with other waterbodies, which all flow into the Icy Strait as does the Stream and Ditch, would cause minimal short-term direct and indirect water quality impacts.

## 5.0 ENVIRONMENTAL COMMITMENTS AND MITIGATION

The following additional measures have been identified and incorporated into the project to reduce potential adverse environmental effects.

**Table 4: Environmental Commitments and Mitigation**

Resource Category	Mitigation Measure or Environmental Commitment
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>Contractors would follow BMPs to reduce fugitive dust and exhaust emissions from the construction vehicles.</li> <li>If the hot mix hardening option is selected, the asphalt plant would be located on the airport property away from receptors.</li> </ul>
<b>Fish, Wildlife and Plants</b>	<ul style="list-style-type: none"> <li>Adherence to the USFWS recommended vegetation clearing window (April 15 to July 15) to avoid nesting migratory birds.</li> <li>If bald eagle activities are observed during the survey DOT&amp;PF would follow the National Bald Eagle Management Guidelines that describe USFWS recommendations for compliance with the Bald Eagle Protection Act.</li> <li>Contractor would ensure the survival of fish in the existing stream by removing and placing them downstream of the construction area.</li> <li>The in Stream work would be timed to minimize impacts to fish (work to be completed between June 30 and August 30). BMPs would be used for work in the Ditch.</li> <li>A professional with expertise in stream hydraulics and fish habitat restoration would be onsite to monitor and record construction activities.</li> <li>New Stream would be developed to allow for continuous flow even during low water levels thus allowing continuous fish passage and decreasing fish fatalities.</li> </ul>
<b>Floodplains</b>	<ul style="list-style-type: none"> <li>Stream hydraulic capacity would be increased to help alleviate flooding adjacent and upstream of airport.</li> </ul>
<b>Hazardous Materials, Pollution Prevention, and Solid Waste</b>	<ul style="list-style-type: none"> <li>Contractor is required to remove all hazardous materials and solid waste generated by construction activities.</li> <li>Contractor would be required to submit and have approved a Hazardous Materials Control Plan (HCMP) prior to construction. Construction will be conducted in accordance with the approved HCMP.</li> </ul>
<b>Historic, Architectural, Archeological, and Cultural Resources, DOT Section 4(f) properties</b>	<ul style="list-style-type: none"> <li>Excess sand excavated from the project would be used as a top coat in the chip seal to lessen the visual impacts and minimize impacts to the character defining features of the RSA expansion on the District. Also, as part of the stipulations of the MOA, a historic context and evaluation of the District would be completed within four years of the MOA execution on February 11, 2011.</li> <li>The Contractor would cease operations in the area and notify the DOT&amp;PF on site Engineer and FAA if prehistoric artifacts, burials, dwelling site remains, or paleontological remains are encountered. Work would not continue in the area until so directed by the Engineer.</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>Construction equipment would be equipped with mufflers that meet the minimum original equipment manufacturer specifications to reduce noise.</li> </ul>
<b>Water Quality</b>	<ul style="list-style-type: none"> <li>Side slopes of the relocated Stream would be stabilized with best management practices detailed with in SWPP allowing for rapid re-growth of vegetation. Slopes would use organic matter salvaged during excavation to the extent practicable</li> <li>Contractor would follow BMPs and the ESCP and develop a SWPPP.</li> </ul>
<b>Wetlands and Other Waters of the U.S.</b>	<ul style="list-style-type: none"> <li>Disposal site would be flagged to avoid inadvertent wetland fill.</li> <li>All work would be conducted in accordance with permit stipulations.</li> <li>The new Stream would have improved flood conveyance conditions.</li> <li>The banks would be vegetated with native plant species and would include placement of organic matter salvaged during excavation.</li> <li>If any stream bank stabilization is required (other than replacement of sidecast organics) Contractor would use only certified 100% weed-free native seed mix</li> </ul>

Resource Category	Mitigation Measure or Environmental Commitment
	<p>or mats. This reduces the chance of invasive non-native plants from quickly destroying any natural riparian vegetation, and reducing the quality of riparian and in-stream habitat.</p> <ul style="list-style-type: none"><li>• The Contractor would be required to rinse equipment tracks, wheels, and under carriages off-site, removing any soil or plant fragments. This reduces the danger of transporting weed seeds or other propagules to the project site.</li><li>• The new Stream reach would improve fish habitat by providing a more naturally formed stream habitat which includes bars, near bank vegetation, meandering and complex habitat.</li><li>• During construction the Contractor would use an approved method to allow continuous flow of the stream and ditch.</li></ul>

**6.0 COMMENTS AND COORDINATION**

Public and Agency Scoping began in February 2008 and continued through August 2009. A summary of the comments received during scoping and public / agency review of the EA follows. To view comments in their entirety see Appendix F)

**Table 5: Agency Scoping**

<b>Agency Contacted</b>	<b>No Response</b>	<b>Comment</b>	<b>Correspondence Attached in Appendix F</b>
Alaska Department of Environmental Conservation	X		
Alaska Department of Fish and Game		X	Yes
Alaska Department of Natural Resources, Division of Mining, Land, and Water		X	Yes
Alaska Department of Natural Resources, Division of Coastal and Ocean Management	X		
Alaska Department of Natural Resources, State Historic Preservation Office		X	Yes
Central Council of Tlingit and Haida Indian Tribes of Alaska	X		
Sealaska Corporation	X		
Sealaska Heritage Institute		X	Yes
Hoonah Indian Association	X		
Huna Totem Corporation	X		
City of Gustavus		X	Yes
National Marine Fisheries Service		X	Yes
U.S. Fish and Wildlife Service		X	Yes
U.S. Environmental Protection Agency	X		
U.S. Army Corps of Engineers		X	Yes
National Park Service		X	Yes

## 6.1 Coordination and Consultation with Agencies and Tribes

A scoping letter was sent to agencies on February 26, 2008 and a memorandum was sent to DNR-Division of Mining Land and Water on March 4, 2009. Copies of agency correspondence received during scoping are located in Appendix F. The following summarizes agency comments received during scoping.

### 6.1.1 Federal Agencies

#### **National Marine Fisheries Service**

##### EFH Comments

- Include a professional with expertise in stream hydraulics and fish habitat restoration onsite to monitor and record stream conditions during construction and to recommend construction modifications to protect EFH.
- Follow the ADF&G reduced the construction timing window of September 1<sup>st</sup>, instead of September 15, which would allow construction-generated stream sediment to settle before opening the new channel for fish passage, further protecting EFH.
- If any stream bank stabilization is required (other than replacement of sidecast organics) use only certified 100% weed-free native seed mix or mats. Invasive non-native plants can quickly destroy any natural riparian vegetation, and reduce the quality of riparian and in-stream habitat.
- To avoid introduction of invasive plants, please require the contractor to carefully rinse equipment tracks, wheels, and undercarriages off-site, removing any soil or plant fragments. This reduces the danger of transporting weed seeds or other propagules to the project site.

##### Section 7 Consultation

- If DOT&PF has made a determination of no effect no communication with NMFS is necessary.

*Response: NMFS comments on EFH are included in the Environmental Commitments in Section 5 and EFH Assessment in Appendix E. DOT&PF had reviewed the NMFS web page for threatened and endangered species; the project is approximately two miles from Icy Passage where threatened and endangered marine mammal species may be found (NOAA, 2009). Because of the location of the project, DOT&PF concluded that the project would have no effect on threatened and endangered marine mammals under NMFS jurisdiction. NMFS concurred no communication is required if DOT&PF makes a "no effect" determination. NMFS concurrence is included in Appendix F.*

#### **U.S. Fish and Wildlife Service**

##### EFH Comments

- The Stream (#114-23-10199) is used for coho salmon spawning. The Ditch provides rearing habitat for coho salmon. Recommend that all impacted streams and ditches be checked for spawning habitat. If spawning or rearing habitat is impacted, recommend that it be restored or mitigated if lost. Prefer on-site mitigation rather than in-lieu fees. USFWS referred to the National Bald Eagle Management Guidelines for how to manage Bald Eagles.



- Include an onsite construction monitor with expertise in stream hydraulics and fish habitat restoration as a conservation measure.

#### Section 7 Consultation

- There are no species listed under the Endangered Species Act as threatened or endangered within the jurisdiction of the Fish and Wildlife Service in Southeast Alaska.
- One candidate species, the Kittlitz's murrelet, uses waters from Thomas Bay near Petersburg. USFWS expects that the project would not affect this species.

*Response: USFWS comment on EFH is included in the Environmental Commitments in Section 5 and EFH Assessment in Appendix E. A fish survey was completed (Section 4.6.3 and Appendix D). Refer to Section 5 and Appendix E for mitigation and the EFH Assessment respectively. No bald eagles would be impacted from the Proposed Action, refer to Section 4.6.1 for a more detailed discussion.*

#### **U.S. Army Corps of Engineers**

Several of the proposed activities may require a permit. The activities include, but aren't limited to, the rerouting of the anadromous stream and the ditch. If fill would be placed in wetlands or waters of the U.S., a permit would be required.

*Response: Permits for the Stream and Ditch rerouting were submitted, permit applications are contained in Appendix A.*

#### **National Park Service**

On January 4, 2011, the National Park Service (NPS) responded to FAA with a concurrence to the Finding of Adverse Effect and agreement to participate in a MOA. On January 18, 2011 NPS commented on the MOA and requested expanding the scope of additional research to include features in the Gustavus area located outside the District Boundary and investigation of the influence of the airport on the development of Gustavus and Glacier Bay National Park and Preserve.

*Response: On January 27, 2011 DOT&PF contacted NPS and expressed concern over the scope and extent of NPS's comments and that the mitigation should be kept at a level that corresponds to the scope and scale of the project and level of impacts to the resource. On February 1, 2011 NPS did not object with desire of DOT&PF and FAA to keep the scope of investigation consistent with scope and scale of the project.*

#### 6.1.2 State Agencies

##### **Alaska Department of Natural Resources-Division of Mining, Land and Water**

- A portion of the project is on State land managed by DNR-MLW. Issuance of an easement could make this project compatible with the designation, classification and management intent for the land.

*Response: An easement is not needed because the project area no longer includes the abandoned material site. All work would occur on airport property.*

**Alaska Department of Natural Resources-Division of Parks and Recreation-State Historic Preservation Officer**

- On April 16, 2010 DOT&PF initiated consultation with SHPO
- On April 14, 2010 DOT&PF sent a Finding of No Adverse Effect Letter to SHPO. On May 18, 2010 FAA sent a Finding of Adverse Effect Letter and invitation to participate in an MOA to SHPO.

*Response: On May 18, 2010 SHPO responded to DOT&PF with a non-concurrence to the Finding of No Adverse Effect. On November 8, 2010, FAA sent a Finding of Adverse Effect Letter to SHPO. SHPO concurred with that finding on December 13, 2010 and agreed to participate in an MOA to mitigate the adverse effects to the Gustavus Airfield Historic District. SHPO signed the MOA on February 11, 2011*

**Alaska Department of Natural Resources-Office of Habitat Management and Permitting (now the Alaska Department of Fish and Game, Habitat Division)**

- Approximately 50 feet upstream from the confluence with the Stream, the Ditch becomes densely vegetated and likely impassable by fish. Within the 50 feet, the Ditch contains stagnant water, has a muddy bottom substrate, and is unlikely to provide anadromous fish habitat. Prefer a perched culvert or a design to prohibit fish passage upstream within the Ditch. The Stream rerouting and floodplain development would help alleviate the flood problem adjacent and upstream of the airport by allowing water to flow more easily. DNR-OHMP supports the stream rerouting.
- Fish Habitat Permits would be required for rerouting the Stream, altering the streambank to fill the existing ditch, and breaching the streambank during construction of the new Ditch. In-water work should be done between; July 1 – September 1 (revised from September 15 by ADF&G in a meeting on January 6, 2010) to avoid fish migration or eggs and alevins in the gravel. To protect fish and fish habitat during construction DNR-OHMP may require filling the existing ditch beginning at the uppermost point and working downstream to allow fish escapement, and complete construction of the new Ditch before breaching the streambank to connect to the Stream. Additionally, fish in the Ditch are to be captured and released downstream prior to filling it, identification of species isn't necessary.
- The existing Ditch is thickly vegetated, has low and ephemeral flows, and its confluence with the cataloged anadromous stream (Stream No. 114-23-10199) is mostly backwatered by the stream itself. Anadromous fish habitat conditions are not favorable for rearing juveniles in the existing ditch, and ADF&G has only observed three-spine stickleback near the downstream-most culvert. Given the current RSA design to use the existing Ditch and considering the fish habitat conditions, DOT&PF does not need to screen the existing Ditch to prevent fish access.
- ADF&G reduced the in-water construction timing window to July 1 to September 1 to avoid interrupting the adult coho return. ADF&G suggests retaining an environmental compliance monitor onsite during construction. ADF&G supports using certified weed-free native seed mix or mats during re-vegetation of the Stream.

*Response: ADF&G comments on EFH are included in the Environmental Commitments in Section 5 and EFH Assessment in Appendix E. Fish Habitat Permits have been submitted to ADF&G and applications are contained in Appendix A. Essential Fish Habitat Assessment for the stream has been prepared and is contained in Appendix D. The Proposed Action no longer includes work in the fish bearing portion of the Ditch. See Section 5 for mitigation and environmental commitments.*

#### 6.1.3 Local Government

##### **City of Gustavus**

The project would improve safety for the airport and possibly create temporary jobs for residents of Gustavus. Residents are reluctant to have more revolving lights installed at the airport. One resident mentioned a power line which crosses the Ditch would need attention and may be either rerouted or placed underground during construction.

The City of Gustavus wishes to coordinate their Wilson/Rink Creek Road culvert replacement project with the Proposed Action to ensure a smooth transition of water flow from the gravel pit area into the Stream. They also would need the expertise of DOT&PF to help assure this salmon rearing stream is handled in an appropriate fashion.

If additional material is needed the State gravel pit or the material site referred to as Lake Gustavus would be suitable. If an asphalt batch plant is necessary the community prefers it be sited in the far northwestern or southeastern areas to minimize odor impacts to residents.

*Response: The Proposed Action would not change or add additional lighting to the airport. There are no power lines that would be impacted as a result of this project (Personal Communication, Vanderzanden, 2009). DOT&PF would work with the City of Gustavus if possible on the Wilson/Rink Creek Road culvert replacement project. If an asphalt plant is required, it would be located on the airport property away from receptors.*

#### 6.1.4 Tribal Government

##### **Sealaska Heritage Institute**

Sealaska Heritage Institute requested a copy of the final Cultural Resources Consultants 'Historical Review for the Gustavus Airport RSA Improvements Project (No. 68287), Gustavus, Alaska' report.

*Response: DOT&PF will send a copy of the finalized report.*

## **6.2 Public Scoping**

Public scoping efforts included an advertisement in the State of Alaska Online Public Notice Register on March 16, 2009 (Appendix I). The public notice indicated how to submit comments or request a public meeting. No comments from the public were received.

A notice of availability of the draft EA as well as an electronically available version of the draft EA and appendices were posted to the State of Alaska Online Public Notice Register on March 15, 2011. The notices indicated how to submit comments or request a public meeting. Because a member of the public pointed out the EA figures were not accessible on the website, a second public meeting notice and comment period ended on May 3, 2011. Two public comments were received, one by e-mail and the

other by phone. Appendix F includes the detailed public comments and DOT&PF responses. The following summarizes the comments received from the public during scoping and DOT&PF responses:

- Clear maps and illustrations need to be shown depicting the scale and scope of proposed action.

*Response: Figures are available on the project website and the comment period has been extended to May 3<sup>rd</sup>.*

- How will the runway construction change the view shed, reduce bird and moose habitat, provide more weed habitat, and change the stream around the existing airport?

*Response: The proposed project would expand the RSA around runway 11/29 only. The proposed action would clear for the stream realignment and outside of the airport fence near the end of runway 29. Cumulative impacts are discussed in Section 4.16. The impacts to wildlife as a result of the proposed action would be minimal. A 100% weed-free native seed mix would be used and the contractor would be required to rinse equipment tracks, wheels, and under carriages off-site to remove soil or plant fragments to prevent noxious weeds.*

- What will be the added effects of additional lighting?

*Response: The proposed action does not include additional lighting.*

- What is the justification of need?

*Response: The proposed action would comply with FAR Part 139 Airport certification and FAA Standards as per advisory circular 150/5300-13, Design Standards for Airports for Design Group C3.*

- Have there been any incidents pertaining to aircraft overshooting, veering off, or undershooting the existing runways?

*Response: Included an outline of accident reports issued by the NTSB for aircraft accidents at the Gustavus Airport.*

- What are the project impacts to the fence and road on the 29 end of the runway, southwest of the runway, or east of the runway where it crosses the creek?

*Response: Improvements stop short of the fence and would have no impact on either the fence or the road located outside the fence. Improvements will not impact the fence or road southwest of the runway or east of the runway where it crossed the creek.*

- Would like to know the precise location of the concrete vault mentioned in the EA.

*Response: A figure depicting the location was provided.*

- What is happening with the Gustavus DRC?

*Response: The status of the Gustavus DRC is described in the EA and the contact at the Gustavus DRC is referenced in the EA.*

**7.0 LIST OF PREPARERS**

**Table 6: List of Preparers**

Name	Affiliation/Expertise Applied to Document	Profession
<b>Project Development and Supervision</b>		
Jane Gendron Carl Schrader (retired)	DOT&PF Regional Environmental Coordinator	Environmental Impact Analyst
Jim Scholl	DOT&PF Project Environmental Analyst	Environmental Impact Analyst
Chuck Tripp, P.E.	DOT&PF Project Manager	Civil Engineer
Laurie Mulcahy	DOT&PF HQ Environmental Program Manager	Environmental Impact Analyst Manager
Michael Kell	DOT&PF Environmental Analyst/Archaeology	Environmental Impact Analyst/Archaeology/History
<b>Text and Organization of EA</b>		
Kristen Hansen	DOWL HKM Environmental Lead/EA Review	Environmental Manager
Ananda Jenkins	DOWL HKM Primary Author of EA and Research	Environmental Specialist
Kacy Hillman	DOWL HKM Co-Author of EA and Research	Environmental Specialist
Emily Creely	DOWL HKM Research/EA Review	Environmental Specialist
Brandie Hofmeister, P.G.	DOWL HKM EA Review	Environmental Specialist
Ryan Cooper	DOWL HKM Wetlands Report Author	Environmental Specialist
Brian O'Quinn	DOWL HKM Figures	AutoCad Technician
Michael Yarborough	CRC Historical Resource Report Lead/ Reviewer	Archaeologist
Sarah Meitl	CRC Primary Author of Historical Resource Report	Archaeologist
Dan Miller	Inter-Fluve Primary Stream Designer	Biologist
Mark Sogge	Inter-Fluve Habitat Analyst	Fisheries Biologist

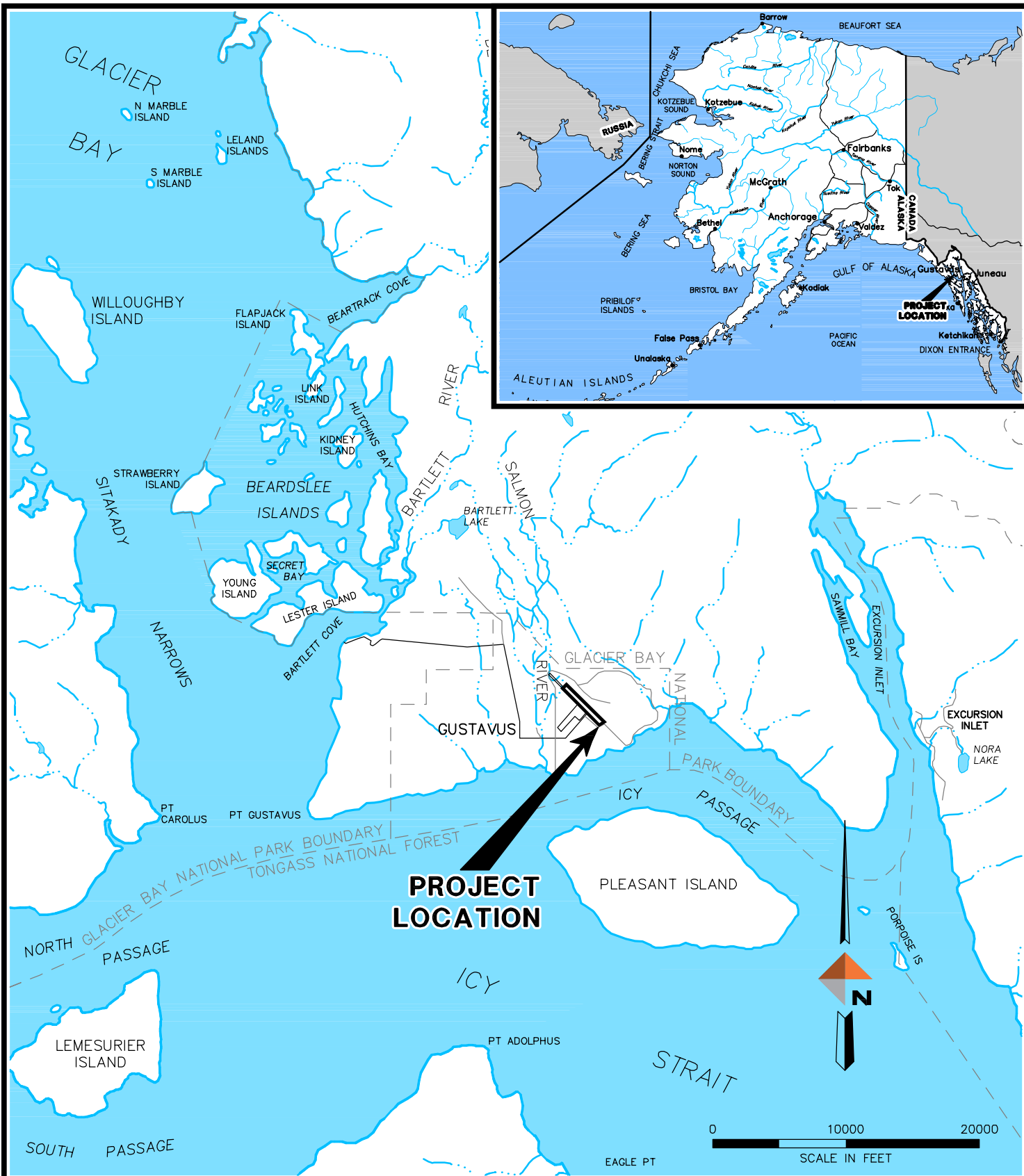
## 8.0 REFERENCES

- Alaska Department of Fish & Game. 2009. Alaska Department of Fish & Game, Wildlife Division. Dude Creek Critical Habitat Area. [http://wildlife.alaska.gov/index.cfm?adfg=refuge.dude\\_creek](http://wildlife.alaska.gov/index.cfm?adfg=refuge.dude_creek). Accessed on February 26, 2009.
- Alaska Department of Environmental Conservation. 2008. Integrated Water Quality Monitoring and Assessment Report-Alaska List of Impaired or 303(d) Listed Waterbodies. Accessed on April 21, 2009.
- ADNR-OHMP. 2006. Memorandum: Gustavus Gravel Pits and Airport Fish Sampling Trip Report. October 27, 2006.
- Berry, Paul. 2009. Personal Communication between Paul Berry, Gustavus Disposal and Recycling Center Manager, and Ananda Jenkins, DOWL HKM, on March 11, 2009.
- DOT&PF, 2008. Southeast Region Aviation System Plan, Final Report. Prepared by DOWL Engineers. September 2008.
- FAA. 2011. Section 4(f) Statement. Prepared by DOT&PF. February 2011.
- DCCED. 2009. Alaska Division of Community and Regional Affairs. *Gustavus 2000 Population and Housing Characteristics*. [http://www.dced.state.ak.us/dca/commdb/CF\\_BLOCK.cfm](http://www.dced.state.ak.us/dca/commdb/CF_BLOCK.cfm). Accessed on February 3, 2009.
- Ecology & Environment. 1992. Environmental Compliance Investigation Report for the Gustavus FAA Station, Gustavus, Alaska, Contract No. DTFA04 – 90 – C 20014, Task Order No. 10. February 1992.
- FAA. 1997. Resource Inventories, Aquatic Habitat Types and Values, Gustavus Airport. <http://www.alaska.faa.gov/fnrc/Airports/gustavus.htm>. Accessed on February 10, 2009.
- FAA & USDA. July 2005. Wildlife Hazard Management at Airports, A Manual for Airport Personnel. [http://wildlife.pr.erau.edu/EnglishManual/2005\\_FAA\\_Manual\\_complete.pdf](http://wildlife.pr.erau.edu/EnglishManual/2005_FAA_Manual_complete.pdf). Accessed on February 26, 2009.
- Gustavus Electric Company. 2009. Falls Creek Hydroelectric Project. [http://www.gustavuselectric.com/index.php?option=com\\_content&task=view&id=13&Itemid=26](http://www.gustavuselectric.com/index.php?option=com_content&task=view&id=13&Itemid=26). Accessed on December 9, 2009.
- NOAA. 2009. Protected Resources Division. <http://www.fakr.noaa.gov/protectedresources/>. Accessed on February 26, 2009.
- Pedersen, Michael. 2009. Personal Communication between Michael Pedersen, DOT&PF Airport Manager, and Ananda Jenkins, DOWL HKM, on March 2, 2009.
- Pedersen, Michael. 2009. Personal Communication between Michael Pedersen, DOT&PF Airport Manager, and Ananda Jenkins, DOWL HKM, on August 12, 2009.

- Strategic Planning Committee. May 2005. Gustavus Strategic Plan 2005, Protecting and Planning Our Future. Gustavus City Council, Gustavus, AK.
- USACE. 1987. Corps of Engineers Wetlands Delineation Manual, January 1987 – Final Report.
- USACE. 2007. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0), September 2007.
- USACE. 2009. Floodplain Hazard Data for Gustavus.  
[http://www.poa.usace.army.mil/en/cw/fld\\_haz/gustavus.htm](http://www.poa.usace.army.mil/en/cw/fld_haz/gustavus.htm). Accessed on February 4, 2009.
- U.S. FEMA. *FEMA Flood Maps, Map Search*. <https://hazards.fema.gov/wps/portal/mapviewer>. Accessed on February 4, 2009.
- U.S. FEMA. *Federal Emergency Management Agency, Community Status Book Report, Alaska, Communities Participating in the National Flood Program*. <http://www.fema.gov/cis/AK.html>. Accessed on February 4, 2009.
- USDA. *NRCS Alaska, Prime and Important Farmlands*.  
<http://www.ak.nrcs.usda.gov/soils/soilslocal.html>. Accessed on February 4, 2009.
- USFWS. 2009. Threatened and Endangered Species System. Alaska.  
[http://ecos.fws.gov/tess\\_public/pub/stateListing.jsp?state=AK&status=listed](http://ecos.fws.gov/tess_public/pub/stateListing.jsp?state=AK&status=listed). Accessed on February 26, 2009.
- Vanderzanden, Joe. 2009. Personal Communication between Joe Vanderzanden, Gustavus Electric Company, and Ananda Jenkins, DOWL HKM, on November 6, 2009

## **FIGURES**





P:\Projects\DG0159\ENVEA-GSTV5.dwg 2009-12-15

**VICINITY MAP**

Sec 5,6,8,9

T40S, R 59E

Copper River Meridian, Alaska

**STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**

**PROJECT No 68287  
GUSTAVUS AIRPORT RUNWAY  
SAFETY AREA IMPROVEMENTS**

Gustavus, Alaska

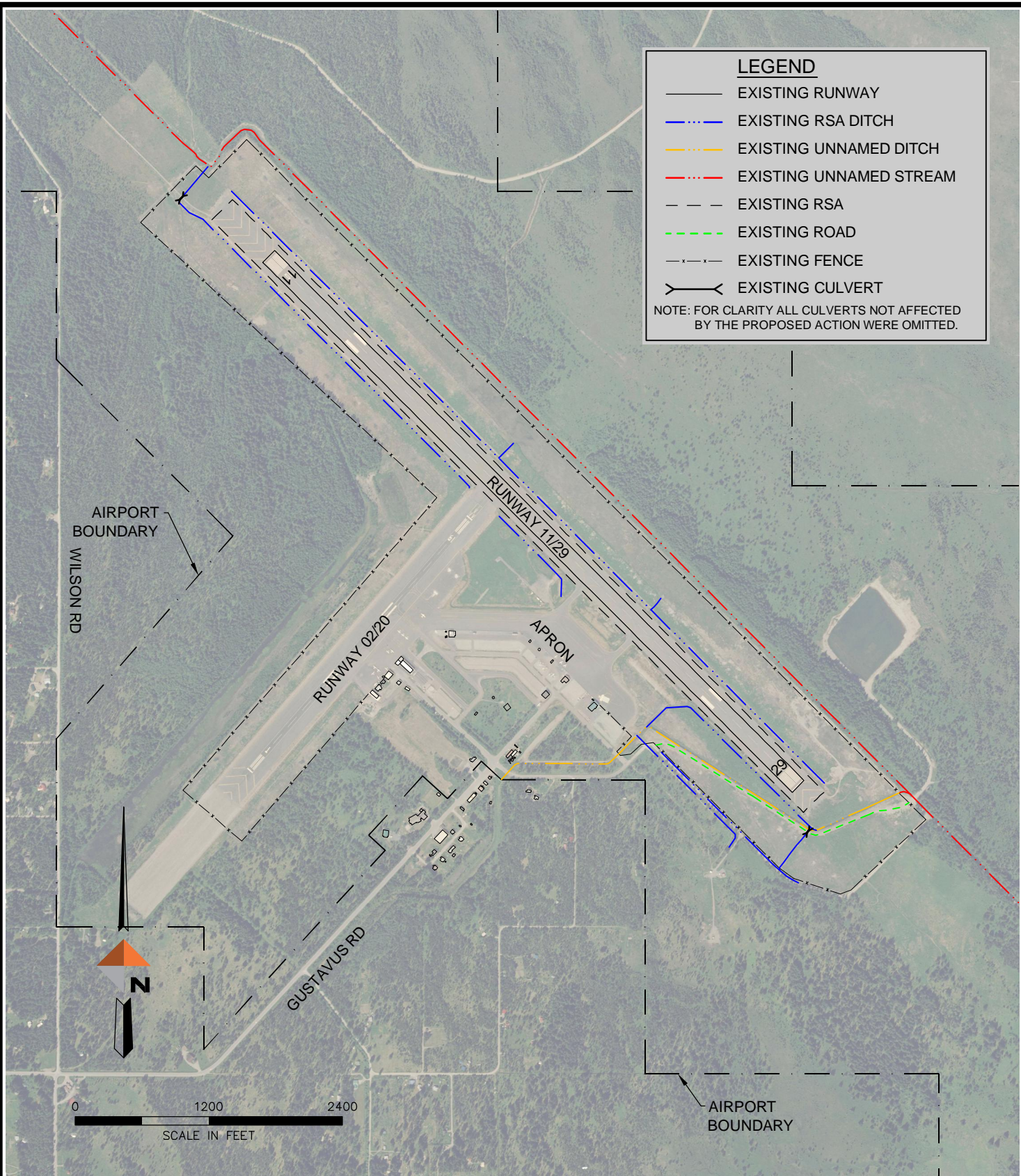
DATE: 12/15/2009

FIGURE 1

**LEGEND**

- EXISTING RUNWAY
- EXISTING RSA DITCH
- EXISTING UNNAMED DITCH
- EXISTING UNNAMED STREAM
- - - EXISTING RSA
- - - EXISTING ROAD
- - - EXISTING FENCE
- x—x— EXISTING CULVERT

NOTE: FOR CLARITY ALL CULVERTS NOT AFFECTED BY THE PROPOSED ACTION WERE OMITTED.



P:\Projects\160159\ENVEA-GSTV5.dwg 2009-12-15

**EXISTING CONDITIONS**

Sec 5,6,8,9

T40S, R 59E

Copper River Meridian, Alaska



**STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**

PROJECT No 68287  
**GUSTAVUS AIRPORT RUNWAY  
SAFETY AREA IMPROVEMENTS**

Gustavus, Alaska

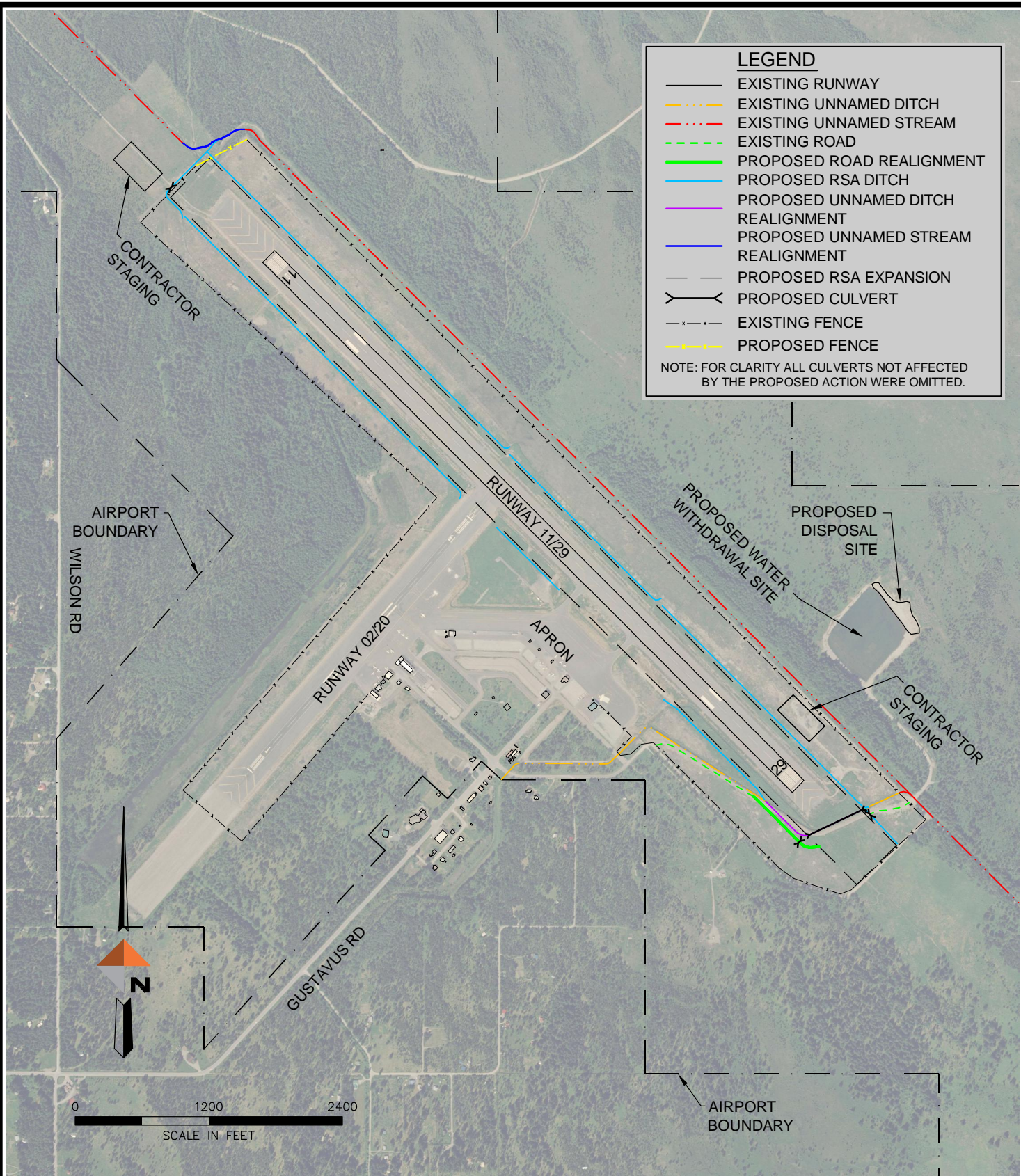
DATE: 12/15/2009

FIGURE 2

**LEGEND**

- EXISTING RUNWAY
- - - EXISTING UNNAMED DITCH
- · - · EXISTING UNNAMED STREAM
- · - · EXISTING ROAD
- PROPOSED ROAD REALIGNMENT
- PROPOSED RSA DITCH
- PROPOSED UNNAMED DITCH REALIGNMENT
- PROPOSED UNNAMED STREAM REALIGNMENT
- - - PROPOSED RSA EXPANSION
- PROPOSED CULVERT
- x - x EXISTING FENCE
- PROPOSED FENCE

NOTE: FOR CLARITY ALL CULVERTS NOT AFFECTED BY THE PROPOSED ACTION WERE OMITTED.



P:\Projects\160159\ENVEA-GSTV5.dwg 2009-12-15

**PROPOSED ACTION**

Sec 5,6,8,9

T40S, R 59E

Copper River Meridian, Alaska



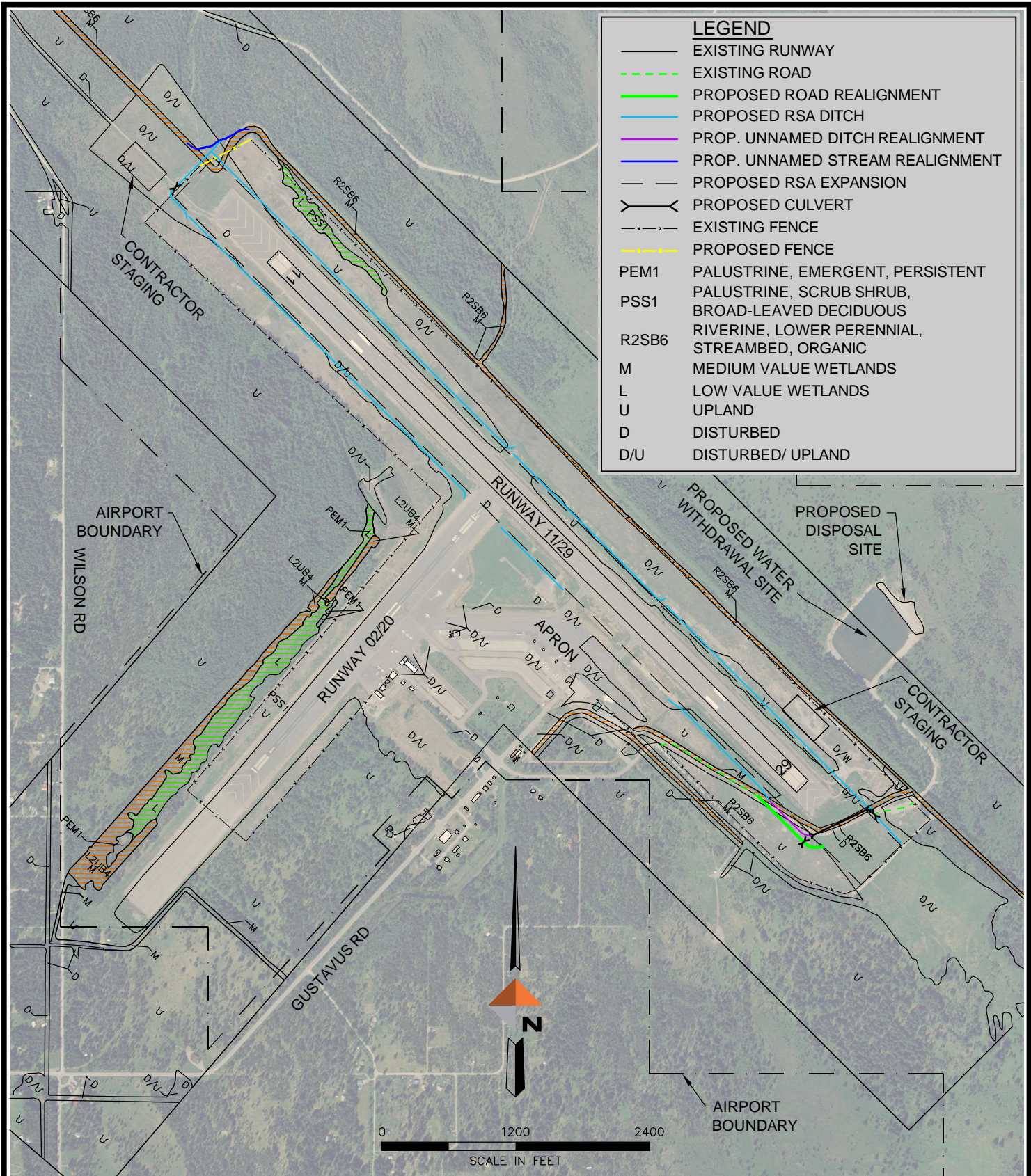
**STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**

PROJECT No 68287  
GUSTAVUS AIRPORT RUNWAY  
SAFETY AREA IMPROVEMENTS

Gustavus, Alaska

DATE: 12/15/2009

FIGURE 3



**LEGEND**

—	EXISTING RUNWAY
- - -	EXISTING ROAD
—	PROPOSED ROAD REALIGNMENT
—	PROPOSED RSA DITCH
—	PROP. UNNAMED DITCH REALIGNMENT
—	PROP. UNNAMED STREAM REALIGNMENT
—	PROPOSED RSA EXPANSION
—	PROPOSED CULVERT
- x - x -	EXISTING FENCE
—	PROPOSED FENCE
PEM1	PALUSTRINE, EMERGENT, PERSISTENT
PSS1	PALUSTRINE, SCRUB SHRUB, BROAD-LEAVED DECIDUOUS
R2SB6	RIVERINE, LOWER PERENNIAL, STREAMBED, ORGANIC
M	MEDIUM VALUE WETLANDS
L	LOW VALUE WETLANDS
U	UPLAND
D	DISTURBED
D/U	DISTURBED/ UPLAND

P:\Projects\060159\ENVEA-GSTV5.dwg 2009-12-15

**WETLAND CLASSES**

Sec 5,6,8,9

T40S, R 59E

Copper River Meridian, Alaska



**STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**

PROJECT No 68287  
**GUSTAVUS AIRPORT RUNWAY  
SAFETY AREA IMPROVEMENTS**

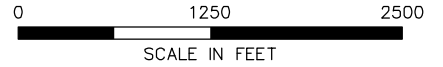
Gustavus, Alaska

DATE: 12/15/2009

FIGURE 4

**AREAS D & E**

R2UB2  
FILL IN WATERS OF THE U.S.



EXISTING CULVERT

**AREA C**

R4SB  
SEE SHEET 5  
FOR IMPACTS

PEM1D  
(NO IMPACTS)

R2UB2  
FISH STREAM  
(UNNAMED STREAM #144-23-10199)

**PROJECT SUMMARY OF IMPACT TO WATERS OF THE U.S.**

FOR AREAS A,B,C,D, & E SEE SHEETS 3 AND 5

NOTE: NET STREAM LOSS IS 125 L.F., NET DITCH LOSS IS 360 L.F.

AREA	RUNWAY END	FILL IN THE WATERS OF THE U.S.	COWARDIN CLASSIFICATION	LOSS OR GAIN OF STREAM LENGTH (L.F.)	FILL IN WATERS OF THE U.S. (CY)	FILL IN WATERS OF THE U.S. (ACRES)
A	29	LOSS OF EXISTING DITCH	R5US2	625	2000	0.49
B	29	GAIN OF REALIGNED DITCH	R5US2	+710	N/A	N/A
C	11	LOSS OF EXISTING DITCH	R4SB	445	650	0.34
D	11	LOSS OF EXISTING FISH STREAM (#114-23-10199)	R2UB2	543	1400	0.24
E	11	GAIN OF REALIGNED FISH STREAM (#114-23-10199)	R2UB2	+418	N/A	N/A
TOTAL PROJECT IMPACTS TO THE WATERS OF THE U.S.					4050	1.07

TO ICY PASSAGE

R5US2

**AREAS A&B**

FILL IN WATERS OF THE U.S. SEE SHEET 3

EXISTING CULVERTS

Wetlands and Waters of the U.S.

Sec 5,6,8,9

T40S, R 59E

Copper River Meridian, Alaska







STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

PROJECT No 68287  
GUSTAVUS AIRPORT RUNWAY  
SAFETY AREA IMPROVEMENTS

Gustavus, Alaska

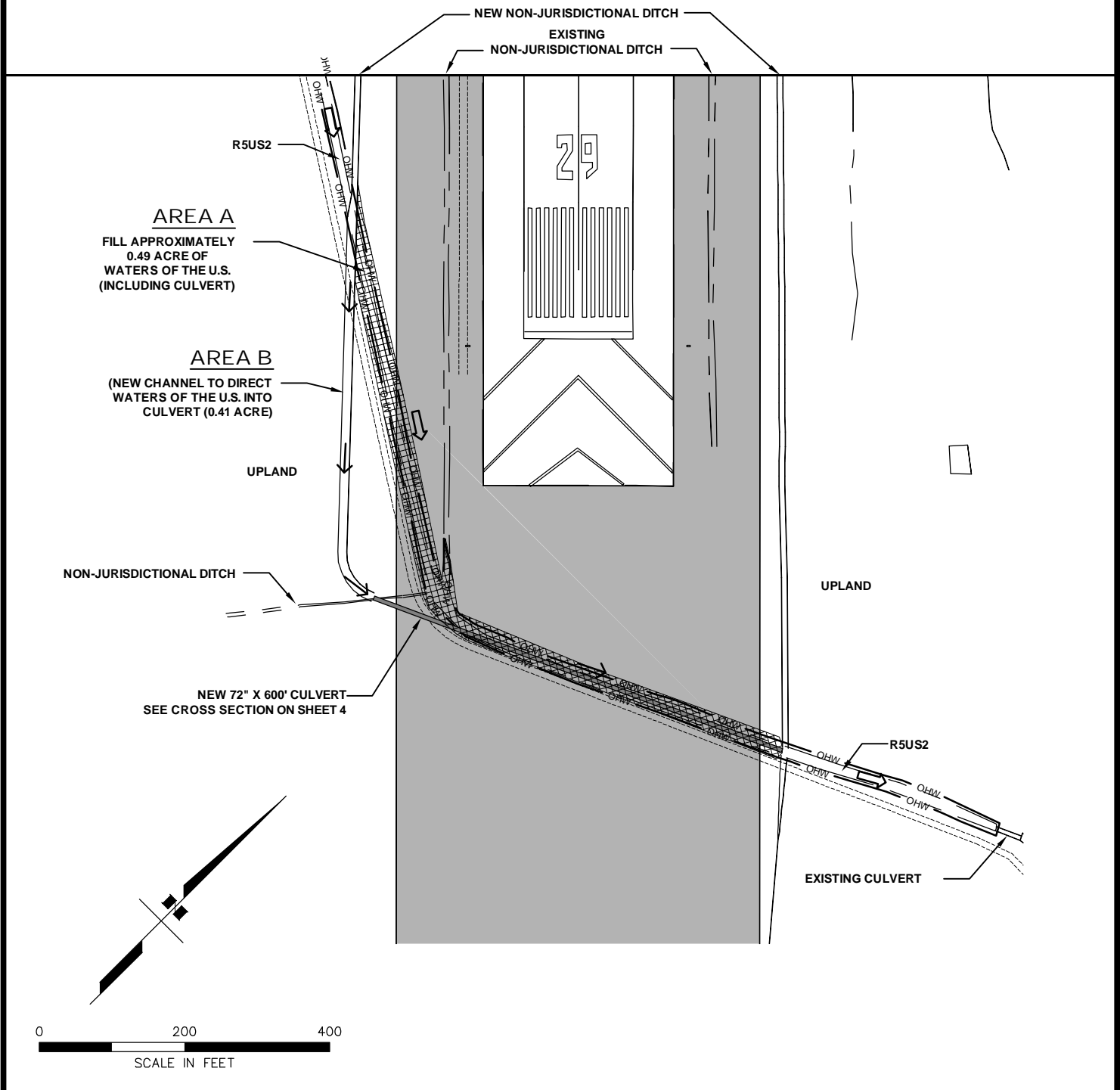
DATE: 02/08/2011

FIGURE 5

-  EXISTING FLOW DIRECTION
-  PROPOSED FLOW DIRECTION
-  FILL IN WATERS OF THE U.S.
-  RSA EXPANSION AREA
- OHW-** ORDINARY HIGH WATER

IMPACTED CHANNEL	
SHEET SUMMARY	
<b>A</b>	FILL IN WATERS OF THE U.S.
	2,000 CY
	0.49 ACRE
625 LINEAR FEET	

CONSTRUCTED CHANNEL	
SHEET SUMMARY	
<b>B</b>	NEW CHANNEL DIRECTING WATERS OF THE U.S.
	+0.41 ACRE
+710 LINEAR FEET	



P:\Projects\160159\ENV\ACOE-GSTV\S.dwg 2011-2-10

Wetlands and Waters of the U.S.  
 Sec 5,6,8,9  
 T40S, R 59E  
 Copper River Meridian, Alaska



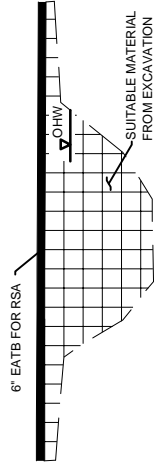
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES

PROJECT No 68287  
 GUSTAVUS AIRPORT RUNWAY  
 SAFETY AREA IMPROVEMENTS

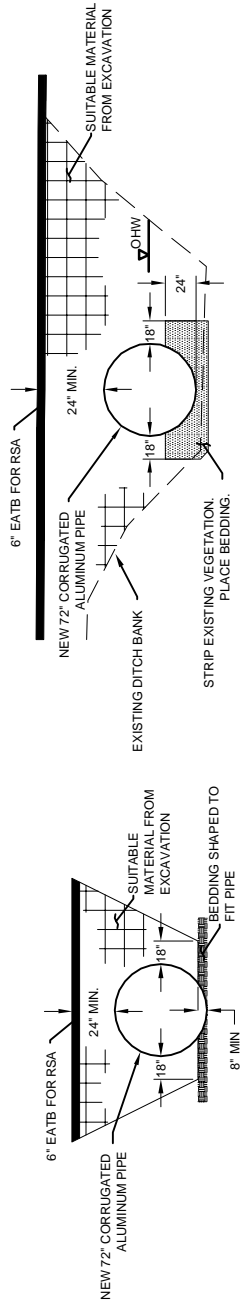
Gustavus, Alaska

DATE: 02/08/2011

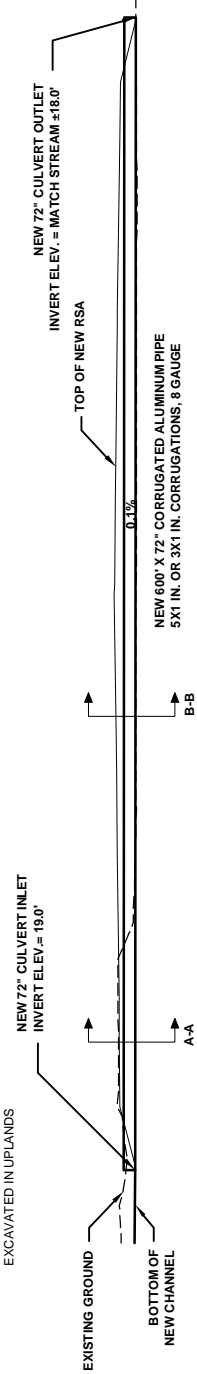
FIGURE 6



**TYPICAL SECTION OF EXISTING DITCH UNDER  
RSA EXPANSION AREA AT RUNWAY END 29**



**SECTION B-B**



**SECTION A-A**

NOTE: THIS SECTION  
EXCAVATED IN UPLANDS

**NEW 72" X 600' CULVERT PROFILE AND SECTION**

Culvert Profile and Section  
Sec 5,6,8,9  
T40S, R 59E  
Copper River Meridian, Alaska



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

PROJECT No 68287  
GUSTAVUS AIRPORT RUNWAY  
SAFETY AREA IMPROVEMENTS

Gustavus, Alaska

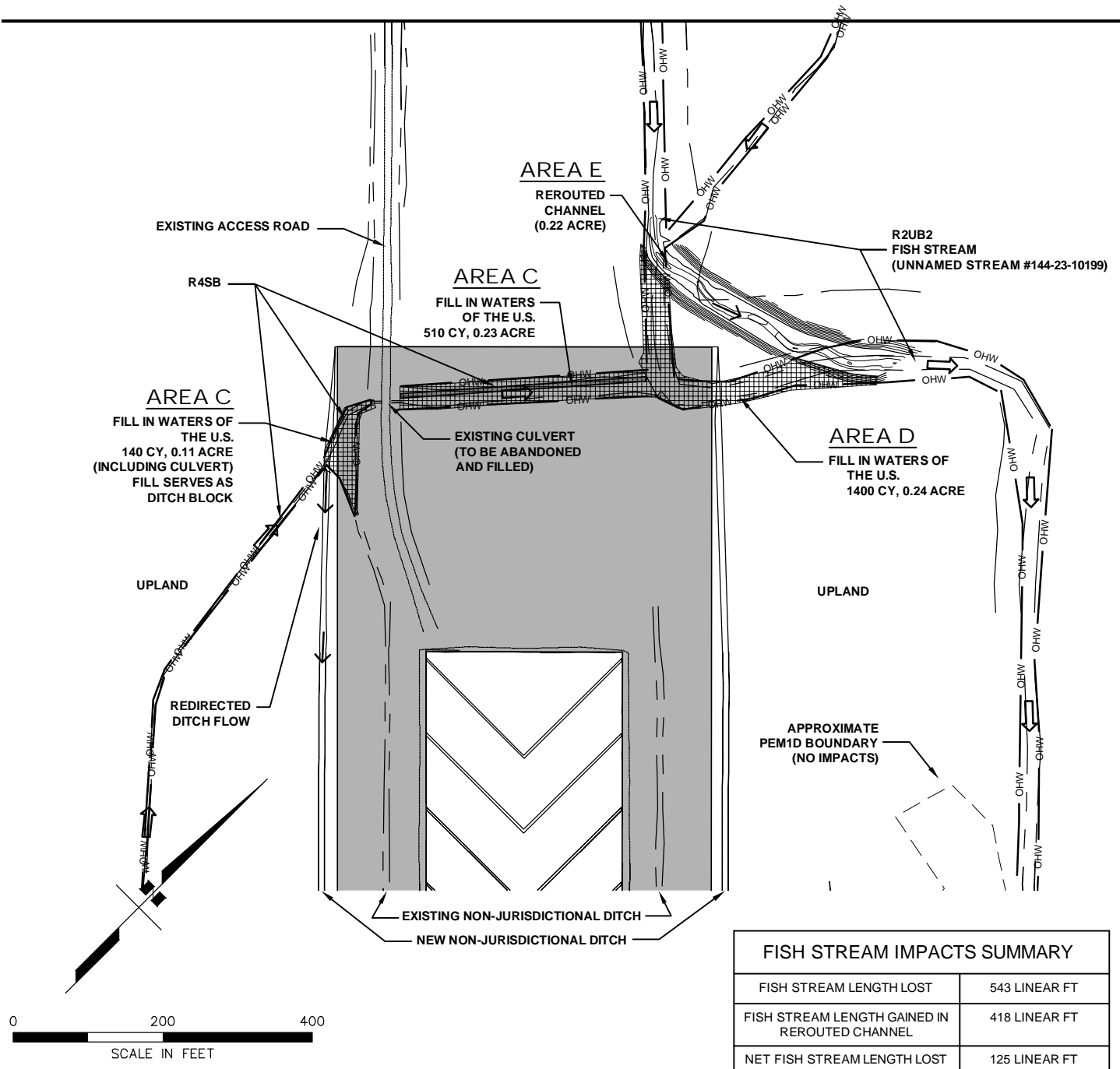
DATE: 02/08/2011

FIGURE 7

- EXISTING FLOW DIRECTION
- PROPOSED FLOW DIRECTION
- FILL IN WATERS OF THE U.S.
- RSA EXPANSION AREA
- OHW- ORDINARY HIGH WATER

IMPACTED CHANNEL	
SHEET SUMMARY	
<b>C &amp; D</b>	FILL IN WATERS OF THE U.S.
	2,050 CY
	0.58 ACRE
988 LINEAR FEET	

CONSTRUCTED CHANNEL	
SHEET SUMMARY	
<b>E</b>	REROUTED CHANNEL
	+0.22 ACRE
DIRECTING WATERS OF THE U.S.	
+418 LINEAR FEET	



FISH STREAM IMPACTS SUMMARY	
FISH STREAM LENGTH LOST	543 LINEAR FT
FISH STREAM LENGTH GAINED IN REROUTED CHANNEL	418 LINEAR FT
NET FISH STREAM LENGTH LOST	125 LINEAR FT

P:\Projects\160159\ENV\ACOE-GSTV\S.dwg 2011-2-10

Wetlands and Waters of the U.S.  
 Sec 5,6,8,9  
 T40S, R 59E  
 Copper River Meridian, Alaska



**STATE OF ALASKA**  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES

PROJECT No 68287  
 GUSTAVUS AIRPORT RUNWAY  
 SAFETY AREA IMPROVEMENTS

Gustavus, Alaska

DATE: 02/08/2011	FIGURE 8
------------------	----------



Page intentionally left blank

