DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

ALASKAN REGION

ANCHORAGE, ALASKA

RECORD OF DECISION

ENHANCE SAFETY AND IMPROVE FACILITIES

AT

JUNEAU INTERNATIONAL AIRPORT

JUNEAU, ALASKA

JULY 6, 2007

Juneau International Airport Final Environmental Impact Statement and Section 4(f) Evaluation

ERRATA SHEET

The following errors were identified in the Final Environmental Impact Statement (FEIS) following printing and distribution of the document.

Location of Error	Nature of Error/Relevant Correction
Table ES-8, Pages ES-72 and ES-73 of the stand-alone Executive Summary; Table ES-8 of the Executive Summary in Volume I, Pages ES-47 and ES-48; and Chapter 2, Table 2-26, Pages 2-287 and 2-288; and Volume II, Chapter 5, Table 5-4, Pages 5-18 and 5-19, Proposed Actions column	These tables incorrectly identify the combined impacts of the preferred alternatives for vegetation, wetlands, and wildlife habitat. The following are the relevant corrections*: a. Vegetation: Impacts for estuarine marsh communities would be 54.5 acres. b. Vegetation: Impacts for Supratidal communities would be 16.0 acres. c. Wetlands: Impacts for high and low marsh communities would be 52.8 acres. d. Wetlands: Palustrine wetlands would be reduced by approximately 22.4 acres. e. Wildlife: Estuarine habitats would be reduced by 54.5 acres. f. Wildlife: Supratidal habitats would be reduced by 16.0 acres * These calculations include acreage for reconstruction of the east runway tidal slough to restore hydrologic connectivity.
Volume II, Tables 5.10, 5.11, and 5.12 of Chapter 5	These tables should have included a footnote stating that the total impacts row of each table does not account for overlap between projects.
Volume II, Table 5.10	Acreages listed for FW/RW-2: Aviation Facilities for High Marsh should 17.6 acres and acres for Supratidal should be 16.3. Acreages listed for the Proposed Wildlife Hazard Actions for High Marsh should be 2.1 acres and acres for Supratidal should be 1.1. Total acres of High Marsh should be 39.9 acres and total acres for Supratidal should be 23.6.
Table ES-7, Page ES-71 of the stand-alone Executive Summary; Volume I, Table ES-7, Page ES-46 of the Executive Summary and Table 2-25, Page 2-286 of Chapter 2	These tables incorrectly list elements WH-3e and WH-1i as part of the preferred Wildlife Hazard Management Plan Alternative. The correct elements in place of these are WH-3a and WH-2i.
Volume I, Section 2.8.2.1, Page 2-188, Footnote 26	This footnote incorrectly states that the 19.8 acres of wetlands impacts from the Northeast Development Area discussed on Page 2-187 does not include impacts from the SREF. The impacts from the SREF are included in the calculation of 19.8 acres.

Location of Error	**Nature of Error/Relevant Correction**
Volume II, Chapter 5, Section 5.5, Page 5-14, First bullet	This bullet incorrectly identifies the Wildlife Hazard Management Plan element for "alteration of vegetation management techniques and increased hazing in the infield areas" as element WH-3e. This action is WH-3a.
Volume II, Chapter 5, Section 5.5, Page 5-14, Fifth bullet	The Wildlife Hazard Management Plan action described in this bullet is element WH-2i, not WH-1i as stated in the FEIS.
Table ES-2, Page ES-20 of the stand-alone Executive Summary; Volume I, Table ES-2, Page ES-19, and Table 1-8, Page 1-47	These tables incorrectly list the EPA as providing certification under Section 401 of the Clean Water Act. This certification is provided by the Alaska Department of Environmental Conservation.
Stand-alone Executive Summary, Page ES-83; Volume I, Pages ES-58 and 2-300	The Alaska Coastal Management Program statute reference on these pages is incorrectly listed as 6 AAC 80. The correct statute reference is 11 AAC 112.
Section ES.4.1.1 of the stand-alone Executive Summary; Volume I, Section ES.4.1.1 of the Executive Summary and Section 2.12 of Chapter 2	The FAA determined during publication of the FEIS that the 1,000-foot set of MALSR lights would have to be located within but near the east bank of the Mendenhall River channel as a result of the Runway 08 threshold displacement for Runway Safety Area Alternative RSA-5E. The referenced sections of the FEIS should have contained the following statement: “So as to assure no diminishment of navigability for commercial or recreational boat traffic, the navigable portion of Mendenhall River channel width in the Runway 08 approach light lane shall not be reduced as a consequence of MALSR relocation.”

SUMMARY

This Record of Decision provides final determinations and approvals by the Federal Aviation Administration (FAA) for federal actions needed to enhance safety features and improve facilities at Juneau International Airport, Juneau, Alaska. Included within the Record of Decision are descriptions of the projects proposed by the Airport Sponsor (Juneau International Airport) and the documented need for each project, alternatives to the proposed actions, environmental impacts associated with the actions and alternatives, and mitigation measures required to avoid or minimize environmental harm. This Record of Decision also discloses the federal, state, and local actions needed before each of the projects may be implemented and provides findings, certifications, and determinations concerning resources of special concern. Conditions of approval that must be met by the Sponsor are listed. Finally, the Record of Decision identifies the FAA's preferred and environmentally preferred alternatives and the alternatives selected by FAA for implementation.

The FAA is responsible for the preparation and content of the Final Environmental Impact Statement (FEIS), published April 23, 2007, and this Record of Decision. In developing the FEIS, the FAA relied on certain information provided by outside sources as authorized by 40 CFR §1506.5. The FAA is responsible for reviewing and independently verifying the accuracy of any information provided by outside entities including the Sponsor and cooperating agencies. In keeping with its oversight responsibility as the lead federal agency for the EIS, the FAA consistently exercised control over the scope, content, and development of the FEIS. The FAA selected a third-party contractor to assist with information verification and preparation of the FEIS.

The FAA is responsible for the accuracy of all information within the EIS and Record of Decision. For more information concerning the contents of this Record of Decision or the FEIS, please contact:

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TABLE OF CONTENTS

SUMMARY I

1.0 INTRODUCTION 1-1

2.0 PROJECT SETTING 2-1

2.1 Juneau International Airport (JNU or the Airport) 2-1

2.2 Airport Master Plan 2-3

2.3 Aviation Operations and Facilities at JNU 2-3

2.4 Airport Navigational Systems 2-7

2.5 Airport Facilities 2-8

2.5.1 Snow Removal Equipment and Maintenance Building 2-8

2.5.2 Fuel Farm Access 2-8

2.5.3 Aviation Facilities: Existing Demand and Projected Needs 2-8

2.5.4 Fleet Mix and Critical Aircraft 2-10

2.6 Wildlife Hazard Management 2-10

3.0 NEED FOR ACTION 3-1

3.1 Runway Safety Area (RSA) 3-1

3.2 Improve Navigational Alignment 3-2

3.3 Improve and Increase Aviation Facilities 3-2

3.3.1 Snow Removal Equipment and Maintenance Facility (SREF) 3-2

3.3.2 Fuel Farm Access 3-2

3.3.3 Aircraft Parking and Storage 3-3

3.4 Wildlife Hazard Management Plan (WHMP) 3-3

4.0 SPONSOR'S PROPOSED ACTION 4-1

4.1 Increase Runway Safety Area (RSA) 4-1

4.2 Install MALSR on Runway 26 Approach 4-1

4.3 Snow Removal Equipment and Maintenance Facility (SREF) 4-1

4.4 Fuel Farm Access Road 4-2

4.5 Aircraft Parking and Storage 4-2

4.6 Implement a Revised Wildlife Hazard Management Plan (WHMP) 4-2

5.0 NECESSARY FEDERAL, STATE, AND LOCAL ACTIONS 5-1

6.0 ALTERNATIVES CONSIDERED 6-1

6.1 Runway Safety Area 6-1

6.1.1 Lateral Runway Safety Area 6-2

6.1.2 End-of-Runway Safety Areas 6-3

RSA-1: Fill and Grade Existing Deficiencies 6-3

RSA-5C Displace Runway 08 Threshold, Construct Additional 26 Runway and Safety Area 6-4

RSA-5D: Relocate Runway 26 Threshold, Construct Additional Runway and Safety Areas 6-5

RSA-5E: Displace Runway 08 Threshold 120 Feet and Construct Additional 26 Runway and Safety Area 6-5

RSA-6A: EMAS Technology – EMAS with Declared Distances/Runway 26 Extension 6-6

RSA-6B: EMAS Technology – EMAS with Declared Distances/Runway 08 Extension 6-7

RSA-6C: EMAS Technology – Combined EMAS and Runway Safety Area 6-8

RSA-6D: Threshold Displacement using Declared Distance Criteria with Option for EMAS. 6-9

RSA-8: No Action Alternative 6-10

6.2 Navigational Alignment 6-10

6.2.1 NAV-2B: Medium Intensity Approach Light System with Runway Alignment Indicator Lights (MALSR) 6-10

6.2.2 NAV-3: No Action Alternative 6-12

6.3 Snow Removal Equipment Facility (SREF) 6-12

6.3.1 SREF-1B: West End of Airport 6-13

6.3.2 SREF-3B1: South of Yandukin Drive 6-13

6.3.3 SREF-5: No Action Alternative 6-14

6.4 Aircraft Parking and Storage 6-14

6.4.1 Northeast Development Area (Alternatives FW/RW-1 and FW/RW–2) 6-15

FW/RW-1: Full Development of Northeast and Northwest Development Areas 6-16

FW/RW-2: Full Development of Northeast and Northwest Development Areas with Duck Creek Relocation 6-17

FW/RW-3: No Action 6-18
6.5 Fuel Farm Access 6-19
6.5.1 FF-1: Develop New Access Road to Fuel Farm 6-19
6.5.2 FF-2: Install Pipelines from Fuel Farm to Central Fuel Distribution Port 6-20
6.5.3 FF-3: No Action Alternative 6-21
6.6 Wildlife Hazard Management Plan 6-21
6.6.1 WH-1: Wildlife Hazard Management Plan and Sponsor's Proposed Action 6-22
6.6.2 WH-2: Moderate Habitat Modification Alternative 6-25
6.6.3 WH-3: Minor Habitat Modification Alternative with Adaptive Hazard Management Program 6-25
6.6.4 WH-4: No Action Alternative 6-26

7.0 ENVIRONMENTALLY PREFERRED ALTERNATIVES 7-1

8.0 FAA'S PREFERRED ALTERNATIVES 8-1
8.1 Runway Safety Area 8-1
8.2 Navigational Alignment 8-4
8.3 Snow Removal Equipment and Maintenance Facility 8-4
8.4 Aviation Facilities: Aircraft Parking and Storage 8-8
8.5 Fuel Farm Access 8-13
8.6 Wildlife Hazard Management Plan 8-14

9.0 SELECTED ALTERNATIVES 9-17

10.0 FINDINGS, DETERMINATIONS AND CERTIFICATIONS 10-1
10.1 Compliance with Laws, Regulations, and Executive Orders 10-1
10.1.1 Executive Order 11988: Floodplain Management and U.S. DOT Order 5650.2: Floodplain Management and Protection 10-1
10.1.2 Executive Order 11990: Protection of Wetlands and U.S. DOT Order 5660.1A 10-2
10.1.3 National Historic Preservation Act (16 U.S.C. §470) 10-2
10.1.4 Clean Water Act (33 U.S.C. §1344) Sections 401, 402, and 404 and the Federal Water Pollution Control Act (33 U.S.C. §§ 1251-1387) 10-2
10.1.4.1 Conformance with Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR §230) 10-3

10.1.5 Endangered Species Act (16 U.S.C.§460 et seq.) 10-8
10.1.6 Rivers and Harbors Act (33 U.S.C. §403) 10-8
10.1.7 Marine Protection, Research and Sanctuaries Act (33 U.S.C. §1413) 10-8
10.1.8 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855(b)(2)) 10-8
10.1.9 Marine Mammal Protection Act (16 U.S.C. §1361-1421, Public Law 92-522) 10-9
10.1.10 Migratory Bird Treaty Act (regulations at 50 CFR Part 21.43) and Executive Order 13186 10-9
10.1.11 Bald and Golden Eagle Protection Act (regulations at 50 CFR Part 22.23) 10-9
10.1.12 Fish and Wildlife Coordination Act (16 U.S.C. §661-667e) 10-9
10.1.13 Clean Air Act (42 U.S.C. §7401 et seq.) 10-9
10.1.14 Aviation Safety and Noise Abatement Act (49 U.S.C. §47501 et seq.) 10-9
10.1.15 U.S. Department of Transportation Section 4(f) (49 U.S.C. 303 & 23 U.S.C. 138) 10-9
10.1.16 Executive Order 12898: Environmental Justice 10-10
10.1.17 Executive Order 13045: Children's Environmental Health and Safety Risks 10-10
10.1.18 Anadromous Fish Act (AS §41.14.870) 10-10
10.1.19 Fishway Act (AS §41.14.840) 10-10
10.1.20 Alaska Coastal Management Program (11 AAC 112) 10-10
10.1.21 Juneau Coastal Management Plan (Section 49.70.950F) 10-12
10.1.22 Juneau Wetland Management Plan (CBJ Land Use Code 49.70.1065-1075) 10-12
10.1.23 ADF&G Special Area Permit (5 AAC §95.420) 10-12
10.1.24 Permit for Scientific, Educational, Propogative, or Public Safety Purposes (5 ACC §92.033) 10-12
10.1.25 Leasing and Permitting of State-owned Lands (11 AAC §58, 11 AAC §62.690-730, 11 AAC§96) 10-13
10.1.26 Conveyance of State-owned Lands (AS §38.05.825 and AS §38.05.035(e)) 10-13
10.1.27 Development in Flood Hazard Area (CBJ Ordinance 49.70.400) 10-13
10.2 Determinations Under 49 U.S.C. Sections 47106 and 47107 10-13
10.3 Runway Safety Area Practicability Determination 10-15

11.0 SUMMARY OF ENVIRONMENTAL IMPACTS 11-1

12.0 SUMMARY OF MITIGATION MEASURES 12-1
12.1 Measures Adopted to Avoid or Minimize Harm 12-1

12.2 Compensatory Mitigation Plan Summary..... 12-2

12.2.1 Specific Mitigation Measures 12-3

12.2.2 Mitigation Authorization, Monitoring and Enforcement..... 12-3

12.2.3 Additional Conditions of Approval to Minimize Harm..... 12-4

13.0 DECISION AND ORDER..... 13-1

REFERENCES..... X-1

APPENDIX A: AGENCY CONCURRENCE LETTERS A-1

APPENDIX B: PUBLIC AND AGENCY COMMENTS ON THE FINAL EIS B-1

APPENDIX C: PROGRAMMATIC AGREEMENT..... C-1

List of Figures

Figure 1. Project area locator map. 2-2
Figure 2. Existing facilities. 2-5
Figure 3. RSA-5E fill areas. 8-3
Figure 4. Runway 26 MALSR with new RSA and Water Conveyance Improvements. 8-5
Figure 5. Snow removal equipment facility concept plan. 8-7
Figure 6. Northeast Aviation Development Area with SREF Site. 8-9
Figure 7. Northwest Aviation Development Area with Duck Creek relocation and Fuel Farm Access Road. 8-11
Figure 8. Fuel farm road cross section. 8-15

List of Tables

Table 1. Existing and Projected Future Aviation Facility Requirements 2-9
Table 2. Permits, Approvals, Certifications and Consultations for Implementation of JNU Projects 5-3
Table 3. Habitat Modifications for Wildlife Hazard Management Alternatives 6-23
Table 4. Summary Needs and Actions Comprising the FAA's Selected Alternatives 9-18
Table 5. Summary of Combined Impacts of All Actions Comprising FAA's Preferred Alternative 11-2

1.0 INTRODUCTION

This Record of Decision (ROD) provides final determinations and approvals by the Federal Aviation Administration (FAA) for federal actions needed to enhance safety features and improve aviation facilities at Juneau International Airport (JNU), Juneau, Alaska. The federal actions identified in Section 5.0 of this ROD, and other applicable state and local actions, are necessary to support the following projects:

- FAA's Preferred Alternative to increase the runway safety area (RSA) on both runway ends and sides to comply with FAA standards is RSA-5E. This would be accomplished by displacing the Runway 08 threshold, relocating the Runway 26 threshold, and constructing additional RSA at each runway end. Each runway would have 600-foot undershoot protection and 1,000-foot RSA for aircraft overruns. In addition, sufficient fill would be added to the lateral safety areas to meet FAA standards.
- Pilot alignment would be improved and safer aircraft landing conditions created by installation of a medium intensity approach lighting system with runway alignment indicator lights (MALSR) on Runway 26. FAA's Preferred Alternative for this action is NAV-2B.
- A new snow removal equipment and maintenance facility (SREF), designed to address the current building storage and design deficiencies, would be constructed in the Airport's Northeast Development Area, as described in FAA's Preferred Alternative SREF-3B1.
- FAA's Preferred Alternative to create safer vehicle traffic conditions and improve airfield efficiency is to construct a new fuel farm access road as described in Alternative FF-1.
- Additional aircraft parking and storage facilities would be installed in the Northeast and Northwest Development Areas at JNU. These facilities would satisfy existing aviation demands and accommodate projected future aviation needs. In addition, the facilities would be designed to separate incompatible aviation uses and provide adequate separation between aircraft. FAA's Preferred Alternative for these actions is FW/RW-2.
- A number of habitat modifications would be undertaken and wildlife control activities would be implemented to reduce wildlife hazards to aircraft operating at JNU. FAA's Preferred Alternative to meet the need for hazard reductions is WH-1, as modified by other components of wildlife hazard management that would be adopted into a revised Wildlife Hazard Management Plan.

The Airport Sponsor's proposed actions and alternatives considered to meet the defined needs are described in detail in Sections 2.2 through 2.13 of the Final Environmental Impact Statement (FEIS), and they are summarized in this ROD. A full description of the preferred alternatives and FAA's selected alternatives is included in the ROD.

FAA understands that the Sponsor will apply for federal grant-in-aid funding from the FAA's Airport Improvement Program. There are numerous findings and determinations prescribed by statute and regulation that must be made by FAA as preconditions to agency approvals of airport project funding applications. This ROD includes the environmental determinations necessary to establish eligibility for approval of grants for federal funding, and it provides the basis to proceed with those findings and determinations. However, this ROD neither grants federal funding nor

constitutes a funding commitment. FAA will review funding requests upon submission by the Sponsor of a timely grant-in-aid application, and FAA will make funding decisions in accordance with statutory and regulatory requirements.

This ROD completes the environmental decision-making process undertaken by FAA with the assistance of Juneau International Airport (the Sponsor of the projects) and cooperation of federal and state agencies. The U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Alaska Department of Fish and Game participated as Council on Environmental Quality (CEQ)-defined "cooperating agencies" (40 CFR §1501.6). Other agencies, particularly the U.S. Environmental Protection Agency and Alaska Department of Natural Resources, as well as local city and borough agencies and officials, worked closely with FAA. Agencies, public interest groups, citizens, and the Sponsor provided comment on project needs, possible alternatives, resources affected, mitigation, and other subjects throughout the course of the EIS. More information on the FAA's public involvement activities is provided in Sections 1.7 and 1.8 and Chapter 6 of the FEIS. Agency letters reflecting concurrence with FAA's findings are provided in Appendix A to this ROD. Public and agency comment on the FEIS, and FAA responses to those comments, is included as Appendix B.

FAA has conducted a thorough and careful environmental analysis of the projects and alternatives. Impacts arising from these actions are disclosed in the April 23, 2007 FEIS. The FAA's Acting Alaskan Region Administrator has reviewed the FEIS and administrative record in support of the decisions documented in this ROD.

This ROD has been prepared and issued by FAA in compliance with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. Section 4321 et seq.), CEQ regulations implementing NEPA (40 CFR §1500-1508), and guidance contained in FAA Orders 1050.1E and 5050.4B. This ROD is also used to demonstrate and document FAA compliance with procedural and substantive requirements as well as related environmental and programmatic statutes and regulations that apply to FAA decisions on airport projects.

FAA arrived at these determinations and approvals by reviewing the environmental analysis in the FEIS and all other documents that comprise the administrative record for the EIS.

2.0 PROJECT SETTING

Juneau, the state of Alaska's capital city, is located in the panhandle of southeast Alaska, approximately 950 air miles northwest of Seattle and 570 air miles southeast of Anchorage (Figure 1). The Airport plays an important role in serving the capital of Alaska by providing direct, non-stop service to Anchorage and other Alaskan cities. JNU provides primary intrastate access to the southeast region of Alaska and to the Juneau area population, and it serves as a main interstate connection between southeast Alaska and Seattle, Washington. The Airport is located within the City and Borough of Juneau (CBJ), approximately 9 miles northwest of downtown Juneau. Airport property encompasses approximately 662 acres of land.

Scheduled passenger service at JNU is provided by one large Part 121 Air Carrier operator, Alaska Airlines. Alaska Airlines, Federal Express, and Alaska Central Express provide air-cargo service to Seattle and within Alaska, and a number of air-taxi operators fly to destinations around Juneau and southeast Alaska. JNU receives scheduled international service by Air North from Whitehorse, Canada.

JNU is the primary commercial service airport for southeast Alaska and, other than ferry service, provides the only access to areas outside the Juneau area. (It is not possible to drive directly from Juneau to other major parts of Alaska or to the lower 48 states.) Since the 1960s, the CBJ has undertaken a number of efforts to maximize access to and from Juneau and to change a perception among some in Alaska that Juneau has insufficient transportation reliability to support the requirements of a capital and legislature. Many of these efforts typically supported by FAA and funded in large part by the federal government have been directed at improving aviation safety while at the same time increasing air service reliability into the Airport. For example, the use of state-of-the-art navigation systems has resulted in the development of special-use approach procedures and innovative departure procedures that enhance air carrier reliability under challenging weather, winds, and terrain constraints.

2.1 JUNEAU INTERNATIONAL AIRPORT (JNU OR THE AIRPORT)

The Airport was developed by the U.S. government to support military Air Corps operations in Alaska. Prior to World War II, the area was served by a limited number of small aircraft, mostly float planes. The paved runway at the Airport was constructed in 1942. Following the war, Pan American Airlines and Pacific Northern Airlines established service to Juneau from Seattle and Anchorage. In 1953, the Airport was transferred from U.S. government ownership to the City of Juneau. In 1961, the runway was extended to accommodate jet aircraft operations in Alaska. In 1989, a full-length parallel taxiway was constructed to connect both ends of the runway to the aircraft parking apron and passenger terminal area. Other facility improvements have taken place periodically, most recently for additional aircraft parking and hangar spaces.

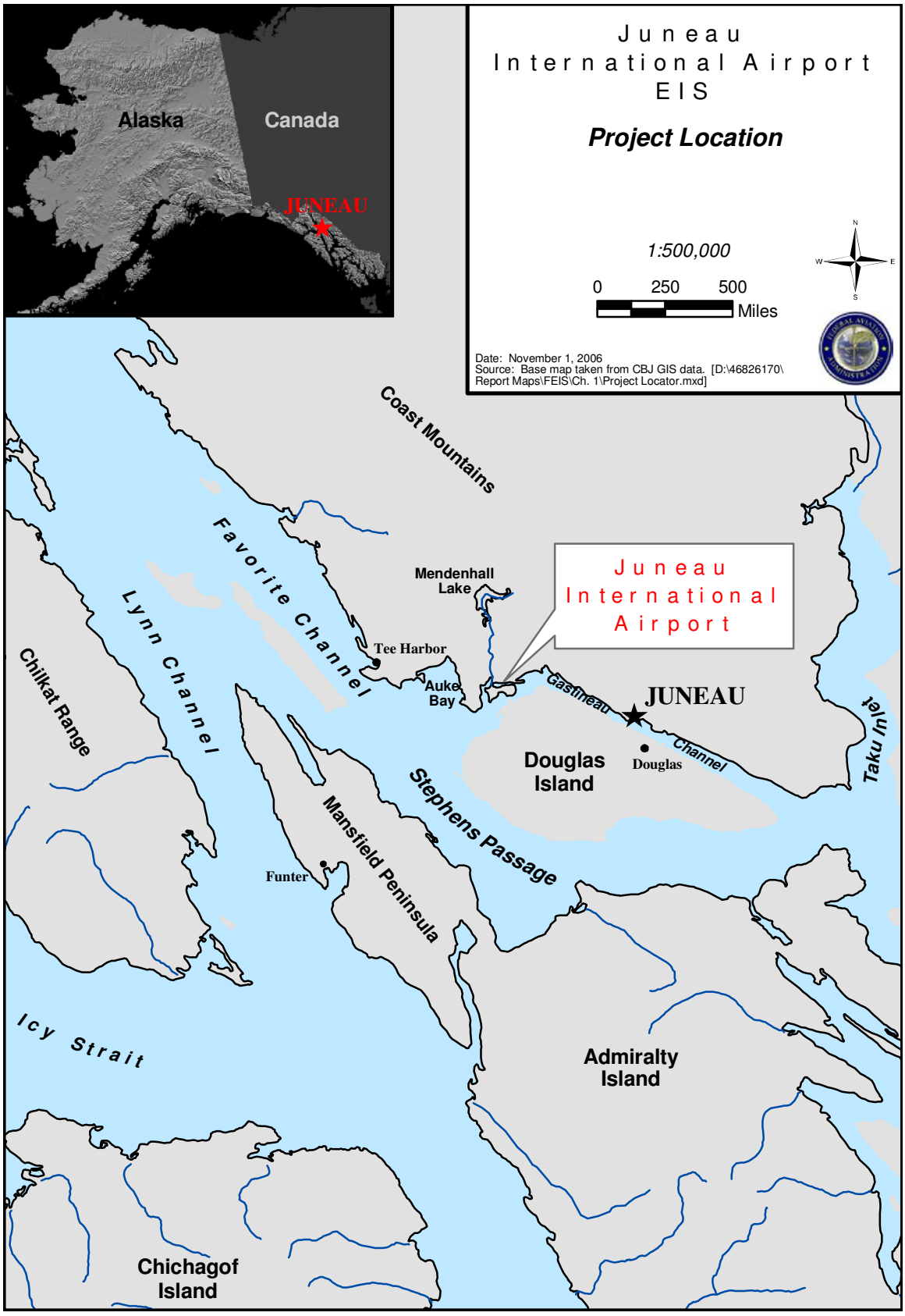

Figure 1. Project area locator map.

The Airport is now owned by the CBJ. A seven-person Airport Board, appointed by and accountable to the CBJ Assembly, governs the Airport. The Airport Board oversees the maintenance and operations of the Airport, while fiscal responsibility is vested with the CBJ Assembly. The Airport Board also oversees the activities of the Airport Manager, who is responsible for the day-to-day operation of JNU.

2.2 AIRPORT MASTER PLAN

The Juneau International Airport Board approved an Airport Master Plan and update to the Airport Noise Compatibility Plan on April 14, 1999. The Airport Layout Plan was revised at the conclusion of the Master Plan and was conditionally approved by FAA subject to environmental review on November 24, 1999, and the Master Plan was accepted by FAA on June 27, 2000. The Master Plan identified a number of recommendations for the Airport intended to enhance land use compatibility, resolve design and capacity deficiencies, accommodate existing and future air traffic, and reconstruct or rehabilitate Airport facilities (USKH 1999). FAA subsequently determined that some of the improvements identified in the Master Plan were needed to comply with the Federal Aviation Act or design standards for runways (40 CFR §139.309[a][2]); FAA 1989). All of the recommendations in the Master Plan that required federal action, including partial or total federal funding, federal agency approval, or federal permit issuance, are subject to review and analysis under the National Environmental Policy Act (NEPA).

An environmental assessment (EA) was prepared and published in 2000 to evaluate some of the Master Plan recommendations (USKH 2000). The potential for numerous environmental impacts was disclosed in the Draft EA, but a number of concerns were raised by state and federal agencies, local citizens, and special interest groups about the magnitude of environmental impacts. Additional concerns were raised in comment letters, including the potential for significant impacts to wetlands, essential fish habitat, recreation, wildlife, area hydrology, and other resources. In response to concerns raised by various stakeholders about the projects and specifically about the magnitude of environmental impacts, the FAA announced in June 2000 that a more comprehensive EIS would be necessary to thoroughly consider and evaluate project alternatives, environmental impacts, and mitigation options. This ROD provides the culminating decisions from the environmental analysis documented in the Final EIS dated April 23, 2007.

2.3 AVIATION OPERATIONS AND FACILITIES AT JNU

For wheeled aircraft, JNU has a single runway aligned in an almost east-west direction that is 150 feet wide and 8,456 feet long (see Figure 2). Takeoffs to the west and landings from the east use Runway 26, while takeoffs to the east and landings from the west use Runway 08. The Float Plane Pond also serves as a runway for water takeoffs and landings. It has the same alignment as the hard surface runway and is 4,900 feet long and 450 feet wide.

The RSAs extend approximately 250 feet beyond the end of Runway 08 (at a width of approximately 232 feet) and approximately 289 feet beyond the end of Runway 26 (at a width of approximately 228 feet). The width of the RSA also varies along the lateral extent of the

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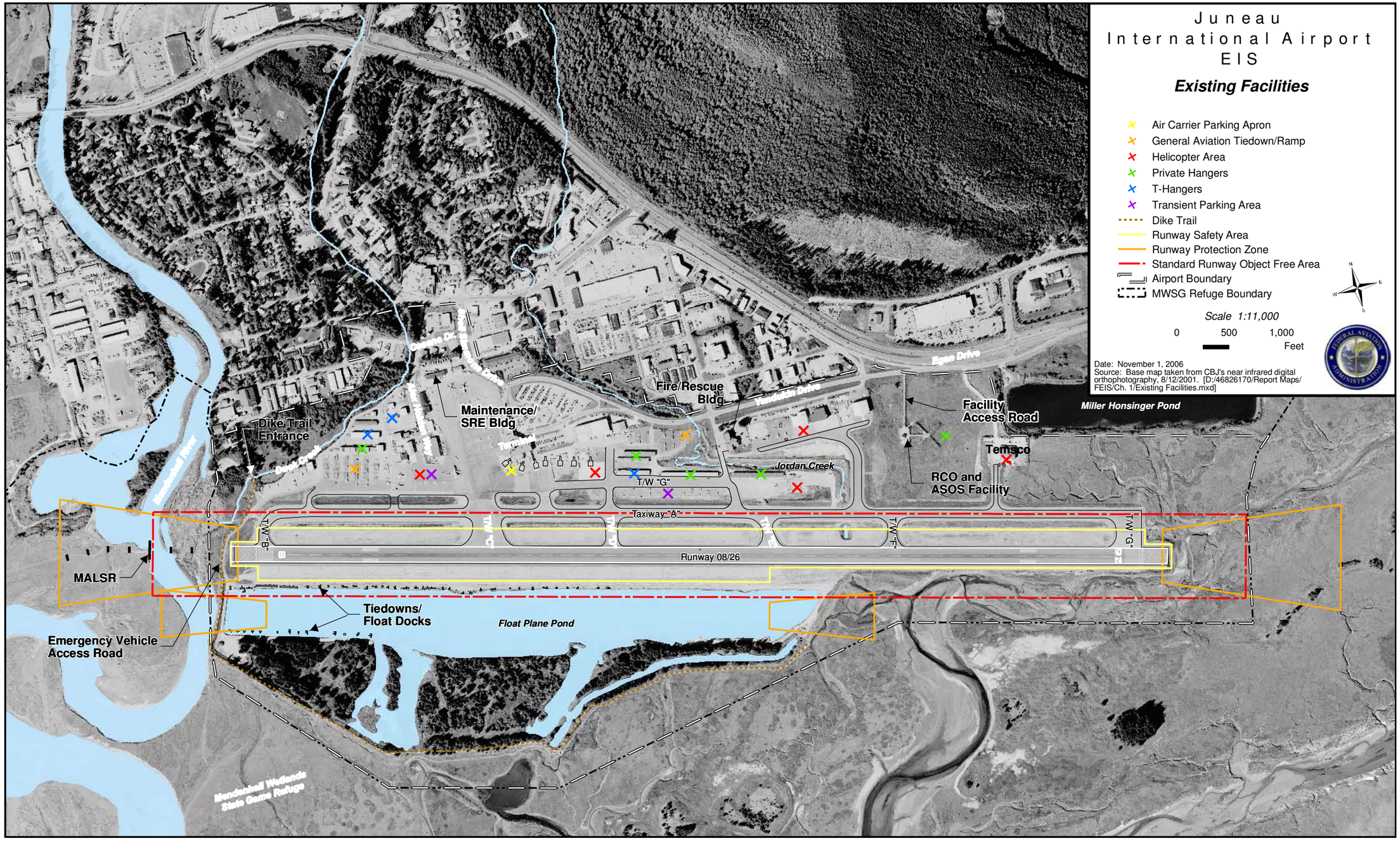

Figure 2. Existing facilities.

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runway. It is approximately 362 feet wide for approximately 3,500 feet of runway length and is 500 feet wide for the remainder of the runway.

There are several aircraft parking aprons at JNU. The passenger terminal apron and commercial-based aircraft apron are currently co-located north of Runway 08/26 and consist of approximately 16 acres of aircraft parking and movement area. This apron serves the air carrier and based air taxi and general aviation fleet. A second apron, for general aviation, is located west of the terminal apron and provides roughly 3 acres of aircraft parking and movement space. Other general aviation aprons are located east of the terminal. In addition, there are numerous tenant helicopter-parking areas located adjacent to the parallel taxiway system (Taxiways A and H) and within the northeast quadrant of the Airport.

2.4 AIRPORT NAVIGATIONAL SYSTEMS

The Airport is situated in a mountainous region of southeastern Alaska. The mountainous terrain places limits on flight operations (e.g., weight limitations placed on some aircraft to ensure that these aircraft clear obstructions when departing). The FAA and JNU have been constantly improving facilities and seeking system improvements to increase the ability of the Airport to safely serve the passenger and cargo demand of the Juneau region.

Alaska Airlines has developed, received FAA approval for, and implemented special-use approach and departure procedures for each end of the runway. These procedures are based on the existing aircraft fleet mix, maximum passenger and cargo load weights, and aircraft operational performance. The Runway 08 special-use departure procedures (i.e., the Lemon, Fox, and the Gastineau Channel departures) and Area Navigation (RNAV) global positioning system (GPS) enable aircraft to safely operate to and from JNU during challenging atmospheric conditions.

Operating conditions at JNU are rather complex due to the changing weather and winds and the need for aircraft to maintain adequate clearance from terrain and other aircraft. Most aircraft are capable of operating into or out of JNU during Visual Flight Rule (VFR) conditions. However, during Instrument Flight Rule (IFR)-only conditions, special procedures and equipment are required to ensure that aircraft maintain adequate clearances from the surrounding terrain. As noted earlier, Alaska Airlines has developed and received approval to use special approach and departure procedures when operating during poor weather conditions at JNU.

According to data for JNU obtained from the National Climactic Data Center, the winds in Juneau are highly variable, with both wind speed and direction influenced by the terrain. These types of conditions typically result in a need for extensive aircraft maneuvering to align the aircraft for a landing, causing a shorter stabilized approach to the runway. Turbulence and wind shear are common in the vicinity of the Airport. Temperatures often hover near freezing throughout the winter, and the maritime location contributes to extensive icing conditions. Alaska Airlines has provided correspondence estimating that contaminated runway issues were encountered at the Airport approximately 20 days per year. All of these factors can result in long, fast landings (FAA 2002).

When considering the published "public-use" approaches, the Airport can be expected to experience VFR conditions approximately 90.1% of the time, and to be below minimums approximately 9.9% of the time. The term "below minimums" indicates the percentage of time that the ceiling or visibility is so reduced that most operators cannot operate at JNU.

In consideration of the "special-use" approaches authorized for use only by Alaska Airlines, the Airport can be accessed under IFR conditions an additional 6.9% to 8.2% of available time, depending on which runway is utilized for landing. This means the Airport would be below minimums, for Alaska Airlines equipment, approximately 1.7% and 3.0% of the time annually. As a result, Alaska Airlines has improved its service reliability at JNU by being able to operate under special use approaches about 30 more days per year. However, weather conditions during about 11 days annually are still so poor (below minimums) that the airline will experience flight cancellations.

2.5 AIRPORT FACILITIES

JNU maintains a number of existing facilities for a variety of tenants, ranging from private aircraft parking and storage to commercial aviation services and military operations. The following subsections briefly mention only those facilities for which an action has been proposed and evaluated in the FEIS: snow removal equipment and maintenance building, fuel farm access road, and general and commercial aviation parking and storage.

2.5.1 SNOW REMOVAL EQUIPMENT AND MAINTENANCE BUILDING

The existing Airport snow removal equipment and maintenance building, located immediately north of the commercial aircraft apron, covers approximately 5,200 square feet. The main building was designed to accommodate three pieces of airfield snow removal equipment: a grader, loader, and a plow truck. Since the early 1950s, the snow removal equipment and maintenance building has also served as a storage facility for some of the snow removal equipment, although currently, because of the space limitations, many pieces of equipment are left outside. Another hangar, built in the 1940s and across the terminal from the snow removal equipment and maintenance building, serves as storage for sand, pavement de-icing/anti-icing compounds, and other materials and supplies.

2.5.2 FUEL FARM ACCESS

The main bulk fuel storage area ("fuel farm") at the Airport is located northwest of the snow removal equipment building (see Figure 2). Access to and from the bulk storage fuel farm for aviation and jet fuel is not direct, and refueling tanker trucks are required to travel outside of the secure Airport environs on Alex Holden Way to reach the terminal aviation ramp.

2.5.3 AVIATION FACILITIES: EXISTING DEMAND AND PROJECTED NEEDS

Aircraft based at or using JNU can be classified as either rotary wing (i.e., helicopters) or fixed wing. Approximately 35 acres are being used at JNU to accommodate aircraft: this area includes hangars and aircraft parking. The Master Plan published in 2000 identified a need for more

facilities and problems with the existing layout (with respect to aircraft spacing, mixed aircraft types in common areas, and other safety and operational concerns). A comparison of the Airport operational forecast against FAA's Terminal Area Forecast (TAF) for 2004 was conducted for the EIS, which illustrates the current demands for aviation facilities as well as the projected increased need for hangars and parking sites. Table 1 presents the forecasted aviation facility needs for JNU through the year 2015, derived for the EIS and using Airport Waiting List data for storage space.[1]

Table 1. Existing and Projected Future Aviation Facility Requirements

Facility/Aircraft	Number Existing and Approved [1]	Additional Demand [2]	EIS Forecast (year 2015)	Projected Number Increase [3]
T-Hangars/Executive Hangars	80	16	116	36
Other Hangars (Large Private/Commercial) [4]	9	1	16	7
Transient Aircraft Tiedowns	128	var. [5]	153	25
Based Aircraft Tiedowns	196	var. [5]	194	<2>
Helicopter FBO [6]	5	2	6 [7]	2 [8]
Based and Transient Helicopter Parking Sites	32	7	46 [7]	14

[1] Total number in use as of June 2004 as well as those in construction or already authorized but not yet in use.

[2] Only shows additional demand over and above value in previous column. Based on February 2004 Wait Lists. Recent data indicates greater demand exists for commercial and private hangars.

[3] Difference between demand in year 2015 vs. number existing and approved.

[4] Number of aircraft stored can vary by size and need, particularly for commercial hangars. For example, Wings hangar is approximately 20,000 sq/ft.

[5] Current tie-down needs vary according to available hangar space, seasonal operations, etc.

[6] FBO = Fixed Base Operator; typically includes hangar, building, access road, aircraft parking, vehicle parking, and operational area.

[7] Helicopter forecasts based on Master Plan, as FAA's Terminal Area Forecast does not track or forecast helicopter operations.

[8] Demand already exceeds Master Plan forecast.

The greatest deficiency is the availability of executive hangars and T-hangars. The forecasts indicate that the space needed for T-hangars and executive/corporate hangars will increase from that currently available by almost 50% through the planning horizon (2015). As of March 2006, there were 29 people on the waiting list for an executive or T-hangar, and two companies on the commercial hangar waiting list (Mello 2006). Currently, aircraft are parked in obscure places or with insufficient space that is cramped, thus, there is unnecessary aircraft movement and a lack

[1] Needs are based on review/compilation of the JNU Hangar Waiting list, February 2004.

of separation between aircraft and operational surfaces, all of which result in potential safety concerns.

The EIS considered the spatial requirements to provide for all of the current needs plus forecasted needs. Based on the existing demand for facilities and projected growth in demand for aviation services, the EIS study team estimated that approximately 9.1 additional acres will be needed. These estimates do not fully account for the infrastructure to support such growth, such as additional taxiways, public access routes, snow storage, utilities, and vehicle parking. In accordance with standard airport design practices, some operational flexibility is also desirable to accommodate changing economic conditions or social needs or unanticipated requests for aircraft storage and parking.

2.5.4 FLEET MIX AND CRITICAL AIRCRAFT

An evaluation of the aircraft fleet mix was conducted for the EIS, in part to determine runway length requirements as a component of developing alternatives for RSAs. This evaluation concluded that Alaska Airlines' fleet was expected to continue to be dominated by the B-737 series of aircraft, with both the B737-200 and B737-400 models currently employed at JNU, and much less frequent use of their 737-NGB series (particularly the B737-700 and B737-900). The FEIS documented that the B737-400 would continue to be the critical aircraft at JNU for takeoffs, while the B737-900 is and would be in the reasonably foreseeable future the critical aircraft for landings. In addition, the runway analysis demonstrated that the current runway length is adequate for all typical, fully-loaded aircraft using JNU under most conditions. The only exception is for the B737-900 aircraft landing on contaminated runway (also designated as "Poor" runway landing condition).

2.6 WILDLIFE HAZARD MANAGEMENT

In accordance with 14 CFR Part 139.337(d), JNU is responsible for development and implementation of a Wildlife Hazard Management Plan (WHMP), including the need to take immediate measures to alleviate wildlife hazards whenever they are detected. JNU has a WHMP under which it operates in compliance with FAA requirements. After completing an updated Wildlife Hazard Assessment (WHA) in 2001, the Airport submitted a revised WHMP in April 2002. Because some actions proposed in the WHMP would have a significant affect on the environment the FAA decided to include an analysis of those actions and alternatives within the FEIS.

3.0 NEED FOR ACTION

The CEQ regulations implementing NEPA require that an EIS specify the underlying Purpose and Need to which an agency is responding in proposing actions and alternatives (40 CFR §1502.13). The following sections summarize the Need to improve Airport facilities and the stated Purpose for actions proposed by the Airport and FAA. More information documenting the Needs may be found in Section 1.4 of the Final EIS.

3.1 RUNWAY SAFETY AREA (RSA)

The RSA dimension for Runway 08/26 is defined as a 500-foot-wide rectangular area centered upon the runway and extending lengthwise 1,000 feet beyond each runway end. These dimensions are based on the type of design aircraft using the Airport, specifically the wingspan and approach speed of the design aircraft.[2] Shortly after publication of the Draft EIS, FAA issued new guidance for RSA undershoot protection, reducing the required RSA length from 1,000 feet to 600 feet beyond each runway end (FAA 2004). Overshoot protection remained unchanged at 1,000 feet beyond each runway end.

Under dry conditions, the RSA should be capable of supporting occasional aircraft that could overrun, underrun, or veer off the runway without causing structural damage to the aircraft, as well as supporting aircraft firefighting and rescue equipment. In order to meet federal special grant conditions associated with a runway rehabilitation conducted in 1997, the RSA must be brought into compliance with FAR Part 139 (Public Law 109-115) no later than December 31, 2015. The deficiencies associated with the runways at JNU include:

- insufficient lateral RSA along approximately 3,500 feet on the south side of the east portion of the runway,
- a relatively small amount of insufficient lateral RSA on the north side of the runway, and
- runway-end RSAs that are too narrow and more than 700 feet too short.

The deficiencies described above illustrate the Need to bring the Airport into compliance with FAA's standards for RSA. In doing so, the Airport shall not be required to reduce the length of the runway or declare the length of the runway to be less than the actual pavement length in order to meet the FAA requirements for RSAs[3]. Improvement of the RSA will meet FAA's statutory responsibility to ensure that the safe operation of the Airport and runway system is the highest aviation priority (49 U.S.C. §47101[a][1]).

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2 The design aircraft currently using or projected to use JNU fall within the wingspan category of Group III and approach category of C, thereby defining the 1,000 feet x 500 feet RSA dimensions.

3 See Public Law Section 502 Runway Safety Standards, Vision 100 – Century of Aviation Reauthorization Act, December 12, 2003.

3.2 IMPROVE NAVIGATIONAL ALIGNMENT

Flight operations into and out of JNU are complicated by mountainous terrain, inclement weather including strong winds, precipitation, and fog with limited visibility, and sometimes slippery runway conditions caused by ice and snow. When the Airport is below ceiling or visibility minimums, some aircraft are not capable of landing or taking off, creating delays and, in some cases, flight cancellations. As a result, flight schedule reliability, particularly for commercial traffic, is reduced, which has clear economic and social impacts.

Additional approach lighting is needed to improve pilot alignment and create safer landing conditions for all aircraft during the transition to visual references used in landing at night and during poor weather conditions. Improvements to the navigational system would help to fulfill FAA's statutory responsibility to ensure that the safe operation of the Airport and runway system is the highest aviation priority.

3.3 IMPROVE AND INCREASE AVIATION FACILITIES

The Purpose of improving and adding additional aviation facilities is to efficiently meet current and reasonably foreseeable Needs for snow removal resources, access to the fuel farm, and aircraft parking for commercial and general aviation users. All of these actions support FAA's statutory responsibility to ensure that the safe operation of the Airport and runway system is the highest aviation priority.

3.3.1 SNOW REMOVAL EQUIPMENT AND MAINTENANCE FACILITY (SREF)

The current snow removal equipment building does not meet building codes or worker safety codes. Because of insufficient storage space inside the building, much of the equipment is stored outside, which reduces equipment life expectancy and increases maintenance costs. Equipment status is a major reason for delays to airfield operations and other time-critical activities, such as keeping the runway surface cleared to a condition suitable for landing and takeoff in wet snow. The sand storage hangar, located across the terminal from the current snow removal equipment and maintenance building, is also in a state of disrepair. This facility was not designed as a storage area for efficient loading and unloading of sand, nor was it constructed to hold airfield chemicals, such as de-icing compounds.

JNU has a Need for a larger SREF that is designed to shelter equipment and reduce mobilization time for snow removal operations, and a new sand storage building designed for such use. Co-location of snow removal equipment and maintenance and the sand shed would also increase operational efficiency.

3.3.2 FUEL FARM ACCESS

A new access route between the bulk fuel farm and the general aviation ramp has been proposed by JNU to keep fuel supply trucks off public thoroughfares, thereby creating safer traffic conditions. A new fuel farm access road would also increase airfield efficiency because of the shorter distance trucks would travel to reach the aviation ramp. The new road would provide

better security for the Airport and fuel supply trucks, as all fuel loading and transport would take place on Airport property.

3.3.3 AIRCRAFT PARKING AND STORAGE

At the present time, aircraft at JNU are parked in obscure places or with insufficient space, resulting in unnecessary aircraft movement and inadequate separation between aircraft and operational surfaces. Additional facilities and apron space are needed to satisfy existing private and commercial aviation demands and to accommodate the projected growth in aviation needs, thereby satisfying other Airport objectives such as separating general aviation aircraft from commercial operations and relieving facility and parking congestion.

These developments would reflect FAA's responsibility to undertake airport construction and improvement projects that increase the capacity of facilities to accommodate passenger and cargo traffic to the maximum feasible extent, so that safety and efficiency increase and delays decrease (49 U.S.C. §47101[a][7]).

3.4 WILDLIFE HAZARD MANAGEMENT PLAN (WHMP)

There have been a number of wildlife strikes to aircraft approaching or departing JNU. FAA's strike database includes 44 documented strike reports for JNU during the years 1990 through 2005 (Cleary 2006). Except for one reported bat strike, all of the strikes involve birds including a variety of species such as herons, owls, sandpipers, sparrows, ducks, ravens, and geese. One recent major event occurred on August 17, 2004. An Alaska Airlines B-737-400 was struck on departure from Runway 26 by a medium-sized bird at an elevation of approximately 1,000 feet. According to the wildlife strike report, the bird was ingested into one of the engines. No passenger or crew injuries were reported, but the aircraft was out of service for inspection and repair for approximately 24 hours.

JNU published a revised WHMP (City and Borough of Juneau [CBJ] 2002) and identified species and problem areas presenting a hazard to aviation. In accordance with FAR Part 139, an updated WHMP is needed to implement habitat modifications and management actions that will reduce potential for aircraft collisions with wildlife.

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4.0 SPONSOR'S PROPOSED ACTION

The following sections briefly summarize the actions proposed by the Airport Sponsor to meet the Purpose and Need identified in previous sections. Each of these actions is described in greater detail in Chapter 2 of the FEIS.

4.1 INCREASE RUNWAY SAFETY AREA (RSA)

To bring the Airport into compliance with FAA standards for RSA, the current runway would be modified and new RSA would be added to runway ends and sides. The Runway 08 landing threshold would be displaced 120 feet to the east, and another 230 feet of RSA would be added to the west end, resulting in a safety area that meets FAA standards of 1,000 feet in length for Runway 26 overruns, 600 feet in length for Runway 08 undershoots, and 500 feet in width for lateral excursions. Additional fill and disturbance would be required for about 96 more linear feet west of the RSA to accommodate relocation of the Float Plane Pond access road and Dike Trail/Emergency Vehicle Access Road (EVAR).

The Runway 26 threshold would be extended 520 feet to the east, so that approximately 850 linear feet would need to be filled on the east end of the runway for the threshold relocation and RSA construction. The parallel taxiway (Taxiway A) would also be extended approximately 520 feet east with a connector to the runway at the east end, so that aircraft can taxi to and from the new Runway 26 threshold. The safety area would meet FAA standards with a 1,000-foot overrun protection for Runway 08, 600-foot undershoot protection for Runway 26, and 500 feet in width for lateral excursions.

In addition, the lateral RSA along approximately 3,500 feet of the south side of the runway would be extended out an additional 132 feet to meet FAA's 500-foot width requirements for RSA. Finally, RSA would be extended out over Jordan Creek on the north side of the runway, between the runway and Taxiway A. This action, the Airport's Proposed Action, is Alternative RSA-5E.

4.2 INSTALL MALSR ON RUNWAY 26 APPROACH

To improve navigational alignment with Runway 26, FAA has proposed to install a medium-intensity approach lighting system with runway alignment indicator lights (MALSR). The MALSR would consist of up to 14 light support towers spaced at 200-foot intervals, extending 2,400 feet east of the threshold. Access to and maintenance and repair of the MALSR would be accomplished with a permanent, at-grade road. This action, the Airport's Proposed Action, is Alternative NAV-2B.

4.3 SNOW REMOVAL EQUIPMENT AND MAINTENANCE FACILITY (SREF)

JNU has proposed to construct a new, approximately 44,000-square-foot SREF to be co-located with a new, approximately 12,100-square-foot sand and chemical storage building on 6.7 acres of Airport property in the Northeast Development Area. The facility would include parking,

room for equipment turnaround and changeovers, outside loading and unloading, and snow storage. This action, the Airport's Proposed Action, is Alternative SREF-3B1.

4.4 FUEL FARM ACCESS ROAD

JNU has proposed to construct a new road that leads directly south from the fuel farm to the main Airport facilities. This roadway would directly link the bulk fuel storage facility with the aircraft operating area. The proposed roadway alignment would require installation of a bottomless arch or bottomless box culvert in Duck Creek. This action, the Airport's Proposed Action, is Alternative FF-1.

4.5 AIRCRAFT PARKING AND STORAGE

Recognizing the current facility deficiencies at the Airport and relying on aviation demand estimates generated for the EIS, JNU has proposed to develop additional transient and based aircraft parking and tie-downs in the Northeast and Northwest Development Areas, 38 new T-hangars and executive hangars, primarily in the Northwest Development Area, and two new, fixed-base helicopter operations and hangars in the Northeast Development Area. Commercial operations in the Northeast Development Area would be expanded with the addition of seven new commercial or corporate hangars and/or fixed base operations. This action, the Airport's Proposed Action, is Alternative FW/RW-2.

4.6 IMPLEMENT A REVISED WILDLIFE HAZARD MANAGEMENT PLAN (WHMP)

The Airport has proposed a number of wildlife habitat modifications and hazard management actions, listed below, that would constitute a revised WHMP.

- Filling and grading the wetlands located near the mouth of Duck Creek, on and off Airport property west of Runway 08.
- Relocating the mouth of Duck Creek to the northern Airport boundary.
- Removing swales and areas that pond water along the edges of the runway and parallel taxiway by filling, leveling, and grading the areas.
- Altering vegetation management techniques and increased hazing in the infield areas.
- Removing vegetation from the Float Plane Pond by dredging all waters south of the Float Plane Pond and the main portion of the pond (where vegetation exists) to a depth of at least 10 feet.
- Removing the dam at the mouth of Jordan Creek.
- Implementing an adaptive hazard management approach to the Float Plane Pond woodlands. Initial habitat modifications would include:
    - Installation of a deer fence along the north side of the dike, from the existing fence on the west end to the existing fence on the east end.
    - Removal of corvid nests, as needed, to prevent re-establishment of crow rookeries in the woodlands.

5.0 NECESSARY FEDERAL, STATE, AND LOCAL ACTIONS

The FAA has statutory authority to ensure that the safe operation of JNU and the nation's airport and airway system is the highest aviation priority (49 U.S.C. 47101[a][1]). In carrying out its responsibilities, the FAA is responsible for ensuring that its actions are in compliance with NEPA. The FAA's Airports Program is responsible for analyzing the environmental impacts and consequences of a proposed federal action involving airports. FAA is also responsible for ensuring that airport development projects provide for the protection and enhancement of natural resources and the quality of the environment (49 U.S.C. 47101[a][6]). As the lead federal agency, the FAA was responsible for supervision of preparation of the EIS (40 CFR §1501.5[a]) and for requesting the participation of cooperating agencies as defined by CEQ (40 CFR §1506.6).

There are other decisions FAA must make in conjunction with these actions. The Airport Layout Plan must be updated to reflect changes, and JNU must receive FAA approval of the updated Airport Layout Plan. FAA will also ensure that proposed development will not adversely affect safe and efficient use of airspace. Full approval of the revised WHMP depends on FAA's approval of the updated Airport Certification Manual. FAA and the Airport will develop an airport capital improvement program to financially assist the Airport with implementation of those actions determined to be eligible for FAA funding through the federal grant-in-aid program and the use of passenger facility charge funds.

Under the Department of Transportation Act (49 U.S.C. Subtitle I, Section 303), the FAA must consult with the landowners of Section 4(f) properties and officials having jurisdiction over those properties. These properties can include publicly-owned park lands, recreation areas, wildlife or waterfowl refuges, and historic sites of local, state, or national significance. Potential Section 4(f) properties must be identified and described, and potential impacts to them disclosed, in the EIS. If one or more of the actions considered in the EIS would require the use of Section 4(f) lands, the FAA must demonstrate that there is no feasible and prudent alternative unless impacts are determined to be *de minimis*. In addition, the action(s) must include all possible planning to minimize harm resulting from the use of Section 4(f) lands.

FAA recognized before scoping the EIS that numerous state, federal, and local agencies would have important roles in the projects' analyses through permitting authority, coordination requirements, and other jurisdictional standing. Importantly, many of these agencies also have substantial expertise concerning important environmental resources potentially affected by the projects, particularly for water resources, fisheries, wetlands, and wildlife. During the course of the EIS FAA held more than 35 meetings with an interagency working group to solicit early and critical feedback on alternatives, resource impacts, impact minimization features, mitigation and functional assessment criteria, and numerous other topics. The committed participation of these agencies greatly benefited the analysis and strongly influenced the scope of the projects. In addition, consistent agency involvement facilitated development of a compensatory mitigation plan and established a simplified process for environmental permitting.

There are a number of federal, state, and local permits, approvals, and regulatory determinations and consultations that must be approved and/or completed for the Sponsor's proposed actions or alternatives to those actions to be implemented. Included are other FAA determinations and approvals concerning specific changes to the Airport and airspace. Table 2 lists the possible approvals, permits, consultations, and determinations necessary for the actions described in the FEIS and approved in this ROD to be implemented.

Table 2. Permits, Approvals, Certifications and Consultations for Implementation of JNU Projects

Agency	Action	Authority and Basis of Action
FAA	Record of Decision	42 U.S.C. §4321 et seq. and 40 CFR §1500 et seq. The Record of Decision will document authorization for actions approved.
	Certifications	Federal Aviation Regulation Part 139 FAA approval of the Airport's Certification Manual. 49 U.S.C. §44502(b). A certification that the proposed facility is reasonably necessary for use in air commerce or from the national defense.
	Approval	49 U.S.C. §40103; 49 U.S.C. §44502; and 49 U.S.C. §47105. FAA must approve Airport Layout Plan revisions and make a determination of no adverse affect to safe, efficient use of airspace.
	Approval and Funding	49 U.S.C. §47104 et seq. and 49 U.S.C. §470117. FAA will determine how much financial support can be provided for the proposed development projects.
	Approval	49 U.S.C. §44502(a)(1). FAA must approve relocation or upgrade of existing navigational aids.
	Determinations	14 CFR Part 77. Concerning possible obstructions to navigable airspace. 14 CFR Part 157. Whether FAA objects to JNU's development proposal from airspace perspective. 49 U.S.C. Subtitle I, Section 303, Department of Transportation Act, Section 4(f). Concerning impacts to public parks, recreation area, or wildlife and waterfowl refuge of national, state or local significance.
	Consultation	Section 307 of the Coastal Zone Management Act (16 U.S.C. §1458(c)). Requires that the applicant certify that the project is in compliance with an approved State Coastal Zone Management Program and that the State concurs with the applicant's certification prior to FAA approval of the project and Airport Layout Plan.

Table 2. Permits, Approvals, Certifications and Consultations for Implementation of JNU Projects

Agency	Action	Authority and Basis of Action
U.S. Army Corps of Engineers	Permit	Section 10 of the Rivers and Harbors Act (33 U.S.C. §403). Approval required for any structures to be placed in navigable waters of the U.S., or for work in or affecting navigable waters of the U.S.
	Permit	Section 404 of the Clean Water Act (33 U.S.C. §1344). Approval required for the discharge of dredged and/or fill material into waters of the U.S., including wetlands.
	Permit	Section 103 of the Marine Protection, Research, and Sanctuaries Act (33 U.S.C. §1413). Approval required for the transport of dredged material for the purpose of dumping it into ocean waters.
	Consultation	Section 307 of the Coastal Zone Management Act (16 U.S.C. §1458[c]). Applicant must certify that the project complies with an approved State Coastal Zone Management Program and that the State concurs.
NMFS	Consultation And Opinion	Section 7 of Endangered Species Act. NMFS will issue Biological Opinion concerning potential effects of the Airport actions on endangered or threatened species.
	Consultation and Recommendation	Magnuson-Stevens Act (16 U.S.C. §1855[b]). NMFS will provide a conservation recommendation to the FAA and the agency must provide a detailed response in writing documenting measures for avoiding, mitigating, or offsetting the impacts on essential fish habitat.
	Consultation	Marine Mammal Protection Act (16 U.S.C. §1361-1421; Pub. L. 92-522). Service will determine whether the actions being considered have the potential to constitute a "taking" of marine mammals.
	Consultation	Fish and Wildlife Coordination Act (16 U.S.C. §661-667e). Requires consultation with NMFS (and FWS and ADF&G) when waters are proposed or authorized or permitted to be controlled or modified, so that loss of and damage to wildlife resources can be prevented. Pursuant to authority of this Act, NMFS (and FWS) also provide comment and recommendations to the Corps concerning Clean Water Act Section 404 Permits and Section 10 Permits issued under authority of the Rivers and Harbors Act.

Table 2. Permits, Approvals, Certifications and Consultations for Implementation of JNU Projects

Agency	Action	Authority and Basis of Action
FWS	Permit	Migratory Bird Treaty Act (regulations at 50 CFR Part 21.43). A federal depredation permit is required for the destruction of birds to control wildlife hazards at airports.
	Permit	Bald and Golden Eagle Protection Act (regulations at 50 CFR Part 22.23). An eagle depredation permit which allows the harassment of bald eagles but prohibits the killing, injuring, or capturing of eagles may be issued by the FWS for the alleviation of hazards to aircraft safety.
	Consultation	Fish and Wildlife Coordination Act (16 U.S.C. §661-667e). See above, as described for NMFS.
EPA	Consultation	Section 309 of Clean Air Act. This Act provides the EPA with authority to review and comment on federal actions conducted under NEPA.
	Permit	Section 402 of the Federal Water Pollution Control Act.
ADF&G	Special Area Permit	5 AAC §95.420. A special area permit is required for any habitat-altering work, including any construction activity in a designated state refuge, critical habitat area, or sanctuary.
	Public Safety Permit	Permit for Scientific, Educational, Propagative, or Public Safety Purposes (5 AAC §92.033). A public safety permit for the taking of game species at JNU is necessary for all direct wildlife control operations.
Alaska SHPO	Consultation and Concurrence	Section 106 of National Historic Preservation Act. Written statement from SHPO acknowledging appropriate consultation was undertaken and concurring with the findings of the field inventories should be received as evidence of compliance with the governing legislation.
Alaska DEC	Certification	Section 401 of the Clean Water Act (33 U.S.C. §1344). Certification would be required that the Airport actions will meet state water quality standards before federal permits are approved, with ADEC maintaining certification authority for the NPDES program (EPA has permitting authority).

Table 2. Permits, Approvals, Certifications and Consultations for Implementation of JNU Projects

Agency	Action	Authority and Basis of Action
ADNR Division of Lands	Approval	Disposal of Refuge property through a sale or lease to the Airport (to accommodate one or more of the actions) would require a finding that the action is in the best interest of the State of Alaska.
	Permit	Leasing and Permitting of State-owned Tidelands (11 AAC §58/11 AAC §62.690-730). In some instances, the State will provide a lease or permit for use of State-owned tidelands. Actions considered could involve lease, easement on, or purchase of State-owned lands.
ADNR, OHMP	Permit	Anadromous Fish Act (AS §41.14.870). Requires that an individual or governmental agency notify and obtain approval from ADNR for all activities within or across a specified anadromous water body and all instream activities affecting a specified anadromous water body.
	Permit	Fishway Act (AS §41.14.840). Requires that an individual or governmental agency notify and obtain authorization from the ADNR for activities within or across a stream used by fish if the ADNR determines that such uses or activities could represent an impediment to the efficient passage of fish.
	Consistency Determination	Alaska Coastal Management Program (11 AAC 112). The ACMP establishes standards against which the Airport actions may be evaluated, including requirements for management of coastal habitat and protection and preservation of land, air, and water quality. The Coastal Management Program manages the Consistency Review that ensures consideration of and compliance with all applicable requirements.
CBJ	Review and Approval	Enforceable coastal zone ordinances under the CBJ Land Use Code 49.70.950F. CBJ Ordinance 49.70.400 requires receipt of FEMA permit for development in a flood hazard area.
	Review and Approval, Permit	Juneau Wetland Management Plan as codified in CBJ Land Use Code 49.70.1065-1075. Any elements of the project involving fill of wetlands and impacts to habitat in general would require evaluation for consistency with the Juneau Coastal Management Plan and the ACMP, with possible issuance of conditional use permit.
	Permit	New buildings, modifications to existing buildings, and preparation for structures and surface would require building and grading permits from CBJ. Wetlands permit required for development in Class C and D (minor) wetlands under the jurisdiction of CBJ.

6.0 ALTERNATIVES CONSIDERED

Evaluation of alternatives to the Proposed Action is required by NEPA and by the CEQ (40 CFR §1502.14). The reason for this statutory mandate is that some aspects of the proposed actions may affect the environment in a manner that could be minimized or even eliminated by using an Alternative Action. Federal law requires that "possible and prudent" alternatives be included in the analysis when significant impacts would occur (49 USC 47106[c][1][B]). In the case of JNU, FAA was also bound to apply a similar test of "prudent and feasible" alternatives due to the possible impacts of proposed actions on two Section 4(f) properties, the Mendenhall Wetlands State Game Refuge (the "Refuge") and Dike Trail.[4] A range of reasonable alternatives with the potential to meet the Purpose and Need for the different proposed actions was identified in the EIS. Those that did not meet the purpose and need or were not technically feasible, economically practical, or otherwise prudent were eliminated from detailed consideration in the EIS.

For each of the needs described in Section 1.4 of the FEIS, FAA identified reasonable alternatives, including those developed in response to public scoping concerns and others addressing specific environmental or engineering issues presented by the proposed actions. However, the process of identifying alternatives was not static, and FAA continued to consider new alternatives up until publication of the Draft EIS and modifications to some alternatives during preparation of the FEIS. The continual "evolution" of alternatives was particularly true for RSA alternatives, as FAA responded to changes in federal legislation and agency directive, ongoing comment and recommendations from state and federal cooperating agencies, and public and Sponsor comment on the Draft EIS.

The following sections summarize the alternatives for each of the identified needs. Each section includes a two-part description. First, the range of alternatives initially considered is discussed, and, second, the alternatives considered in detail are described. References are provided to the applicable sections of the FEIS containing alternatives descriptions and rationale for including or eliminating alternatives from detailed analysis. The analysis included a "No Action" alternative for each of the needs.

6.1 RUNWAY SAFETY AREA

FAA guidance presents the following possible types of alternatives to consider when addressing RSAs that do not meet standards (FAA 1999):

- Construction of traditional graded areas surrounding the runway. Relocation, shifting, or realignment of the runway (while maintaining runway length).
- Reduction in the runway length where existing runway length exceeds that which is required for the existing or projected design aircraft.
- A combination of runway relocation, shifting, and grading.

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[4] Under Section 4(f) of the U.S. Department of Transportation Act (actually, DOT Section 303[c]), an alternative is feasible and prudent if it does not: 1) create any truly unique or unusual factors, 2) have costs of extraordinary magnitude, 3) result in community disruption of extraordinary magnitude, or 4) contain an accumulation of these factors.

- Declared distances.
- Engineered Materials Arresting Systems (EMAS).
- Feasibility of increasing the size of the RSA by including additional land parcels, even if it will result in an RSA of an irregular size.

FAA identified a range of runway safety area alternatives based on the above array of possible means to meet standards. It was quickly determined that, while numerous alternatives could be developed to meet the needs for RSA on runway ends, few options were available to bring the lateral safety areas up to standard.

6.1.1 LATERAL RUNWAY SAFETY AREA

Five alternatives, including the No Action, were identified for lateral RSA. Each alternative is described in more detail in Section 2.2.1 of the FEIS.

1. ***Clear and Grade along the Existing Runway Shoulders.*** Clearing, adding more fill material, and grading the existing shoulders of the runway would be required to address the RSA deficiency along the south side of the eastern portion of the runway shoulder. Depending on the configuration resulting from RSA improvements to the runway ends, up to 13.8 acres could need to be filled and graded to develop the lateral RSA. The estimated cost to construct this alternative is $2.1 million, based on the size of the safety area deficiency (which could vary with changes to runway thresholds).
2. ***Relocate or Realign the Runways and Taxiways.*** The primary runway at JNU could be relocated or realigned to achieve FAA standards for lateral RSA and to reduce environmental impact to important habitat. Although only the eastern portion of the RSA is deficient in width, the entire runway would have to be relocated north by approximately 136 feet (to maintain optimal aircraft performance). This alternative was deemed neither reasonable nor prudent, based on the excessively high cost to relocate the runway/taxiway system, changes to flight patterns and possible new terrain obstructions, and the potential loss of required navigational performance (RNP) procedures frequently used by Alaska Airline to land at and take off from JNU.
3. ***Construct an Elevated RSA Surface.*** A possible alternative to minimize environmental impacts would be to construct an elevated RSA surface on piers. The elevated pier structure would have to be designed to carry maximum aircraft loads, meet appropriate grading and surface standards, allow snow removal operations to be performed as determined necessary by the Airport, and accommodate fire fighting equipment positioning and other maintenance requirements. It was determined this structure would cost in excess of $80 million, many times more than a traditional fill and grade alternative. For this reason, an elevated RSA surface was found to not be prudent and was eliminated from detailed analysis.
4. ***Engineered Materials Arresting System.*** At airport locations where other alternatives are not practicable, the FAA, working with industry, has approved the use of an EMAS that will arrest the speed of an aircraft that overruns the ends of the runway. Although only approved for use on runway ends, FAA initially considered that an EMAS along the width of the JNU runway could be used to minimize environmental impact to estuarine

habitat south of the runway. However, because EMAS has not been approved for use as an RSA substitute along runway sides where 90 degree aircraft entry is unlikely, the technology was deemed not prudent or feasible and was eliminated from further consideration.

The only prudent and feasible alternative for achieving RSA compliance along the lateral length of the runway was found to be clearing, filling, and grading along the eastern portion of the east runway. Because the lateral safety area is also dependent on runway configuration, each of the runway-end RSA alternatives incorporates lateral RSA as a necessary component.

6.1.2 END-OF-RUNWAY SAFETY AREAS

Runway-end RSA alternatives were developed following the categories outlined in FAA Order 5200.8 and described earlier (FAA 1999). Important considerations in the initial screening of RSA alternatives are how each alternative would affect runway characteristics and how those changes could affect aviation operations at the Airport. Due to terrain, winds, weather, and other factors, the operating conditions at JNU are complex. Any changes to runway thresholds or declared lengths would necessitate revisions to special RNP procedures and conceivably the loss of the procedures. Any proposed changes to these procedures would require FAA review and approval for implementation.

In addition, changing the runway threshold location can have the same effect as shortening the runway because it can move the starting point of the takeoff closer to an obstruction. To safely perform the departure procedure, the aircraft would also have to carry less weight, possibly resulting in a payload reduction. To weigh the operational impacts for the alternatives, the FAA considered whether or not each alternative would affect the existing specialized procedures and, to the extent possible, the relative magnitude of that effect. Each of the alternatives initially considered for runway-end RSA is described in Section 2.2.2 of the FEIS. Table 2-5 of that document summarizes the rationale used to include or eliminate each alternative from detailed evaluation.

The following sections provide a summary description of nine RSA alternatives that were carried forward for complete environmental analysis. Sections 2.2.2 and 2.6 of the FEIS include a detailed description of each alternative. Each alternative incorporates the action necessary to also meet standards for the lateral RSA.

RSA-1: FILL AND GRADE EXISTING DEFICIENCIES

This alternative would add over 700 additional feet of 500-foot-wide RSA at both runway ends with no change in runway thresholds or operational procedures. The RSA at the Runway 08 end would be extended another 750 feet to the west. The supporting fill material, graded at a 4:1 slope, and access roads and Dike Trail/EVAR would extend the overall project footprint farther into the Refuge and into the Mendenhall River. RSA-1 would require relocation of the river around the end of the RSA, adding as much as 3,000 linear feet to the river course. It would also require the relocation of at least the lowermost 500 feet of Duck Creek (already being considered for other development purposes and wildlife hazard management) and of the EVAR/Dike Trail

and the Float Plane Pond access road. With a 4:1 support slope, the RSA on the east runway end would encroach about 10 feet in the Refuge. A new channel for the East Runway Slough would be constructed around the RSA embankment to ensure tidal exchange north and south of the runway is maintained. To construct this alternative the Airport would have to acquire access to approximately 10.5 acres of the Refuge west of the Airport through purchase, land transfer, or lease/easement.

No changes to the published "public-use" instrument approaches, Alaska Airline's existing "special use" RNAV approaches, or the Lemon and Fox turning procedures from Runway 08 would be necessary. There would be no need to modify Taxiway A for this alternative, nor would there be a need to modify the Runway 08 MALSR. This alternative represents no potential for changes to or loss of existing aviation operations.

Alternative RSA-1 would cost approximately $16.9 million to construct, at a present worth cost of $17.1 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $2.6 million.

RSA-5C: Displace Runway 08 Threshold, Construct Additional 26 Runway and Safety Area

Alternative RSA-5C combines a 446-foot relocation of the Runway 26 threshold with an equal displacement of the Runway 08 threshold. The combination of these two actions would preserve all landing lengths and the departure length on Runway 26 and would increase the accelerate stop distance for Runway 08. The parallel taxiway would be extended 446 feet to the east to provide taxiway access to the extended runway. Approximately 1,157 feet of fill would be necessary on the east end of the runway for the threshold relocation and construction of the RSA, including a 4:1 fill slope, and 400 feet of new disturbance would be added to the west runway end to complete the RSA and accommodate relocation of the Float Plane Pond access road and Dike Trail/EVAR.

Modifications to some Runway 08 departure criteria could be needed due to the change in Runway 26 threshold (which serves as a waypoint for Runway 08 special departures). Alternative RSA-5C would require minor revisions to the published public-use instrument approaches to Runway 08. This alternative would also necessitate revisions to Alaska Airlines' existing special-use RNP RNAV approach to both runways. The Runway 08 MALSR would have to be shifted in accordance with the new approach from the west as the threshold change is not within +/- 20 feet of the 200-foot spacing increment specified in FAA Order 6850.2A.

Approximately 9.0 acres of Refuge would have to be acquired, transferred, or leased to JNU for implementation of this alternative. An additional 2.1 acres of Refuge land east of the Airport would be disturbed for construction of the slough channel to connect wetlands south of Miller-Honsinger Pond and north of the runway with the Sunny Slough.

Alternative RSA-5C would cost approximately $14.7 million to construct, at a present worth cost of $14.9 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $2.5 million.

RSA-5D: Relocate Runway 26 Threshold, Construct Additional Runway and Safety Areas

Alternative RSA-5D retains the existing Runway 08 threshold but includes relocation of the Runway 26 threshold by 400 feet to the east. A 600-foot undershoot protection would be provided for approaches to both runways and, through the use of declared distances criteria, 1,000-foot overrun protection would also be provided. The Runway 26 changes and RSA additions east of the runway would extend to the Airport boundary with the Refuge. Approximately 750 feet of fill would be necessary on the east end of the runway for the threshold relocation and construction of the RSA. The RSA west of the Runway 08 threshold would be extended 350 feet, with more fill needed to accommodate the steep RSA embankment slope and relocation of the Airport perimeter fence, Float Plane Pond access road, and Dike Trail/EVAR.

This alternative was designed to avoid direct impacts to the Refuge east of the Airport and also to take advantage of other work west of the runway, specifically, fill of wetlands to reduce wildlife hazards. As a result, however, the area disturbed to support new RSA, relocate the Float Plane Pond access road, and maintain recreational access to the Refuge south of the Airport would extend into the east side of the Mendenhall River, directly west and southwest of the runway. To compensate for the possible hydrologic changes stemming from this work an approximately equal amount of dredging would be conducted on the west riverbank.

Relocation of the Runway 26 threshold allows the existing landing and takeoff distances to be retained for both runways. Revisions to the special-use instrument approaches for Runway 26 would be required, and modifications to some Runway 08 departure criteria may be needed due to the change in Runway 26 threshold (which serves as a waypoint for Runway 08 special departures).

Approximately 8.1 acres of Refuge would have to be acquired, transferred, or leased to JNU for implementation of this alternative. An additional 4.5 acres of Refuge land east of the Airport would be disturbed for construction of the relocated sloughs and tidal channels, including East Runway Slough.

Alternative RSA-5D would cost approximately $15 million to construct, at a present worth cost of $15.3 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $2.65 million.

RSA-5E: Displace Runway 08 Threshold 120 Feet and Construct Additional 26 Runway and Safety Area

This alternative was developed by FAA and CBJ, in consultation with the Cooperating Agencies, in recognition that some alternatives included in the DEIS would encroach into the Mendenhall River west of the Airport. Alternative RSA-5E therefore represents a modification of alternatives evaluated in the DEIS, combining the use of standard safety area construction with displaced and relocated thresholds to maintain full runway length. Each runway would have 600-foot undershoot protection and 1,000-foot RSA for overruns. JNU informed FAA that Alternative RSA-5E is the Sponsor's Proposed Action for the FEIS.

The Runway 26 threshold would be relocated east another 520 feet, followed by 600 additional feet of newly constructed RSA. To enable aircraft to taxi to and from the new Runway 26 threshold, the parallel taxiway would also be extended 520 feet east. The lateral RSA would be constructed for the length of the runway to provide the standard 500-foot RSA width. The location of the Runway 08 landing threshold would be displaced 120 feet east, although departures from that runway would begin at their current brake-release point. The runway ends would be designated on both runways to accommodate 1,000-foot RSA overrun protection. The Airport perimeter would be extended westward about 138 feet, with a new fence separating the Airport from the Refuge and relocated EVAR/Dike Trail. Inside the perimeter fence on Airport property a new 70-foot-wide Float Plane Pond access road would be constructed to the west of the 2:1 fill slope supporting the RSA. East of the road, a 600-foot RSA would be constructed, and the displaced threshold for Runway 08 would be located at the end of the RSA. The lights comprising the Runway 08 MALSR would have to be shifted to match the eastward threshold displacement.

The combination of Runway 26 threshold relocation and Runway 08 threshold displacement would slightly increase takeoff distance for Runway 08 and would preserve the existing distances for other operations, so no additional weight restrictions would be imposed. Revisions to the special-use instrument approaches for both runways would be required, as would revisions to the Runway 08 public-use instrument approaches. Modifications to some Runway 08 departure criteria may be needed due to the change in Runway 26 threshold (which serves as a waypoint for Runway 08 special departures). Any modification of navigation procedures would need to be reviewed and approved by the FAA prior to their implementation. The displacement of the Runway 08 landing threshold to the east, and resultant modification to the RNAV approach, would improve safety margins since the landing threshold would be located farther from the controlling obstructions at Pederson Hill. Relocation of the Runway 26 threshold to the east could result in penetration of the approach airspace by obstructions along the Gastineau Channel.

Approximately 4.1 acres of Refuge would have to be acquired, transferred, or leased to JNU for implementation of this alternative. An additional 5.0 acres of Refuge land east of the Airport would be disturbed for the construction of the relocated sloughs and tidal channels, including East Runway Slough. Alternative RSA-5E would have the least direct disturbance to the Refuge of any non-EMAS alternative.

Alternative RSA-5E would cost approximately $13.2 million to construct, at a present worth cost of $13.4 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $2.2 million.

RSA-6A: EMAS TECHNOLOGY – EMAS WITH DECLARED DISTANCES/RUNWAY 26 EXTENSION

This alternative, which incorporates the installation of EMAS at both runway ends, was designed to avoid direct disturbance to the Refuge east of the runway and minimize disturbance to the Refuge on the west runway end. The Runway 08 landing threshold would be displaced 188 feet east, but takeoffs would begin from the current departure threshold. The Runway 26 departure

threshold would be located 188 feet east of its current location, while the Runway 26 landing threshold would be at the current location. The existing landing distance would be maintained for both runways, while the takeoff distances would increase about 188 feet in both directions. The Runway 08 MALSR leading to the west end approach would have to be relocated east about 188 feet because of the threshold shift. There would be no need to modify Taxiway A for this alternative.

On the east runway end, approximately 323 feet of new disturbance would be needed to build the additional RSA and EMAS. On the west, Runway 08, end the EMAS would extend to just beyond the current Airport/Refuge boundary by adding about 175 additional feet of RSA embankment, for the EMAS, plus additional disturbance for fill slopes and relocation of the Float Plane Pond access road, security fence, and EVAR/Dike Trail.

RSA-6A would require minor revisions to the published public-use instrument approach and Alaska Airlines' existing special-use RNAV approach to Runway 08. Runway 08 departures, including the Lemon and Fox turning procedures, would be unaffected, and departure runway length would actually increase by approximately 188 feet for both runways. Because the Runway 26 landing threshold would remain unchanged there would be no impact to Alaska Airlines' existing special-use RNAV approach from the east. This alternative would necessitate only minor modification to the Runway 08 MALSR.

The Airport boundary would shift to the west as approximately 1.9 acres of Refuge land would be acquired, transferred, or leased to JNU. Approximately 0.2 acre of Refuge land east of the Airport would be disturbed for the construction of the relocated sloughs and tidal channels, including East Runway Slough.

Alternative RSA-6A would cost approximately $23.1 million to construct, at a present worth cost of $29.6 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $1.58 million.

RSA-6B: EMAS TECHNOLOGY – EMAS WITH DECLARED DISTANCES/RUNWAY 08 EXTENSION

This EMAS alternative was designed to minimize disturbance to wetlands and habitat east of the Runway, but the reduced footprint east of the runway would necessitate a greater disturbance area west of the runway. The Runway 26 landing threshold would be displaced 188 feet west, while takeoffs would begin from the current departure threshold. The Runway 08 departure threshold would be relocated 188 feet west of its current location, but the landing threshold would remain at the current location. The landing distance would be maintained for both runways, while the takeoff distances would increase about 188 feet in both directions. The Runway 08 MALSR would be unaffected by this alternative.

Approximately 135 feet of additional disturbance would be needed on the east runway end to build the remaining RSA and EMAS. On the west, Runway 08, end about 350 feet of new disturbance would be required for the new RSA and EMAS, but embankment construction and relocation of facilities would extend the disturbance footprint another 125 feet. As a

consequence, fill would extend into the Refuge and the east bank of the Mendenhall River, and some material would be dredged from the west river bank to compensate for possible hydrologic changes.

RSA-6B would require no changes to the published public-use instrument approach or Alaska Airlines' existing special-use RNAV approach to Runway 08. Runway 08 departures would begin about 188 feet west of the current threshold, offering a longer takeoff run that would have only minor, if any, positive affect on the Lemon and Fox turning procedures employed by Alaska Airlines, but new procedures would have to be developed and approved. The 188-foot shift in Runway 26 threshold location would also necessitate a revision to and approval for Alaska Airlines' existing special-use RNAV approach from the east. This alternative would require no change to most of the Runway 08 MALSR locations, although the easternmost lights would be converted from stanchions to frangible supports within the new EMAS and safety area prior to the threshold.

The Airport boundary would shift to the west as approximately 8.1 acres of Refuge land would be acquired, transferred, or leased to JNU. An additional 0.2 acre of Refuge land east of the Airport would be disturbed for the construction of the relocated sloughs and tidal channels, including East Runway Slough.

Alternative RSA-6B would cost approximately $25.8 million to construct, at a present worth cost of $32.2 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $1.9 million.

RSA-6C: EMAS TECHNOLOGY – COMBINED EMAS AND RUNWAY SAFETY AREA

This alternative was developed as a means of combining positive features of both standard (1,000-foot-long) RSA and EMAS technology. An EMAS system would be installed on the Runway 08 end, and a standard safety area would be constructed at the Runway 26 end. This alternative would reduce construction and operation costs relative to other alternatives incorporating EMAS at both runway ends, and it would cause no displacement or relocation of runway thresholds. Therefore, no change would be required to landing or departure procedures, and the Runway 08 approach MALSR would be unaffected by this alternative.

On the east runway end, approximately 711 feet of new disturbance would be needed to construct a full, 1,000-foot-long RSA, with an additional 39 feet of fill slope. On the west, Runway 08 end, 350 feet of EMAS and RSA plus fill slopes and relocation of existing facilities would extend the total disturbance footprint to 475 feet. Fill west of the runway would extend into the east bank of the Mendenhall River, and some material would be dredged from the opposite river bank to compensate for possible hydrologic changes.

The Airport boundary would shift to the west as approximately 8.1 acres of Refuge land would be acquired, transferred, or leased to JNU. An additional 4.5 acres of Refuge land east of the Airport would be disturbed for the construction of the relocated sloughs and tidal channels, including East Runway Slough.

Alternative RSA-6C would cost approximately $20.3 million to construct, at a present worth cost of $23.6 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $2.35 million.

RSA-6D: THRESHOLD DISPLACEMENT USING DECLARED DISTANCE CRITERIA WITH OPTION FOR EMAS

This alternative was developed by FAA after publication of the Draft EIS and in consideration of concerns expressed by JNU, CBJ, and others regarding EMAS alternatives. Alternative RSA-6D is a modification of other EMAS alternatives. The alternative would be designed to accommodate the future installation of EMAS at one or both runway ends with no additional disturbance. The operational drawback with this alternative is the landing distance available without EMAS would be reduced to 8,056 feet for each runway, about 400 feet less than existing conditions. With EMAS installed the landing distance for each runway would increase to approximately 8,644 feet.

A difference between this alternative and the west end configurations of other alternatives is that approximately 400 feet of RSA west of the Runway 08 threshold would be constructed to full pavement strength, meaning it would meet design standards for runway. This would ensure that aircraft departing to the east could have as much runway available for takeoffs as currently exists on Runway 08 at JNU. An additional 311 feet of runway safety area would be added to the east runway approach, creating a 600-foot undershoot RSA prior to the Runway 26 threshold. The entire 600 feet of RSA would be constructed at full pavement strength so as to meet design standards for runway use. This would allow departures on Runway 26 to begin at the east end of the RSA and pavement. This alternative does not include extension of the parallel taxiway for departures from either runway. Instead, aircraft that want or need to use the entire available takeoff pavement would be required to enter the runway at either Taxiway B, for Runway 08, or Taxiway G, for Runway 26 and back-taxi to the end of the full-strength pavement before turning 180 degrees to begin their takeoff roll.

Because the landing thresholds would remain in their existing locations there would be no need for changes to the published public-use instrument approaches or Alaska Airlines' existing special-use RNAV approaches. There would be no need to change the Runway 08 MALSR configuration.

Approximately 8.1 acres of Refuge west of the Airport would have to be acquired, transferred, or leased to JNU. An additional 0.2 acre of Refuge land east of the Airport would be disturbed for the construction of the relocated sloughs and tidal channels, including East Runway Slough.

Alternative RSA-6D would cost approximately $11.9 million to construct, at a present worth cost of $12.1 million over a 20-year life-cycle. The estimated cost to provide compensatory mitigation for the habitat lost and negatively affected by this alternative is $1.99 million.

RSA-8: NO ACTION ALTERNATIVE

CEQ regulations require the consideration of a No Action Alternative. While it is the FAA's belief that a No Action Alternative is not practicable, consideration is given to an alternative that essentially maintains existing conditions. In this case, the runway thresholds would be maintained in their present location and a runway length of 8,456 feet would be retained. This alternative would result in RSAs that are deficient by approximately 750 feet at each end and too narrow for more than 40% of the runway length if no action were taken to address the lateral RSA deficiencies.

6.2 NAVIGATIONAL ALIGNMENT

There are two general types of navigational systems, and a range of technologies within those two systems, that could improve pilot alignment with Runway 26 at night and during poor weather. On-the-ground visual landing aids generally consist of enhanced lighting systems that assist the pilot with runway alignment on approach. Applicable on-the-ground systems include:

- high-intensity approach lighting with sequential flashers (ALSF), extending 2,400 feet from the approach end of the runway;
- medium intensity approach light system (MALS), extending 1,400 feet from the approach end of the runway; and
- medium intensity approach light system with runway alignment indicator lights (MALSR), extending 2,400 feet away from the approach end of the runway.

In-the-cockpit navigational aids are procedures and technology available to the pilot to enable alignment of the aircraft on approach to a runway, but without use of additional lighting. The only in-the-cockpit navigational aid found to be potentially applicable for use at JNU is global positioning systems (GPS) and/or flight management systems (FMS). The GPS/FMS use satellite communication technology to ensure the precise position of the aircraft on approach or departure.

The possible alternatives to improve pilot alignment with the runway at night and during poor weather conditions were evaluated for technical feasibility, relative cost, environmental impact, and ability to meet Purpose and Need. The use of ALSF technology would meet objectives, but was dropped from detailed evaluation because of the higher cost and greater construction-related environmental impact than other technology. GPS/FMS technology is not a prudent or feasible alternative because of the high costs, and FAA's inability to enforce system installation and crew training for all aircraft using JNU. The MALS system (without the runway alignment indicator lights) was dropped from detailed evaluation because it would provide much less navigational benefit at only marginally lower cost than the MALSR system.

6.2.1 NAV-2B: MEDIUM INTENSITY APPROACH LIGHT SYSTEM WITH RUNWAY ALIGNMENT INDICATOR LIGHTS (MALSR)

A MALSR would improve operating parameters at JNU by enabling visual alignment with Runway 26 for all aircraft at night and during poor weather. The MALSR would provide a 1/4-

mile lighting credit for the Runway 26 precision approach, allowing Alaska Airlines' minimums to be reduced to 3/4 mile from the current 1-mile minimum. This would result in an estimated 17.5 additional hours of access per year that is otherwise precluded by weather conditions, thus reducing flight delays. The MALSR would also result in much easier alignment for all aircraft approaching JNU from the east at night. FAA has estimated the MALSR as described in this section would cost about $1.5 million using a design that would reduce environmental impacts (by use of an at-grade access road system that would minimize the need for fill and also allow vegetation to re-establish to a more natural surface). Use of a span bridge structure, or additional large arch culverts, to cross the major slough channel would increase the cost somewhat.

The system consists of a series of lights mounted on standards that align with the runway centerline and extend a total of 2,400 feet from the runway threshold. The lights would be positioned at 200-foot intervals, beginning at the Runway 26 landing threshold on the east end of the runway. Based on an RSA layout with 600-foot undershoot protection, the first 600 feet of MALSR would consist of three light configurations mounted either flush with the surface or on low support towers with break-away couplings. The next 1,800 feet of MALSR would include nine light configurations mounted on fiberglass towers. An additional two light towers would be placed on either side of the centerline at 1,000 feet east of the runway threshold; the width of these three towers from one end of a crossbar to the other would be about 70 feet. In total, there would be 14 light support towers, each made of fiberglass and standing from 5 to 20 feet tall (except where the lights are flush-mounted within the RSA), 63 bulbs, and 5 flashers. A small control building, about 10 feet by 14 feet by 10 feet, would also be installed on piles at approximately the midway point of the MALSR system.

A 12-foot-wide at-grade access road would be constructed to properly repair, maintain, and test the system. The access road would be constructed of a geotextile "honeycomb" placed on geotextile fabric and recessed into the ground at least 1 foot. The honeycomb would be filled with granular aggregate, so that the top of the road would be approximately flush with the existing ground surface. The road would allow vehicle passage at tides lower than the road surface, estimated to be no lower than 9 feet mean sea level (msl). Natural vegetation should could take hold through the road honeycomb and help restore the alignment to a more natural function and appearance. Communications and power cables would be trenched and buried adjacent to the road along the centerline of the light towers. Culverts or other water diversion systems may have to be placed just upgradient of any light pads that are located in "drainages," as the separation distance between towers should be maintained at 200 feet if at all possible. A span bridge or large arch culverts would be used to cross the East Runway Slough.

It is estimated that up to 1.4 acres of intertidal estuarine and estuarine emergent wetlands would be disturbed by this project. Up to 1,000 cubic yards of fill material would be needed to construct the road, light maintenance pads, and vehicle turnarounds. This fill would be hauled in by truck from an off-site, permitted borrow source, or obtained from the Float Plane Pond dredging in association with construction of the RSA.

6.2.2 NAV-3: NO ACTION ALTERNATIVE

This alternative would leave the current runway alignment systems unchanged. No operational improvements would be available or implemented to assist in nighttime approaches or with poor weather and instrument approaches to Runway 26. As a result, the frequency of flight delays at JNU would continue unchanged. In accordance with CEQ regulations, this alternative was carried forward for detailed environmental analysis.

6.3 SNOW REMOVAL EQUIPMENT FACILITY (SREF)

The SREF[5] would be designed to store snow removal equipment and provide work space for maintenance on Airport vehicles and equipment. A recently completed Conceptual Design Report for the SREF indicates there are as many as 36 pieces of snow removal equipment, although only 19 of those are "FAA-authorized," meaning they are deemed necessary by FAA to keep the Airport operational (USKH 2004). The minimum amount of snow removal equipment needed at JNU is based on:

- snow clearance time limits for commercial service airports,
- the number of aircraft operations conducted at the Airport,
- the area of runway and other areas to be cleared,
- the facilities maintained on the Airport, and
- weather and snow conditions specific to the Airport.

The Airport Master Plan and Conceptual Design Report provide the detailed justification for a new SREF and sand shed, based on the types and numbers of equipment to be stored and space needed for maintenance, administration, mechanical/heating systems, and so forth. The FAA used this information to evaluate a number of sites for a new SREF with the following standard assumptions:

- a consistent building footprint of 44,616 square feet (ft^2),
- a separate, 12,000-ft^2 building for sand storage, and
- a total facility area of about 6.7 acres.

The design concept for the SREF includes a number of stalls for vehicles and equipment, a large storage area for chemicals such as urea and CG-90, administrative space, a wash bay, and other storage (see Figure 2-33 of the FEIS). The sand storage building would include space for blade and truck storage and an emergency generator. There would also be a refueling station for snow removal equipment and other Airport vehicles. Much of the area around the buildings would be consumed by pavement needed for large equipment to maneuver, turn, and enter and exit the main building. Additional space was added to the design for snow storage and vehicle parking. The entire facility would be fenced.

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[5] For convenience, SREF is used when referring to the combined snow removal equipment and maintenance facility and sand storage shed. Size estimates are based on conceptual design report for SREF developed by USKH for CBJ, 2004.

Ten different locations were considered for construction of a new SREF and maintenance facility (see Figure 2-18 of the FEIS). Each of the alternatives was evaluated for technical feasibility, particularly in consideration of other needed Airport developments, relative cost, possible environment benefits or drawbacks, and ability to meet the Purpose and Need. Other important considerations for this action include impacts on snow-removal response and capability, and whether a site would impede efficient development of other facilities. Two of the sites considered for the SREF were determined to not be feasible because of the presence of other Airport buildings within the needed development footprint, or a lack of development space without significant operational impacts on other Airport tenants and facilities. Other alternatives were considered not prudent, typically due to a number of factors including remote location and degradation of snow removal operations, and possible conflicts with aviation operations.

The FAA relied heavily on those sites that would have the least impact on existing or planned aviation developments, while still providing adequate access to the airfield with little potential for conflict with aircraft movements. As a result, two alternatives were selected for detailed evaluation of environmental impacts: SREF-1B, West End of Airport and East of a Relocated Duck Creek, and SREF-3B1, South of Yandukin Drive. Each of the sites would cost approximately $15.7 million, including design, construction, and compensatory mitigation. The No Action Alternative was also evaluated.

6.3.1 SREF-1B: WEST END OF AIRPORT

This site is located on the east and south banks of a relocated Duck Creek. Although locating the SREF here would allow development of other facilities in the immediate area, ironically, it would also somewhat limit that development as well. The site would have to be sufficiently distant from the north Airport boundary to allow relocation of the creek and accommodate the required stream setbacks. These buffers, combined with the parking and turnaround requirements for large snow removal equipment, would limit the number of hangars or other facilities constructed in the northwest Airport area. Snow removal would probably start at the beginning of Runway 08 and extend east toward the end of the runway. This site could be more expensive to develop than SREF-3B1 if constructed as a stand-alone facility without other airfield operations in the area. Approximately 45,000 cubic yards of fill would be imported from the Float Plane Pond to construct the parking area and SREF and sand shed.

A primary concern with this location is the potential conflict with other airfield development. Snow clearing equipment would have to traverse through an area of hangars and aircraft parking in order to reach the highest priorities for snow removal: the active runway and taxiways.

6.3.2 SREF-3B1: SOUTH OF YANDUKIN DRIVE

This site is located immediately south of Yandukin Drive and would not limit or promote any planned Airport development. Maplesden Way, the short access road to TEMSCO located on the Airport, would need to be re-routed. While minor operational conflicts could arise between snow vehicles and aircraft, the helicopters already operating in this area are typically less active during winter when snow removal operations are conducted. Adequate spacing exists in this area for both large jet aircraft using the main terminal and for aircraft taxiing to and from the runway

system. Conflicts between snow removal equipment and aircraft would be minimized by developing separate service roads from the taxiway system. Snow removal from this location would probably begin at the Runway 26 threshold and extend west toward the runway end. The mostly cleared and leveled location in the Northeast Development Area of the Airport would help to minimize development costs, but reconfiguration of the Yandukin Drive intersection with the TEMSCO access road, and partial relocation of the access road, would add expense. A parking area for employees, vendors, and buses could be located on the east side of the relocated TEMSCO access road. Approximately 40,000 cubic yards of fill would be required for site preparation.

There could be some operational concern associated with this location if the Northeast Development Area is fully developed, as new hangars and aircraft storage and parking would be present. However, there would be little conflict with TEMSCO, as much of the helicopter traffic occurs during the time of year when snow removal is not required.

This alternative is the Proposed Action, selected by CBJ after considerable deliberation and evaluation during the Master Planning process. According to CBJ, this site provided the best compromise between Airport development, cost, and environmental and other factors.

6.3.3 SREF-5: NO ACTION ALTERNATIVE

This alternative would require retaining the current SREF at its present site, in its present condition. Some snow removal equipment and maintenance operations would remain outside. Without the added space to accommodate existing and future equipment, CBJ would continue to experience increased maintenance costs and decreased life expectancy of the snow removal equipment. As a result, delays in responding to snow and ice conditions would continue and would likely increase in the future. Under this alternative, FAA's participation in future equipment acquisition may be jeopardized.

6.4 AIRCRAFT PARKING AND STORAGE

The possible locations for development of new aviation facilities were initially identified in the Master Plan and were evaluated in the FEIS for technical feasibility, relative cost, relative environmental impacts, and ability to meet Purpose and Need. Other important considerations for this action include the ability to meet the airfield facility development objectives, including:

- separate small, general aviation hangars from commercial operations;
- separate rotary aircraft from fixed wing aircraft;
- relieve facility and parking congestion;
- accommodate demand for new and growing fixed-base operations;
- accommodate expansion of existing and new commercial operators; and
- incorporate facility design flexibility into the layout to accommodate shifting needs as well as space required for snow storage.

Initial efforts to develop alternatives distinguished between fixed wing facilities and rotary wing facilities, with the possibility of achieving complete separation of the two in accordance with desirable Airport layout principals. In addition, alternatives were considered that would avoid some habitat loss and environmental impact by limiting new airfield development to one area of the Airport. Five alternatives were initially considered (plus the No Action Alternative). However, during the EIS planning and forecast validation efforts FAA determined that neither of the two main undeveloped lands on the Airport (known as the Northeast Development Area and Northwest Development Area) could provide sufficient space to accommodate forecast demand without some development in the other area.

One off-Airport site, at Miller-Honsinger Pond, was evaluated but involved a number of technical and operational constraints. The Pond is far from the rest of the Airport, new infrastructure would have to be developed including new access roads and taxiways, and large amounts of fill would be needed to render the site ready for development. Importantly, the Pond is not owned by CBJ, and since the Airport currently has sufficient land available for development, there is no compelling need to expand the property boundaries to incorporate the Pond.

Only two alternatives, each making use of both large undeveloped areas remaining on the Airport grounds, would meet the existing and forecast demands for space and aviation facilities. These alternatives would also meet the facility development objectives. Alternatives FW/RW-1 and FW/RW-2, as well as the No Action Alternative FW/RW-3, were subjected to a detailed environmental analysis in the FEIS. Conceptual layouts designed to meet the aircraft storage and parking needs and Airport layout objectives were prepared for aviation facilities in the Northeast and Northwest Development Areas in accordance with the FAA criteria specified in Advisory Circular 150/5300-13 Airport Design, Advisory Circular 150/5390-2B Heliport Design, and Federal Aviation Regulation (FAR) Part 77 Objects Affecting Navigable Airspace. These layouts are shown in Figures 2-34, 2-35, and 2-36 of the FEIS. The two alternatives would each cost between $19 and $20 million, including compensatory mitigation funding and depending on final facilities layout. The following subsections summarize the two action alternatives and the No Action Alternative, prefaced by a description of the common development layout shared for the Northeast Development Area.

6.4.1 NORTHEAST DEVELOPMENT AREA (ALTERNATIVES FW/RW-1 AND FW/RW–2)

Both of the alternatives for aviation facilities include the same general layout for the Northeast Development Area. The objectives in this area are to accommodate expansion of commercial aviation facilities (including fixed-based operators and helicopter tour operators), large maintenance/storage hangars, and construction of a new SREF. Adequate space was allocated in the layout to accommodate the projected development requirements of one major tour operator and expansion of other operations. A suitable area for relocation of a fixed-base operator, currently housed in a building directly east of the passenger terminal complex, was incorporated within the south-central portion of the site and would include adequate space for large hangar development, tie-down apron, and taxilane access.

Each of the commercial aviation facilities specified to be incorporated in the Northeast Development Area would restrict or limit vehicular access onto the aircraft operating areas. Sufficient auto parking areas are to be incorporated into the various site development plans. This conceptual layout for the Northeast Development Area would meet the projected needs for helicopter facilities and commercial operations identified in Table 1-2 of the FEIS. The SREF would be constructed on approximately 6.7 acres in the northeast corner of the Northeast Development Area.

Vehicles would reach the facilities in this area via a new road extending southward from Yandukin Drive. This road would provide direct public access to the parking lots for the various commercial aviation companies. The future buildout within the Northeast Development Area would necessitate relocation of the Remote Communications Outlet (RCO), Automated Surface Observation System (ASOS), and other FAA equipment. Some of the equipment from these facilities would be relocated to the Engineer's Cut. A few items, including the air traffic information service radio facility and the VHF omni-directional range test transmitter, would need to remain in close proximity to the runway. The ASOS would be relocated to a site southeast of TEMSCO and just north of the parallel taxiway.

Approximately 24.8 acres would be disturbed by either of the two action alternatives in the northeast Airport area, including approximately 19.8 acres of wetlands.[6] Some of this has already been disturbed for facilities, including the RCO and the access road to TEMSCO. However, other portions of the area consist of estuarine wetland habitat. It is estimated that 133,500 cubic yards of fill would be needed to raise the elevation above tidal influence, to approximately the level of the Delta One ramp, and provide a suitable support base for the facilities.

FW/RW-1: Full Development of Northeast and Northwest Development Areas

Because a substantial portion of fixed wing aircraft uses occur on the west portion of the Airport, the Master Plan recommended that additional fixed wing aircraft parking for based aircraft occur on the northwest area along with new T-hangars and executive hangars. Fixed-based operators and other commercial tenants would, to the extent practicable, be concentrated in the Northeast Development Area (as described in the previous section).

The existing Duck Creek channel presents a barrier to the Airport expansion in the northwest portion of the Airport, in that new facilities (including hangars, parking, and taxiways) cannot be easily integrated into the existing layout. The Northwest Development Area would include a dual taxilane access bridge crossing Duck Creek.[7] FAA standards for this design require that the taxilanes be at least 35 feet wide and that there be at least a 97-foot separation between the two taxilanes, as measured from centerline to centerline (see AC 150/5300-13: Table 2-3). Hangars would offer either north- or south-facing doors, and tie-down areas would be oriented in an east-west configuration, with parked aircraft generally facing south.

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[6] These numbers do not include the area set aside for a SREF. Total disturbance including the SREF in the NE Development Area would be about 31.5 acres, requiring 173,680 yards of fill.

[7] The number of access taxiways that are required to adequately serve an aviation development area is dictated by the total number of aircraft that would be taxiing to and from the runway facility, and not the aircraft size. It should be noted that the future hangar development area would be initially served by just one bridge crossing during the early development timeframe.

Vehicle access to this area would be via both Radcliffe Road and the unnamed Airport access road. A segment of the EVAR/Dike Trail would be relocated, with a link to a new auto parking area with the existing trail via a new pedestrian footbridge crossing Duck Creek. There would be an approximately 50-foot development setback/buffer zone on either side of the Duck Creek centerline. Bottomless arch culverts, bottomless box culverts, or a span bridge would be installed at the new fuel farm road crossing over Duck Creek, if approved. JNU would also remove the existing culvert at Radcliffe Road that was to have been removed as a condition of permit approval for a previous action.

Approximately 17 acres would be disturbed by the proposed development in the Northwest Development Area, most of which is currently undeveloped. The habitat to be disturbed includes approximately 5 acres of wetlands. It is estimated that 67,240 cubic yards of fill would be needed to raise the elevation above tidal influence and provide a suitable support base for the facilities.

FW/RW-2: FULL DEVELOPMENT OF NORTHEAST AND NORTHWEST DEVELOPMENT AREAS WITH DUCK CREEK RELOCATION

This alternative also includes development of the northeast and northwest Airport areas for aviation facilities, and the conceptual design for the Northeast Development Area would be as described previously. Objectives for development in the Northwest Development Area are the same as for Alternative FW/RW-1. The major difference from alternative FW/RW-1 is this alternative would include relocation of most of lower Duck Creek, including that portion on the Airport and west of the Airport on the Refuge.

This alternative relocates the existing Duck Creek channel that currently presents a barrier to efficient Airport expansion in the Northwest Development Area. This action would open space to meet virtually all of the projected needs for executive hangars, T-hangars, and tie-downs. The Civil Air Patrol hangar would remain, but future development could include replacement to orient a new building with the remainder of the airfield.

FAA standards for this layout require that the taxilanes be at least 35 feet wide and include a 115-foot taxilane object-free area width (see AC 150/5300-13: Table 4-1). Hangars would offer either north- or south-facing doors, and tie-down areas are to be oriented in a north-south configuration, with parked aircraft generally facing east.

The portion of Duck Creek to be relocated would begin near the intersection of Cessna Drive and the unnamed Airport road and extend westerly along the northern Airport boundary to a new discharge point in the Mendenhall River. A 50-foot development setback/buffer zone would be established on both sides of the Duck Creek centerline. The relocation of about 2,600 feet of Duck Creek would allow a more integrated design between new facilities and the existing Airport layout. The Airport security fence would be placed between the newly aligned Airport road and the creek, which would remain accessible to the public from the north.

Vehicles would reach the aviation facilities via realignment and extension of the unnamed Airport access road. The new roadway would be located on the south side of the realigned segment of Duck Creek and would connect with the existing Airport-controlled access road that

extends around the west end of Runway 08. New auto parking areas would be developed as needed on the south side of the new roadway to serve airport users. As with the other alternative, a portion of the EVAR/Dike Trail would be relocated, and a new parking area would be developed for trail users.

Approximately 17 acres would be disturbed in the Northwest Development Area. However, the net gain in wetlands in the Northwest Development Area due to relocation of Duck Creek is estimated at 3.6 acres. The proposed development would be at an elevation of approximately 19 feet above msl; an estimated 87,000 cubic yards of fill would be needed to raise and level the surface to that elevation. A bottomless arch culvert, bottomless box culvert, or span bridge would be installed at the new fuel farm road crossing over Duck Creek, if approved, and a pedestrian footbridge would span the creek where the Dike Trail crosses, near the Airport's western boundary. The existing pipe culvert at Radcliffe Road would be removed. The area north and south of the new outlet of Duck Creek on the Mendenhall River would be graded and a berm would be placed along the northern edge of the grading to stabilize the new channel. Although this design should be sufficient to maintain the location and design of the new Duck Creek outlet, it may prove necessary to add additional armoring of the creek banks near the outlet. This could be accomplished with traditional riprap or bioengineering techniques.

The relocation of Duck Creek would benefit the Airport layout and would also provide an opportunity to improve certain stream characteristics and aquatic functions, particularly improving conditions for fish migration. The relocation design would include features such as natural substrates, revegetated banks, a somewhat shortened channel, and an impermeable bed (to help maintain stream flows currently lost through seepage to groundwater). The improvements incorporated into this project are consistent with recent studies (cf. U.S. Fish and Wildlife Service [USFWS] 2002). The primary objectives would be to reduce or prevent water loss, facilitate the upstream movement of adult and juvenile fish to rearing and spawning areas, and to speed the downstream movement of juveniles to summer rearing areas in the estuary. In general, the concepts for Duck Creek realignment presented in Section 2.8.2.3 of the FEIS would address most of the major problems identified for this reach of the creek in the Duck Creek Watershed Management Plan.

FW/RW-3: NO ACTION

This alternative would not satisfy existing and future aviation needs. The likely result would be that aircraft operations would still increase and parking would become increasingly congested until JNU and FAA determined that unsafe conditions would arise. Additional effort would be expended by Airport staff and tenants to move aircraft as needed but it would become increasingly difficult to operate either safely or efficiently. It would also become impossible with further growth to meet Airport Design standards, established to provide adequate aircraft clearance from other aircraft and ground support equipment. The lack of new facilities would prevent CBJ from gaining additional revenue at the Airport, such as that received from tie-down rentals and hangar/apron leases.

6.5 FUEL FARM ACCESS

The bulk fuel storage tanks (known collectively as the "fuel farm") at JNU are located on the northwest side of the Airport, west of Alex Holden Way and Duck Creek. Few alternatives were available to address the needs associated with vehicles heavier than the allowable road capacity, Airport security and public safety concerns, and efficiency of refueling operations. It is not feasible to relocate the fuel farm due to space limitations on the Airport and siting safety constraints for petroleum storage tanks. One alternative initially considered, to purchase new fuel vehicles that are designed to meet load requirements for public thoroughfares, was eliminated from detailed consideration because it would not satisfy the safety and security needs; in other words, the fuel trucks would still have to exit and enter Airport property twice on each trip and use public roads in transit. Two alternatives, for a new fuel farm road and a fuel pipeline with service station, were found to be both prudent and feasible and, along with the No Action Alternative, were fully evaluated for environmental impacts in the FEIS. These options are shown in Figures 2-19 and 2-36 of the FEIS.

6.5.1 FF-1: DEVELOP NEW ACCESS ROAD TO FUEL FARM

A new access road would be constructed to exit the south side of the fuel farm site, trending approximately southwest along the Airport property line and turning south toward the Airport apron. The road would cross Duck Creek and connect to the aircraft apron in the vicinity of Taxilane W-2. Using this route, the fuel farm could be reached without having to travel on public roads or exit from the secure Airport perimeter. The estimated cost to develop the new access road is $302,998.

The new road would consist of two lanes, each 12 feet wide, with an adjacent 2-foot shoulder on each side. Runoff from the road surface would be captured by vegetated drainage channels located adjacent to the shoulders. The road would be paved with asphalt and underlain by select graded gravels and a base of borrow material, meeting CBJ construction standards and suitable for the vehicle types and weights to be transported. A bottomless arch culvert, bottomless box culvert, or span bridge would be installed at the Duck Creek crossing. To reduce the culvert length, and therefore reduce impacts to the riparian corridor and aquatic life, the road width would be narrowed to a 16-foot, single-lane crossing for approximately 30 feet. The culvert diameter would be sized according to the width of stream channel crossed. The new road would extend approximately 565 feet from the fuel farm to Alex Holden Way.

There are many operational, safety, and security benefits associated with a new road. The new location would save approximately 450 feet of total travel distance in each direction. The new road would be within the Airport fence line, so public traffic would not be allowed. Also, the new road would reduce transport time for the refueling trucks, since there would be no security gates and a shorter travel distance to Taxilane W-2, leading on to the general aviation apron. An additional security and safety benefit would be incurred by reduction of travel through the existing Gate E, where tanker trucks require a delayed gate-closing system to ensure trucks clear the opening. There would be environmental concerns associated with this alternative, particularly development of another Duck Creek crossing, and removal of some upland and wetland habitat.

However, there may also be an environmental benefit incurred by reduced accident potential and reduced operations proximal to Duck Creek.

A bridge could be used in place of a bottomless arch culvert and achieve some relatively minor reduction in fill and environmental impact. The bridge would raise the cost to about $374,364 based on a unit rate of $186 per square foot. Approximately 0.23-acre would be disturbed, including some palustrine scrub-shrub wetlands. Approximately 2,000 cubic yards of fill would be required for road construction.

6.5.2 FF-2: INSTALL PIPELINES FROM FUEL FARM TO CENTRAL FUEL DISTRIBUTION PORT

An alternative identified by the cooperating agencies would be to bury a fuel distribution pipeline extending from the fuel farm to a central refueling station on the Airport. The refueling station could be located just south of an unnamed Airport road and would be used by tanker trucks that service aircraft. This alternative was developed to reduce environmental impacts associated with construction of a new fuel farm road and another Duck Creek crossing. It would also increase operational efficiency by further reducing the travel distance for airfield refueling trucks. The estimated cost to develop a new fuel pipeline and refueling system is $721,726. If directional drilling were used to install the fuel pipes the cost would increase to an estimated $1.2 million.

The advantages of a pipeline system are similar to those for a new fuel farm access road: increased security and public safety and more efficient operations because of reduced travel distance and time. A pipeline system would further reduce transport distance for the refueling trucks, as they would take on aviation gasoline (a product known as "AvGas") or jet fuel at a new service station located just south of the unnamed Airport road and adjacent to Taxilane W-2. However, development of a fueling station in this area would occupy space that may otherwise be dedicated to aircraft parking.

The pipeline system would follow approximately the same path as the fuel farm road. There would be multiple pipelines since the products, such as AvGas and jet fuel, have to be separated by type, grade of fuel, and vendor and to allow fuel metering at the service station (FAA 1982). Based on the types of fuels currently stored at the fuel farm and different formulations of those fuels, six separate pipelines would be required for existing demand and projected future uses. This includes the possibility of one pipeline dedicated to de-icing compounds. Additional contingency pipes could be added to the system at construction to anticipate other fuel types or vendors. These separate pipelines would be contained within a larger pipe to provide structural support, protection against damage from subsurface digging or drilling operations, and secondary containment in the event of leaks from a pipe.

The service station would be located in an area already disturbed and used for aviation facilities. The station would most likely consist of a series of pumps associated with each of the different AvGas, jet fuel, and possibly de-icing products. Meters would be installed to monitor how much product is pumped by each truck. Individual vendors using the station would have access cards or pass codes to begin pumping. An approximately 50-foot clear zone would be developed

around the service facility, and it may also be fenced as an added security precaution. Other requirements specified in such applicable regulations as the International Fire Code and National Fire Protection Association code would be applied, including the presence of emergency disconnect switches.

The product pipelines would most likely be installed by conventional trenching methods rather than directional drilling. The trench would be cut to below the subsurface frost zone to reduce potential for soil heaving. The trench would also be lined with graded material to prevent differential settling and unnecessary strain on the secondary pipeline. Support bases or brackets may be used to further anchor the system. Precautions would have to be taken during installation of the pipeline below Duck Creek. Ideally, trenching would occur during a period of low tides and low precipitation, to reduce the amount of in-stream flows that would have to be temporarily redirected. Screens and barriers would be used to prevent sediment disturbance and degradation of water quality. Alternatively, the pipelines could be installed during relocation of the creek to avoid any trenching in an active channel.

A significant concern with buried pipelines is leak detection. Automatic sensors can be installed to monitor pressure within the individual pipes, and the meters at the service station can be used to compare amount of product pumped vs. the amount of product leaving the bulk storage tanks. In the event of a leak there should be no disruption to supplies for aviation operations, as the leaking pipeline would be isolated or, if the specific line could not be determined and the entire system had to be shut off, fuel trucks could always travel to the fuel farm until pipeline repairs are made. However, the automatic systems are not able to detect relatively low pressure drops, as could occur with a small leak. A substantial amount of product could be lost before leaks are detected or differences between the product pumped vs. product delivered are noticed. Even small leaks of petroleum compounds can have significant impacts on groundwater. Duck Creek could also be affected by subsurface contamination as it is recharged by groundwater under certain conditions.

About 2/3 acre would be disturbed during trenching and installation of the pipelines, but there would be no net loss of habitat as the construction path would be reclaimed. No fill material would be necessary although some select gravel and sand may be placed just under the pipes for stability.

6.5.3 FF-3: NO ACTION ALTERNATIVE

The No Action Alternative would retain the fuel farm access as it exists today with no change in route or entrance or exit location. Vehicles would exit the fuel farm to the east, travel on Alex Holden Way, and enter the Airport Operations Area through security gates. This alternative would require operators of the tankers to obtain street licenses for these vehicles, and it could force the operators to acquire different tankers to meet street vehicle requirements.

6.6 WILDLIFE HAZARD MANAGEMENT PLAN

CBJ's revised WHMP includes a number of habitat modifications to reduce and control wildlife potentially hazardous to aviation (CBJ 2002). Collectively, the habitat modifications from the

WHMP, with some modifications identified by CBJ in communications and correspondence during development of the EIS, represent the Proposed Action for wildlife hazard management. The WHMP also describes hazard control procedures, wildlife monitoring requirements, staff training requirements, and the basis for program evaluation. However, the labor and funding to support these programs, or the level of activity within each, is generally not defined. In order to develop a range of alternatives, other hazard reduction options involving habitat modification or hazard control (i.e., hazard repellent) techniques were identified for the EIS. The proposed actions and hazard reduction options were reviewed for effectiveness and ability to be implemented. Some options, such as filling the Float Plane Pond, were deemed not prudent or practicable, in part because of their affect on airfield operations. Others, such as installation of wire gridding over surface water to prevent birds from feeding on schooling fish, were deemed not prudent for the desired application. Section 2.5.3 of the FEIS describes each of the possible options considered.

Each option considered prudent and feasible for reducing wildlife hazards were organized into one or more wildlife hazard management alternatives and included for detailed environmental analysis in the EIS. Each of the alternatives, other than the No Action Alternative, has the potential to alleviate specific wildlife management concerns and achieve, at least in part, some reduction in wildlife hazard created by the issues listed in Table 3. The three action alternatives are estimated to achieve varying degrees of hazard reduction based on the extent of habitat modification. It is reasonable to expect that wildlife control activities would increase with lesser habitat modification, so that JNU can effectively maintain risks to a level deemed acceptable. The fourth alternative considered, the No Action, would continue the existing effort at wildlife hazard mitigation at JNU. Table 3 also identifies the individual components of each of the four alternatives.

Section 2.9 of the FEIS includes a detailed description of each alternative. The following subsections provide summary information for each alternative along with key differentiators between alternatives.

6.6.1 WH-1: WILDLIFE HAZARD MANAGEMENT PLAN AND SPONSOR'S PROPOSED ACTION

The Sponsor's proposed wildlife hazard control actions for specific species and areas of the Airport were initially described in the WHMP. During development of the EIS and as a result of numerous discussions with agency staff, wildlife experts, and the EIS consulting team, the Sponsor modified the proposed action to eliminate some habitat modifications and incorporate other actions, shown in Table 3. Section 2.9.1 of the FEIS contains a description of all elements of this alternative. This alternative would disturb approximately 233 acres, including paving about 77 acres of grass infield, and removing vegetation from up to 83 acres of Float Plane Pond. An estimated 501,500 yd^3 of fill would be needed. The estimated total cost for this alternative is $21.9 million, of which about $1.67 million would be compensatory mitigation for wetland and habitat loss. The estimated annual labor and materials cost associated with this alternative is $86,000, an increase of about $55,000 above that spent in 2003. This estimate includes an additional 1/4-FTE for wildlife hazing and education, $20,000 in vehicle costs, and $10,000 for supplies such as shells, mortars, and so forth.

Table 3. Habitat Modifications for Wildlife Hazard Management Alternatives

Wildlife Hazard Issue	Alternative WH-1[1] JNU's Proposed Action	Alternative WH-2[2] Moderate Habitat Modification	Alternative WH-3[3] Minor Habitat Modification & Adaptive Hazard Management	Alternative WH-4[4] No Action
a. Birds Attracted to Vegetated Areas near Runways and Taxiways	WH-1a Pave grassed infield areas	WH-2a Install synthetic ground cover in the infield	WH-3a Grade infield areas to prevent water from ponding; alter vegetation management practices to attract fewer wildlife; increase hazing	WH-4a Continue Existing Hazard Management Program
b. Birds Attracted to Wetlands on West Portion of Airport Property	WH-1b Fill on-Airport wetlands west of runway to above high tide, at level of Northwest Development Area	WH-2b Regrade on Airport areas by selective dredging and filling to eliminate ponds, channels, and swales that capture water	WH-3b Increased hazing of wildlife using control technologies	
c. Birds Attracted to Wetlands on Refuge West of Airport Property	WH-1c Fill of wetlands on Refuge west of JNU, creating free draining surface to Mendenhall	WH-2c Regrade area by selective dredging and filling west of JNU to eliminate ponds, channels, and swales that capture water	WH-3c Increased hazing of wildlife using control technologies	
d. Birds Feeding on Fish Staging at the Mouth of Duck Creek	WH-1d Relocate Duck Creek beginning at Airport Gate 'E' to the mouth, away from Alex Holden Way to north JNU boundary, discharge at former Gute property	WH-2d Relocate limited reach of Duck Creek, from Radcliffe Road, to create new channel trending west to Mendenhall River	WH-3d Increased hazing of wildlife using control technologies	
e. Birds Attracted to Surface Water Conveyances on JNU	WH-1e Convert drainage ditches into underground drains, install treatment	WH-2e Regrade and line ditches with concrete or other synthetic material, install treatment	WH-3e Regrade and manage vegetation, with increased hazing	
f. Birds Attracted to Swales that Collect Rainwater	WH-1f Remove swales and areas along pavement edges that collect water, regrade to RSA	WH-2f Same as WH-1f	WH-3f Same as WH-1f	

Table 3. Habitat Modifications for Wildlife Hazard Management Alternatives

Wildlife Hazard Issue	Alternative WH-1[1] JNU's Proposed Action	Alternative WH-2[2] Moderate Habitat Modification	Alternative WH-3[3] Minor Habitat Modification & Adaptive Hazard Management	Alternative WH-4[4] No Action
g. Ducks and Waterfowl Feeding on Float Plane Pond Vegetation	WH-1g Mechanically remove vegetation from Float Plane Pond and fingers using dredges or other means	WH-2g Fill In Float Plane Pond fingers to eliminate waterfowl habitat	WH-3g Increased hazing of wildlife, elimination of hunting program	
h. Birds Feeding on Fish at Mouth of Jordan Creek	WH-1h Remove dam at mouth of Jordan Creek	WH-2h Same as WH-1h	WH-3h Same as WH-1h	
i. Woodland Habitat Providing Perch and Nest Sites, and Wildlife Cover	WH-1i Selectively thin trees, clear understory, and install deer fence	WH-2I Periodically remove Corvid nests and install deer fence	WH-3i Increased hazing of wildlife using control technologies, adaptive management program as needed through Advisory Board consultation	

[1] Some increased labor effort and supplies would be needed for WH-1, but less than for other action alternatives. See Section 2.9.1.

[2] Increased labor effort and supplies would be needed for WH-2, more than WH-1 but less than for WH-3. See Section 2.9.2.

[3] Increased labor effort and supplies would be needed for WH-3, most of any action alternatives. See Section 2.9.3.

[4] No Action Alternative means no change from existing conditions for that specific habitat modification or hazard abatement action.

6.6.2 WH-2: MODERATE HABITAT MODIFICATION ALTERNATIVE

This alternative, fully described in Section 2.9.2 of the FEIS, also incorporates a number of habitat modifications, although with more emphasis on hazard control than WH-1. There would be less habitat alteration than the Proposed Action since no trees and understory would be removed from the Float Plane Pond woodlands, and the main body of the Float Plane Pond would remain undisturbed. This alternative would also eliminate grass from the Airport infield, but it would be replaced with a synthetic turf product. In addition, the Float Plane Pond fingers would be filled to remove waterfowl habitat. This alternative would disturb approximately 116 acres and require about 462,500 yd^3 of fill. The estimated total cost for this alternative is $28.6 million, of which about $1.25 million would be compensatory mitigation for wetland and habitat loss. The estimated annual labor and materials cost associated with this alternative is $101,000, an increase of about $70,000 above that spent in 2003. This estimate includes an additional 1/2-FTE for wildlife hazing and education, $20,000 in vehicle costs, and $10,000 for supplies such as shells, mortars, and so forth.

6.6.3 WH-3: MINOR HABITAT MODIFICATION ALTERNATIVE WITH ADAPTIVE HAZARD MANAGEMENT PROGRAM

This alternative was developed in response to numerous concerns raised during scoping, including:

- long-term effects of increased habitat reduction on and near the Airport;
- the need to reduce risks to aircraft using methods available that would cause the least impact to habitat;
- potential effects of habitat modifications on species of little concern to aviation safety; and
- a recommendation that adaptive habitat management be undertaken to initially try hazard control methods with the least environmental impact.

Alternative WH-3 emphasizes hazard control through the use of increased labor, training, and hazing. An adaptive hazard management approach would be used to provide a framework for adjusting management actions by monitoring hazard control activities and success, and making alterations using different degrees or types of hazard control and, potentially, increased habitat modification. Central to this approach would be the use of a wildlife hazards working group to include Airport staff, wildlife professionals, resource agencies, and members of the community to provide multi-disciplinary and objective review and recommendations. This alternative would also require changes in the way vegetation (grassed infields, other open space) is managed to reduce wildlife attractants and elimination of the on-Airport hunting program. Alternative WH-3 is fully described in Section 2.9.3 of the FEIS.

This alternative would disturb approximately 33 acres and require about 13,000 yd^3 of fill. The estimated total cost for this alternative is $1.2 million; no compensatory mitigation funding should be required. The estimated annual labor and materials cost associated with this alternative

is $140,000, an increase of about $109,000 above that spent in 2003. Much of the additional labor cost would result from the employment of a full-time wildlife control officer.

6.6.4 WH-4: NO ACTION ALTERNATIVE

This alternative would result in no changes to the Airport and near-Airport habitat for the purposes of wildlife hazard control. The existing hazard management program would remain in place, with no increase in staff or funding.

7.0 ENVIRONMENTALLY PREFERRED ALTERNATIVES

For all actions, the No Action Alternative for each need is considered to be the environmentally preferred alternative. The CEQ 40 Most Asked Questions, Question 6a, defines the environmentally preferred alternative as "the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural and natural resources." FAA's guidance directs the approving official to select as the environmentally preferred alternative the one that, with mitigation, would (FAA 2006):

1. Promote the national environmental policy NEPA describes;
2. Cause the least damage to the natural, biological, and physical environment; and
3. Best protects, preserves, or improves historic and cultural resources.

Although the FAA finds that the actions comprising the preferred alternatives, as identified in Section 2.13.2 of the FEIS, incorporate all practicable measures to minimize harm from significant adverse environmental impacts, the FAA recognizes that the No Action Alternatives for each action would impose the least environmental impacts. However, the No Action Alternatives do not satisfy the expressed Purpose and Need for each action.

The following represent the environmentally preferred alternatives that do satisfy Purpose and Need for the actions:

1. Alternative RSA-6A, Installation of EMAS with Declared Distances and Extension of Runway 26, is the environmentally preferred alternative to bring the Airport into compliance with FAA's standards for runway safety area. Although this alternative would cause the least overall environmental disturbance and minimize adverse impact to the Refuge, wetlands, and essential fish habitat (EFH), the high implementation and maintenance cost preclude its selection. (The following section, Section 8.0, of the ROD provides more explanation of FAA's statutory obligation with respect to selection of an RSA alternative for JNU.)
2. Alternative NAV-2B, Installation of a MALSR, is the environmentally preferred alternative to improve pilot alignment and create safer landing conditions at night and during poor weather.
3. The alternatives for a new snow removal equipment and maintenance facility would have relatively comparable environmental impact. SREF-3B1 would directly affect more wetlands and wildlife habitat, while SREF-1B would affect a greater amount of EFH and have a higher potential to affect cultural properties.
4. Alternative FF-1, Construction of a new Fuel Farm Access Road, is the environmentally preferred alternative to create safer traffic conditions and increase airfield efficiency. This alternative would have a slightly smaller disturbance footprint than installation of fuel pipelines, and have a lower potential to encounter cultural properties or buried hazardous wastes.

5. Alternative FW/RW-2 is the environmentally preferred alternative to increase aviation facilities and apron space. The alternatives considered to satisfy these needs would have relatively comparable disturbance footprints; however, the relocation and reconstruction of Duck Creek, incorporated into FW/RW-2, would create benefits to fish passage and water quality, and result in lower net losses of wetlands and EFH. In addition, riparian functions and flood control would also improve with this alternative.
6. The wildlife hazard management alternatives were created to make use of distinctly different hazard control techniques for some areas of the Airport. Alternative WH-3 relies almost entirely on increased hazard management – more staff, hazing, education, and adaptive management – and little habitat modification. This alternative is therefore the environmentally preferred. However, FAA does not believe that the control techniques incorporated into WH-3 would sufficiently reduce risks to achieve the need without additional habitat modification. As a result, FAA's preferred alternative (described in the following section) represents a combination of alternatives.

8.0 FAA'S PREFERRED ALTERNATIVES

The mission of FAA's Airports Program is to provide leadership in planning and developing a safe, efficient national airport system to satisfy the needs of the aviation interests of the United States. In accomplishing this mission, the Airports Program will safeguard public investment and consider economics, environmental compatibility, and local proprietary rights. FAA's preferred alternatives for JNU are consistent with the mission of the Airports Program.

Each of the alternatives for each action carried forward for detailed analysis in the EIS was evaluated for its ability to meet relevant statutory considerations and the Purpose and Need for each action. The FAA carefully considered public comment and testimony offered during scoping, as well as during meetings and hearings for the Draft and Final EISs. Reasoned and expert advice from state and federal agencies was continually factored into the development and evaluation of alternatives. During the EIS the Sponsor modified some of the proposed actions specifically to satisfy environmental concerns expressed by FAA, the public, and agencies.

The FAA's preferred alternatives are those identified in Section 2.13.1 of the FEIS. These alternatives are consistent with the Sponsor's proposed actions, although FAA has incorporated additional design features and other elements in most alternatives to reduce environmental impacts. The following sections summarize FAA's rationale for selecting each of the preferred alternatives. Differences between the Proposed Actions descriptions and the Preferred Alternatives are noted.

8.1 RUNWAY SAFETY AREA

In 2006, Congress passed and the President signed Public Law 109-443 to the National Transportation Safety Bill. Portions of this law address the proposed runway safety area improvements at JNU and provide explicit direction to FAA concerning which alternative is preferred for implementation. Specifically, Public Law 109-443 states that "…the Secretary of Transportation may only select as the preferred alternative the least expensive runway safety area alternative that meets the standards of the Federal Aviation Administration and that maintains the length of the runway as of the date of enactment of this Act." In determining the least expensive runway safety area alternative, "…the Secretary shall consider, at a minimum, the initial development costs and life-cycle costs of the project."

Public Law 109-443 provides clear direction to the FAA for selection of the preferred runway safety area alternative. The FAA's selection of an alternative is critical to the Juneau Airport's ability to implement required runway safety area improvements in several respects. Because FAA is the lead federal agency for the proposed actions and will provide federal monies to fund most of the cost associated with RSA construction, the Airport could not be reasonably expected to fund any alternative other than a No Action Alternative without FAA's financial assistance. The FAA's role in funding decisions is critical, as Congress has placed sole responsibility on the FAA to approve use of federal Airport Improvement Program funds for airport improvement projects. In addition, the FAA has sole authority to approve the Airport Layout Plan depicting the proposed RSA improvements as well as the Airport's operating certificate under Federal

Aviation Regulation Part 139. Whether for purposes of funding approval or approval of airport layout, the FAA cannot approve the Airport's Layout Plan or the Airport's operating certificate unless a runway safety area alternative were constructed that comports to Public Law 109-443. Therefore, an alternative not complying with Public Law 109-443 is not available to the Airport for implementation. The FAA has determined that RSA-5E conforms to Public Law 109-443 and has, therefore, designated Alternative RSA-5E as the preferred alternative.

The high cost of Alternatives RSA-6A and RSA-6B exceed FAA's RSA costing thresholds. Alternative RSA-6D is not practicable because it conflicts with federal statute prohibiting a reduction to the runway length. In addition, none of these alternatives are practicable according to the Clean Water Act Section 404(b)(1) guidelines because they are unavailable for implementation.[8] FAA therefore concludes that the selected alternative, RSA-5E, complies with the requirements of the 404(b)(1) guidelines with the inclusion of appropriate and practicable discharge conditions included in this ROD and as part of the conditions of various permits, including the U.S. Army Corps of Engineers' (USACE's), to minimize pollution or adverse effects to the affected aquatic ecosystems. FAA therefore believes that RSA-5E is the least environmentally damaging practicable alternative.

FAA has determined that the least expensive runway safety area alternative that maintains the length of the runway and satisfies statutory requirements is RSA-5E, the Sponsor's Proposed Action and FAA's Preferred Alternative. Figure 3 illustrates the disturbance footprint and facilities to be relocated with construction of the additional runway safety area. The Runway 08 threshold would be displaced 120 feet east of its existing location, and the Runway 26 threshold would be relocated 520 feet east of its existing location. Sufficient development of RSA would be constructed at both runway ends to meet FAA standards of 600-foot undershoot protection. The runways would be marked and designated in the Alaska Supplement to the Airport/Facility Directory and the Airport Layout Plan to provide for 1,000-foot aircraft overrun protection. The Runway 08 MALSR would be adjusted through a 120-foot eastward shift in accordance with the threshold displacement. To prevent impairment of commercial navigation in the Mendenhall River potentially caused by placement of one or more of the 1,000-foot light towers within the river channel, FAA shall require that the navigable portion of the river channel not be reduced in the Runway 08 approach light lane.

FAA's Preferred Alternative incorporates a number of features to reduce and minimize environmental impacts. These features are listed in the alternative description in Section 2.11 of the FEIS. Additional conditions of approval to minimize environmental harm that would apply to this and other preferred alternatives are identified in Section 12.2.3 of this ROD. Also, mitigation requirements identified in Section 12.0 of this ROD and those incorporated into the final compensatory mitigation plan would be adhered to.

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[8] See later section on Compliance with Laws, Regulations and Orders, and the analysis of compliance with the Clean Water Act Section 404(b)(1) guidelines.

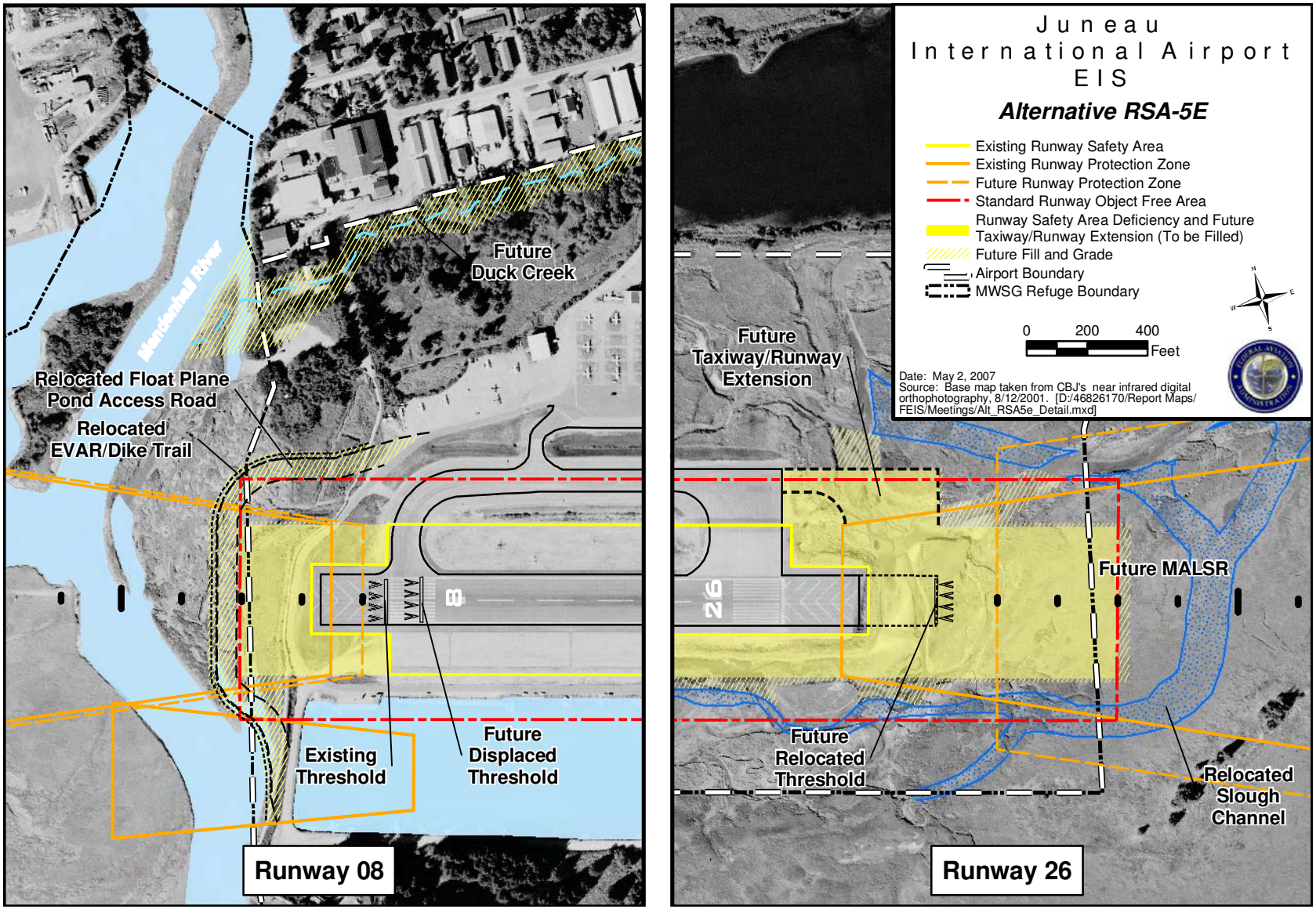

Figure 3. RSA-5E fill areas.

Sections 2.2, 2.6, and 2.11 of the FEIS provide more detail concerning the components of the FAA's Preferred Alternative RSA-5E. One difference from the FEIS description in Section 2.6.1.2 is in the Sponsor's plan for dredging fill from the Float Plane Pond. Since preparation of the FEIS the Sponsor has prepared a concept study for dredging (DOWL 2007). FAA's Preferred Alternative shall incorporate by reference all elements of this study that are included by state and federal agencies as permit conditions.

8.2 NAVIGATIONAL ALIGNMENT

Only one alternative was identified that would satisfy the need to improve pilot alignment with Runway 26 and the transition to visual references for landing at night and during poor weather conditions. FAA's Preferred Alternative and the Sponsor's Proposed Action to satisfy the need is NAV-2B, installation of the Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). Although the MALSR would have a direct impact on the Refuge, a Department of Transportation (DOT) Section 4(f) land, there is no prudent and feasible alternative to the use of such land. To reduce environmental impacts on wetland habitat and the Refuge, the MALSR access road would extend east from the east Runway 26 RSA end, providing the shortest access to the approach and alignment indicator lights. For most of the route the access road would be constructed of a geotextile "honeycomb" placed on geotextile fabric, and recessed into the ground at least 1 foot with granular aggregate on top to approximately the existing ground surface. Natural vegetation should take hold through the road honeycomb and help restore the alignment to a more natural function and appearance. A series of large arch culverts or a span bridge would be used to cross the relocated East Runway Slough channel. Sections 2.3, 2.7.1, and 2.11.5 of the FEIS provide more detail concerning FAA's Preferred Alternative. Figure 4 illustrates the new Runway 26 MALSR aligned with the relocated threshold stemming from runway safety area improvements. The relocated slough channels are also highlighted in this figure.

8.3 SNOW REMOVAL EQUIPMENT AND MAINTENANCE FACILITY

Two alternatives were carried forward for detailed analysis in the EIS that would satisfy JNU's need for a new, improved SREF. Each of these alternatives was assumed to incorporate the same design, but in different locations. FAA's Preferred Alternative and the Sponsor's Proposed Action is SREF-3B1, to be located in the Northeast Development Area of the Airport just south of Yandukin Drive. While there are differences between the two action locations considered and their affect on the human environment, in general SREF-1B and SREF-3B1 would have similar levels of environmental consequences, with SREF-1B having slightly lesser impact on environmental resources such as vegetation, wetlands, EFH, and wildlife habitat. FAA agrees with JNU, however, that SREF-3B1 would provide an operationally superior location for the center of snow removal and maintenance facilities that would reduce potential conflicts with other airfield development and use. Sections 2.4.1 and 2.8.1 of the FEIS provide more detailed concerning Alternative SREF-3B1. Figure 5 shows a conceptual plan for a new snow removal equipment facility. Figure 6 includes the location of the new SREF within the northeast Airport development area.

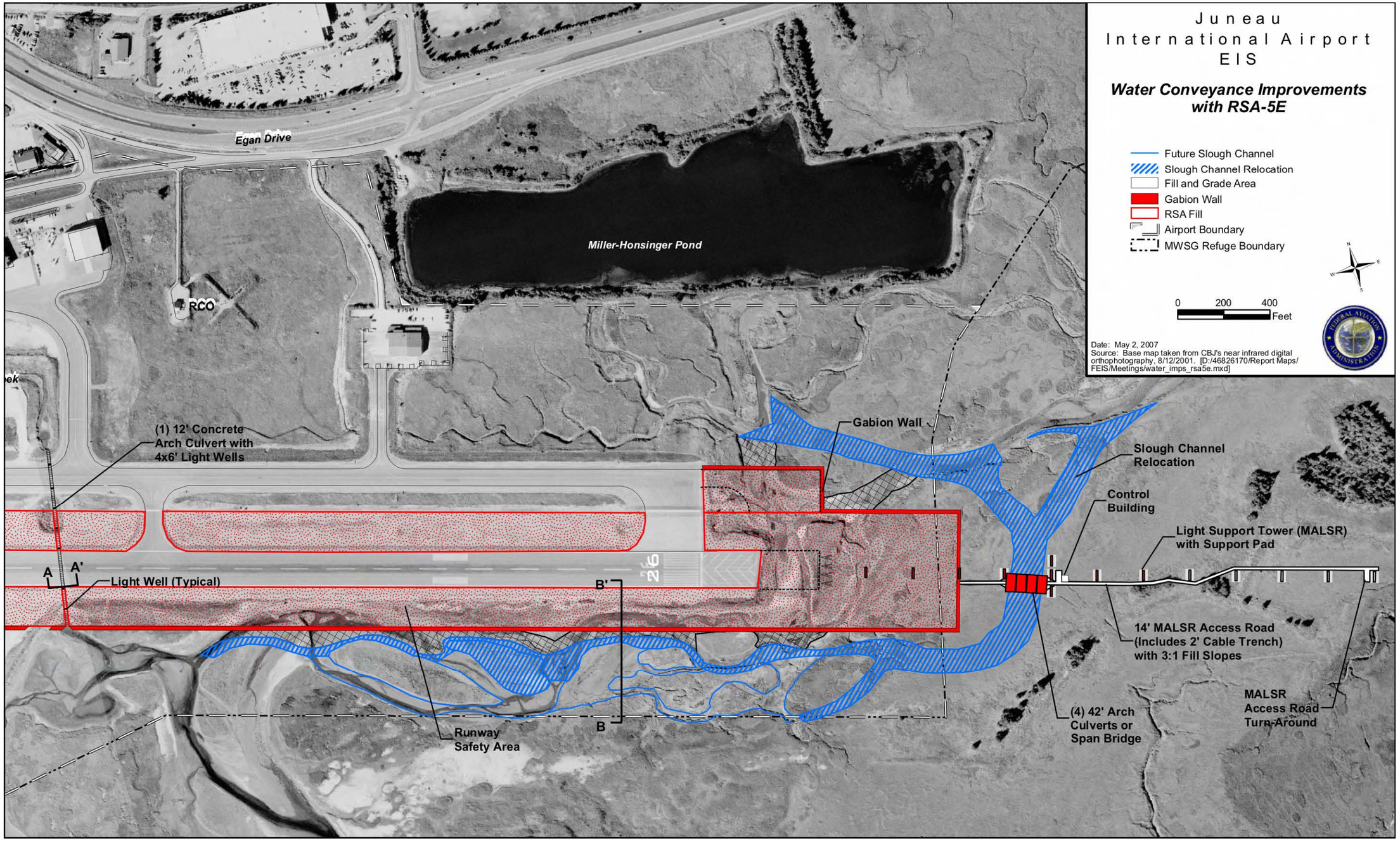

Figure 4. Runway 26 MALSR with new RSA and Water Conveyance Improvements.

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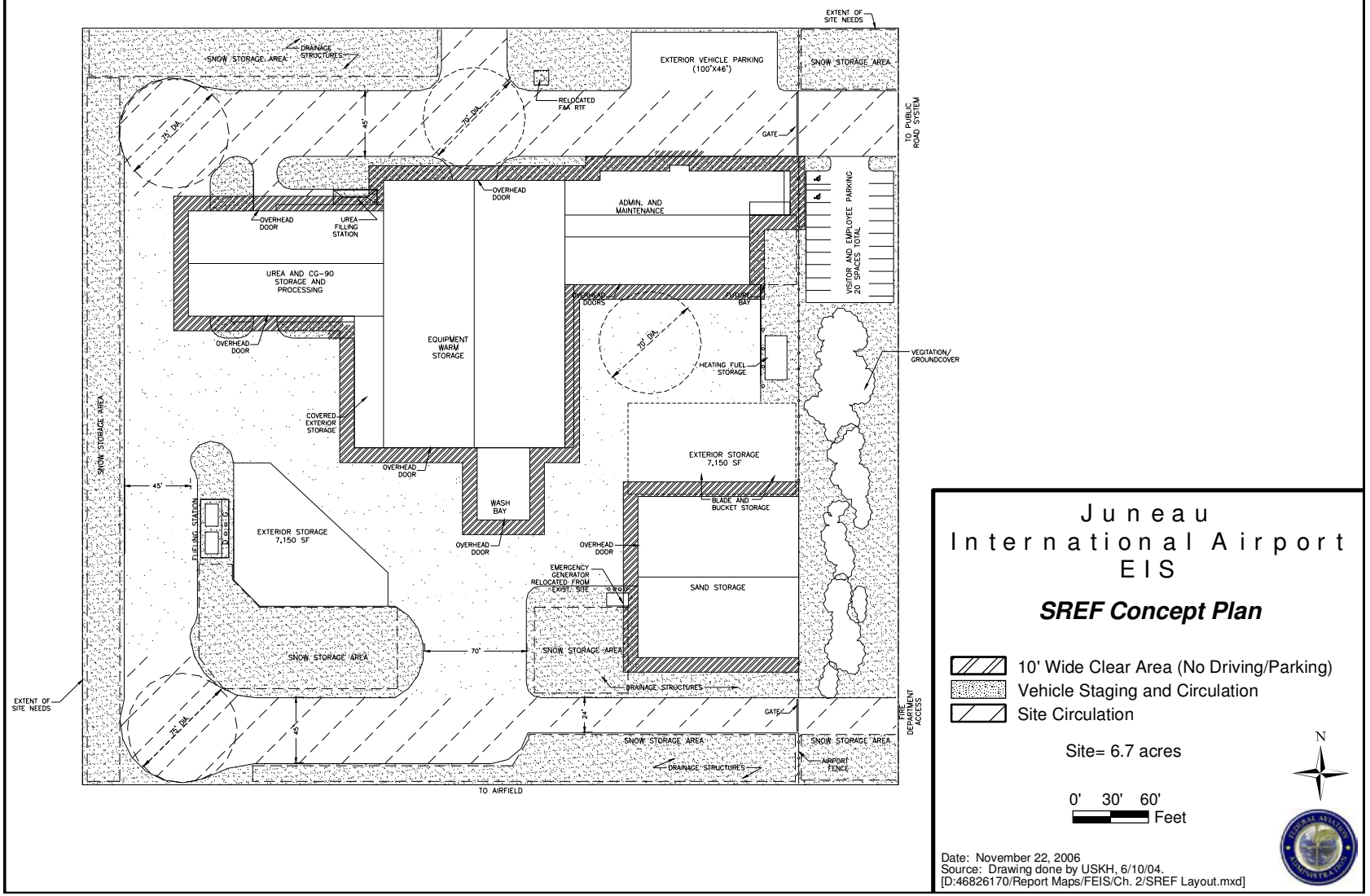

Figure 5. Snow removal equipment facility concept plan.

8.4 AVIATION FACILITIES: AIRCRAFT PARKING AND STORAGE

After a rigorous analysis of the projected growth in aviation at JNU, FAA developed two comprehensive alternatives for facilities development on the Airport. Each alternative would use the Northeast Development Area for commercial and fixed-base operations, as well as large aircraft hangars, and the Northwest Development Area for general aviation users, typically based tie-downs as well as executive and T-hangars. The main difference between the two alternatives is FW/RW-1 would adapt the facilities layout around the existing Duck Creek corridor, while FW/RW-2 incorporates relocation of Duck Creek into the design. The costs to implement these two alternatives are similar, although relocation of Duck Creek would add approximately 7% to the overall development expense.

FAA's Preferred Alternative and the Sponsor's Proposed Action is FW/RW-2. Alternative FW/RW-2 would have slightly lesser impact on environmental resources than FW-RW-1 and would represent the least environmentally damaging of the two action alternatives. FAA believes that it would be preferable to relocate most of Duck Creek that is on Airport property (and on the Refuge, west of the Airport) for a number of reasons. First, it would remove a development obstacle. It would be easier to complete the infrastructure for these facilities without the barrier of Duck Creek. Second, aviation facilities will be more integrated into the rest of the Airport if the Duck Creek corridor is moved, and this will prove beneficial in terms of both safety and operational efficiency. Third, lower Duck Creek is a severely degraded stream with poor water quality, low and at times no flows in some stretches during dry seasons, and poor conditions for fisheries. It is FAA's belief that airfield development combined with relocation of the creek will provide an opportunity and additional incentive to improve conditions in the lower stream reach. Figure 6 illustrates a possible layout for the northeast Airport development area. Figure 7 illustrates a facility configuration for the northwest Airport development area, including relocation of Duck Creek and a new fuel farm access road.

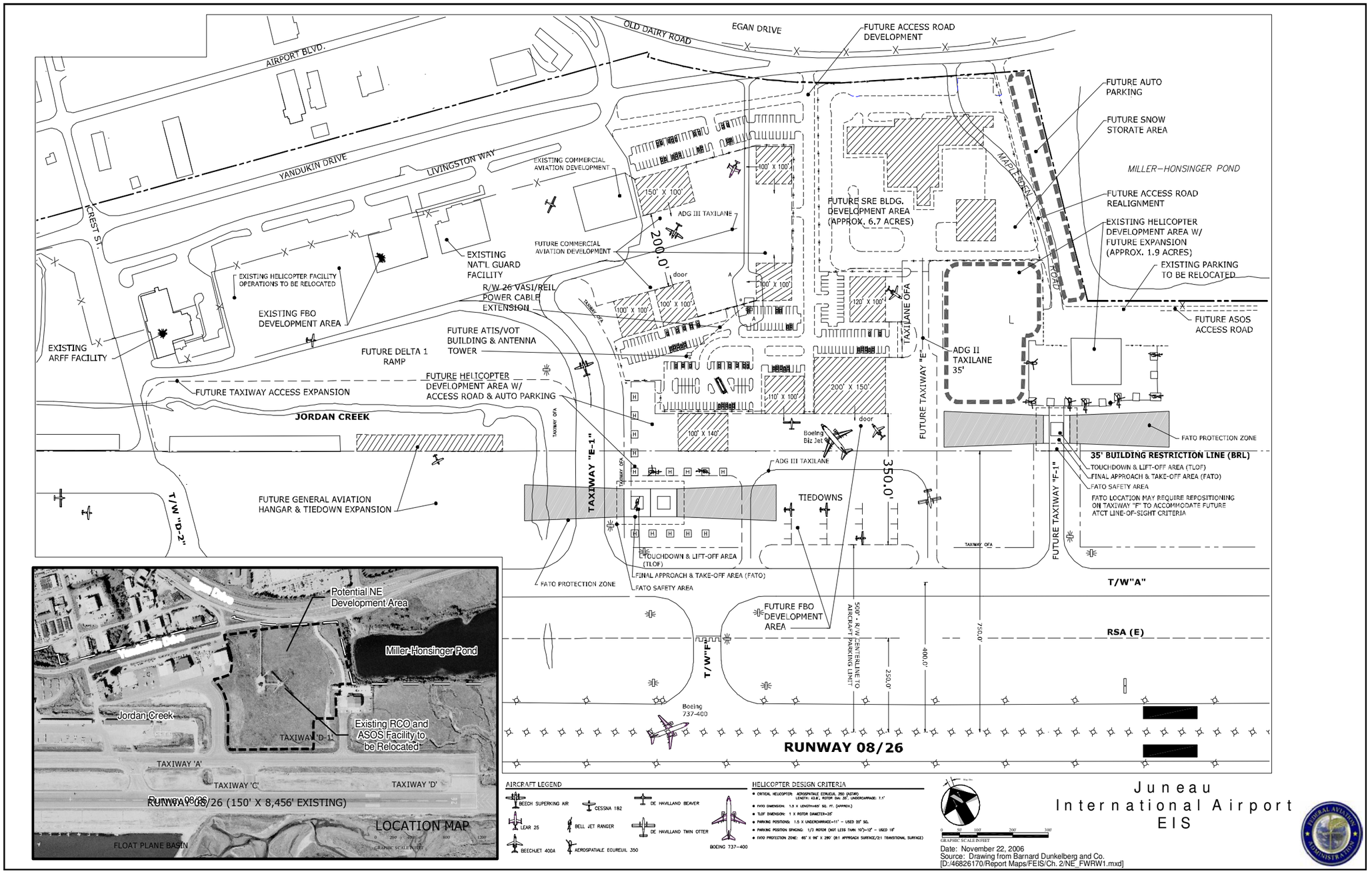

Figure 6. Northeast Aviation Development Area with SREF Site.

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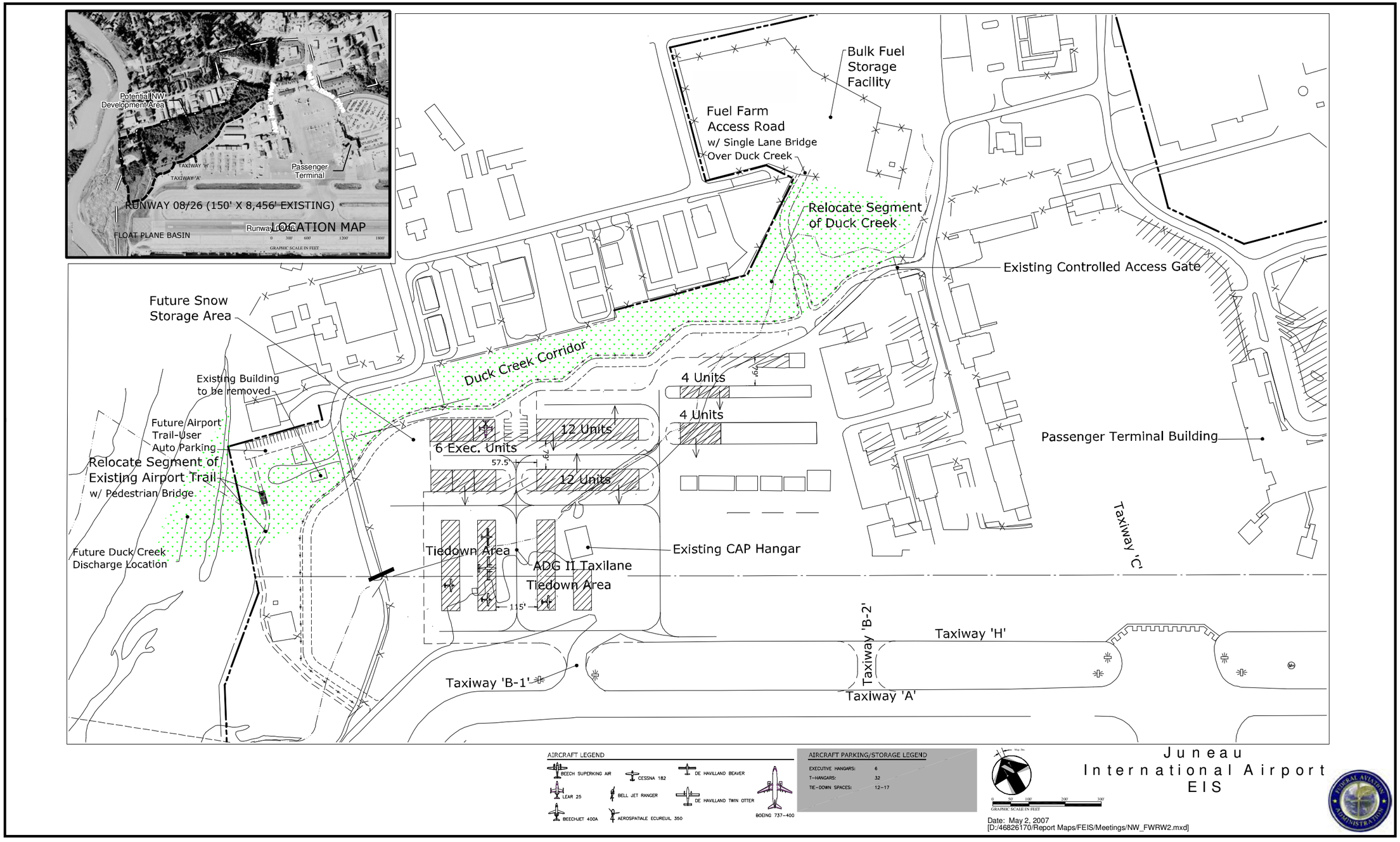

Figure 7. Northwest Aviation Development Area with Duck Creek relocation and Fuel Farm Access Road.

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FAA recognizes that the substantial airfield modifications and facilities developments incorporated in Alternative FW/RW-2 present an opportunity to improve environmental conditions, particularly with respect to water management and discharge. As a condition of the development, JNU will revise their Stormwater Pollution Prevention Plan and incorporate techniques and activities to prevent or reduce the off-site discharge of pollutants. Some of the practices to be incorporated include:

- Prevent discharge of stormwater into Duck Creek (and possibly into Jordan Creek, depending on the final Total Maximum Daily Load [TMDL]),
- Limit aircraft and equipment cleaning and washdown areas to specific locations,
- Review Airport deicing operations to reduce and eliminate over-applications, and evaluate measures to capture and treat deicing runoff,
- Evaluate options including oil/water separators or other measures, including use of the Float Plane Pond, to treat stormwater for oil, grease, and other pollutants prior to off-site discharge, and
- Incorporate buffer zones along habitat and surface waters, and identify specific snow storage locations, to keep collected snow and sediments, metals, glycols, and nitrogen-rich urea from discharge into surface water systems.

Development of aviation facilities in the northwest Airport area will necessitate relocation of Duck Creek. The FAA's Preferred Alternative incorporates a number of creek relocation objectives, and design elements to meet those objectives, as described in Section 2.8.2.3 of the FEIS.

The preferred alternative also incorporates actions to relocate the RCO from the Northeast Development Area to the Engineer's Cut west of the Airport on the saddle between the Mendenhall River outwash and Auke Bay. The ASOS would be relocated from the Northeast Development Area to the site shown on Figure 2-47 of the FEIS, approximately 500 feet south of the Miller Honsinger Pond and 200 feet north of Taxiway A.

8.5 FUEL FARM ACCESS

Two alternatives to satisfy the need for improved fuel farm access were evaluated in the EIS. Alternative FF-1 would include construction of a new, on-Airport access road to the fuel farm. Alternative FF-2 would entail installation of a system of fuel pipelines from the fuel farm to a new refueling station in the Northwest Development Area. There are environmental and economic tradeoffs associated with these two alternatives. Alterative FF-2 would involve a slightly larger disturbance area, but in the long term the disturbance between paved areas and the fuel farm could be reclaimed to native habitat. Both alternatives should reduce the potential for accidents involving fuel trucks by removing the trucks from travel on public roads. Alternative FF-1 would still have a greater risk than Alternative FF-2 of truck accidents and contaminant release to Duck Creek because of the new single-lane, creek crossing to reach the fuel farm. However, long-term environmental consequences and cleanup costs could be greater for the fuel pipeline system because leaks may go unnoticed for some time and access to underground lines would be more difficult to quickly address.

After considering the environmental consequences, FAA believes that both alternatives would be acceptable solutions to the existing need for improved access to fuel farm supplies. However, the cost to install a fuel pipeline system would be much greater—approximately three times that to construct a new road—and for this reason FAA's Preferred Alternative is the Sponsor's Proposed Action, FF-1. Section 2.8.3.1 of the FEIS describes the preferred alternative. Figure 7 identifies the route for the access road from the fuel farm to the apron. Figure 8 shows a cross section of the road construction.

8.6 WILDLIFE HAZARD MANAGEMENT PLAN

FAA has evaluated the environmental and economic consequences of the actions incorporated into each wildlife hazard management alternative. In addition, FAA has considered the hazards posed by wildlife using different areas of the Airport in terms of hazard location, wildlife abundance and other relative risk factors based on site-specific observations and strike history at JNU, and national databases relevant to wildlife hazard management. FAA in general concurs with JNU's modified Proposed Action (WH-1) for wildlife hazard management that the following actions should be implemented:

- Filling and grading of the wetlands located near the mouth of Duck Creek on Airport property to a free-draining surface above high-tide level at about the level of the proposed Northwest Development Area.
- Selective dredging and filling of the wetlands on the Refuge, west of Runway 08 and extending north past the mouth of Duck Creek, starting above high-tide level to create a free-draining surface to the Mendenhall River (see Figure 2-56 of the FEIS for a representation of the location and nature of this fill in conjunction with the preferred RSA alternative, RSA-5E).
- Relocating the mouth of Duck Creek toward the north Airport boundary, from just south of the intersection of Cessna Drive and Alex Holden Way and into a new discharge location in the Mendenhall River (in accordance with the Duck Creek relocation adopted into Preferred Alternative FW/RW-2).
- Removing swales and areas that pond water along the edges of the runway and parallel taxiway by filling, leveling, and grading the areas to approximately the level of the RSA.
- Alteration of vegetation management techniques and increased hazing in the infield areas.
- Removing vegetation from the Float Plane Pond by dredging it to a depth of at least 10 feet in all waters south of the Float Plane Pond and in the main portion of pond where vegetation exists. (Dredging to greater depths would be conducted as necessary to provide materials for new construction projects associated with the RSA, facilities, etc.).
- Removing the dam at the mouth of Jordan Creek.

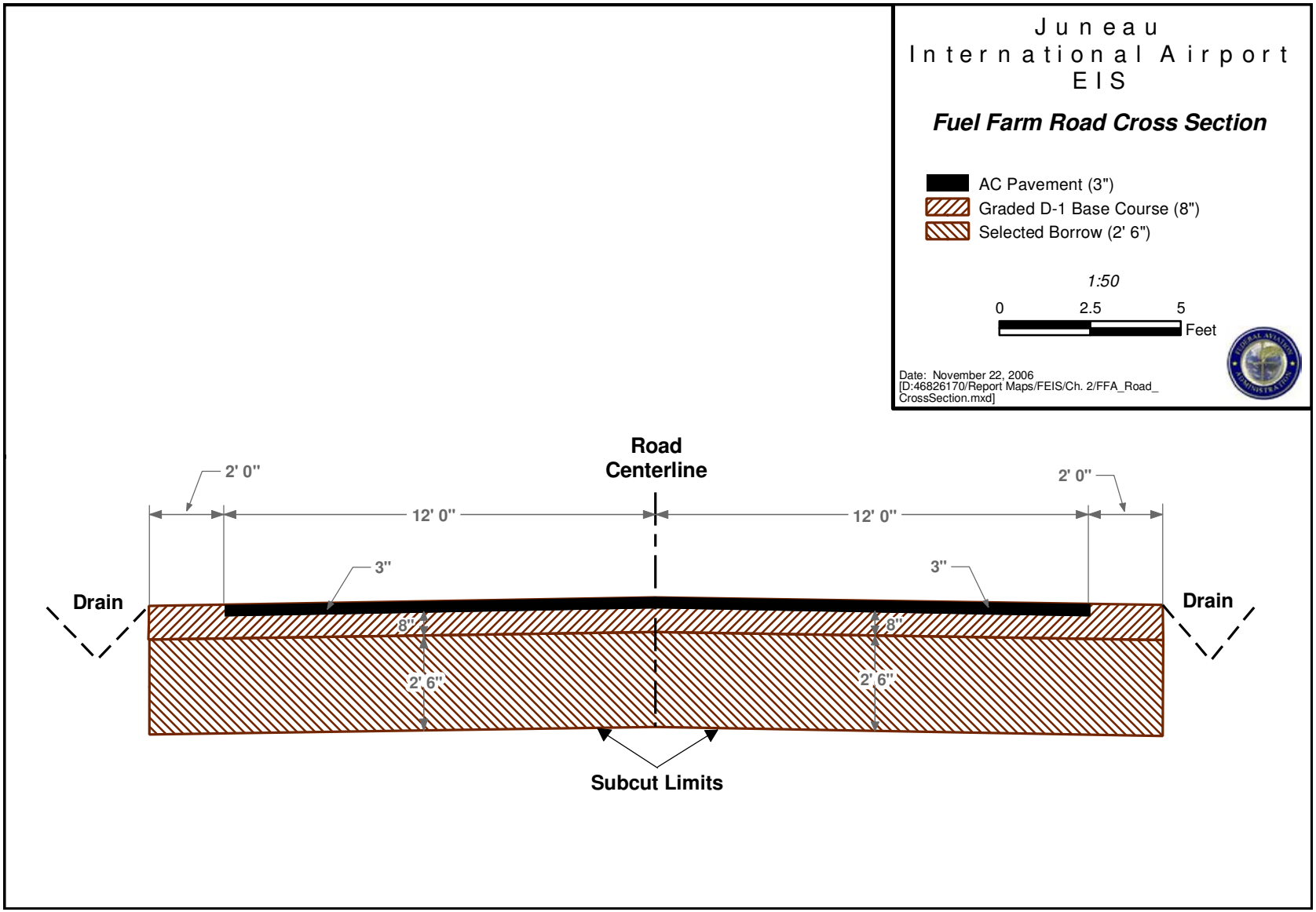

Figure 8. Fuel farm road cross section.

- Implementation of an adaptive hazard management approach to the Float Plane Pond woodlands. The Airport would continue to monitor, evaluate, and document hazards along with the effectiveness of wildlife hazard control techniques such as those described in FEIS Section 2.5.1.2 to determine if additional habitat modifications would be required. Initial habitat modifications would include:
    - Installation of a deer fence along the north side of the dike, from the existing fence on the west end to the existing fence on the east end, and
    - Removal of corvid nests as needed to prevent re-establishment of crow rookeries in the woodlands.

FAA also prefers incorporation of the following elements into JNU's WHMP, as summarized from FEIS Section 2.9.3:

- Increased commitment of staff and resources allocated to the wildlife hazard management program for the purpose of hazard control, wildlife monitoring, documentation, program review, staff and public education, and planning.[9]
- Elimination of the on-Airport waterfowl hunting program. Elimination of the hunting program should be done in conjunction with an increase in wildlife control activities, particularly through an increase of staff to prevent the Float Plane Pond fingers from serving as a refuge to waterfowl.
- Establishment of a wildlife hazards working group to facilitate communication, cooperation and coordination between the Airport authority, tenants and the community at large.

The FAA's Preferred Alternative for wildlife hazard management avoids some adverse environmental impact associated with the Proposed Action, particularly by not incorporating tree cutting or vegetation thinning in the Float Pane Pond woodland. The Preferred Alternative preserves the existing bird habitat and visual screen so important to many users of the Dike Trail. FAA recommends that JNU establish a long-term study of the woodlands with the objective to answer questions raised during scoping about the overall effect of this habitat in the context of aviation safety and wildlife hazard management.

FAA recognizes that there needs to be some inherent flexibility in wildlife hazard management to account for changing degrees of wildlife activity, influenced by such factors as migration seasons, food availability, human activity, weather, and so forth. The Airport needs to be able to adapt to the hazards by increasing or decreasing the use of hazard repellent and even depredation techniques, irrespective of other, regulated habitat modifications that may have been approved for wildlife hazard control. The ability and authority to make adjustments in the type and degree of wildlife hazard control is vested in the Airport Manager, or delegated to the Wildlife Hazard Control Officer. Federal and state permits have been issued that provide a framework for the manner by which wildlife management takes place, particularly for the "take" of wildlife. The WHMP should provide the necessary detail for program implementation and monitoring.

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[9] At the time of ROD preparation, JNU had already taken steps to increase wildlife hazard management control activities. In May, 2007 the Airport contracted for a full-time WHMP officer for one year.

9.0 SELECTED ALTERNATIVES

The FAA's preferred alternatives are those that best satisfy the Purpose and Need for the projects, comply with federal law and FAA's statutory mission, and conform to FAA's environmental responsibilities. FAA has followed CEQ and other federal laws and guidance, as well as the comprehensive environmental analysis included in the FEIS, in determining which alternatives should be implemented at JNU. FAA's preferred alternatives include those identified as the environmentally preferable for a new SREF, fuel farm access, aircraft storage and parking, and navigational alignment with the runway.

In accordance with federal regulations implementing NEPA (40 CFR §1505.2) FAA has considered the tradeoffs associated with wildlife hazard management alternatives. Alternatives WH-1 and WH-2 each rely heavily on habitat modification to reduce wildlife attractants to key locations of the Airport, specifically the west runway end and Float Plane Pond. Alternative WH-3 would entail little habitat modification but substantially increased hazard control activities. However, FAA does not believe that the environmentally preferred alternative for wildlife hazard management (WH-3) would sufficiently reduce wildlife hazards to aviation. Some habitat modification is necessary to reduce bird attractants on the Airport, particularly near the west Runway 08 end. FAA also recognizes that other actions involving runway safety area enhancement and relocation of Duck Creek will, in concert with a revised wildlife hazard management plan, eliminate some of the intertidal wetlands currently providing good forage and loafing habitat for birds west of the Airport. FAA balanced the goal to minimize environmental impact with the need and national policy for safe aviation and selected a modified wildlife hazard alternative that incorporates some habitat modification with increased hazard control and management.

In the case of runway safety area, FAA's selected alternative (RSA-5E) is not the environmentally preferred alternative (RSA-6A). The previous section, Section 8.1, of this ROD described FAA's statutory obligation, codified in Public Law 109-443, to select the lowest cost RSA alternative that meets standards and maintains runway length. Nevertheless, FAA's preferred alternative for runway safety area (and other needs) incorporates all identified practicable measures to avoid or minimize environmental harm.

Accordingly, FAA has decided that the preferred alternatives described in the previous sections of this ROD and listed in the following table (Table 4) are the alternatives selected for implementation.

Table 4. Summary Needs and Actions Comprising the FAA's Selected Alternatives

Need	Selected Alternative
Runway Safety Area	RSA-5E
Navigational Improvements	NAV-2B
Snow Removal Equipment and Maintenance Facility	SREF-3B1
Aviation Facilities	FW/RW-2
Fuel Farm Access	FF-1
Wildlife Hazard Management Plan	Modified WH-1: WH-3a, WH-1b, WH-2c, WH-1d, WH-1f, WH-1g, WH-1h, and WH-2i and Additional Features Described

10.0 FINDINGS, DETERMINATIONS, AND CERTIFICATIONS

In accordance with federal law and agency guidance, FAA makes the following findings, determinations and certifications for the selected alternatives. These findings, determinations and certifications are based upon the information and analysis contained in the FEIS and the administrative record supporting the EIS.

10.1 COMPLIANCE WITH LAWS, REGULATIONS, AND EXECUTIVE ORDERS

There are a number of federal, state, and local agency approvals and permits that would have to be issued before the preferred alternatives could be implemented. These approvals and permits were identified in an earlier section of this ROD. There are also Executive Orders (EOs) such as those concerning floodplains (EO 11988) and wetlands (EO 11990), that would be applicable to the selected alternatives. The following sections summarize the degree to which the selected alternatives are consistent with the laws, regulations, and Executive Orders not specific to FAA's regulatory authority.

10.1.1 EXECUTIVE ORDER 11988: FLOODPLAIN MANAGEMENT AND U.S. DOT ORDER 5650.2: FLOODPLAIN MANAGEMENT AND PROTECTION

This Executive Order, together with applicable DOT and FAA orders, establishes a policy to avoid construction within a 100-year floodplain where practicable, and where avoidance is not practicable, to ensure that the construction design minimizes potential harm to or within the floodplain. FAA is bound by Public Law 109-443 to select alternative RSA-5E for implementation. As such, there is no practicable alternative available to the FAA to further avoid impacts to floodplains associated with this action. RSA-5E incorporates all practicable measures identified during the EIS process to minimize harm to and within floodplains (see the Compensatory Mitigation Plan section of this ROD).

For all other selected alternatives, there are no practicable alternatives to avoid impacts to and development in floodplains and still meet the purpose and need for the actions. The selected alternatives incorporate all identified practicable measures to minimize harm to and within the floodplain, including:

- Use of a permeable, at-grade MALSR access road that allows water infiltration and does not block tidal recharge;
- Steepened RSA support slopes to reduce fill into floodplain;
- Reconstruction of the East Runway Slough to maintain hydrologic exchange between marshplain/floodplain north of the runway with Jordan Creek and the Gastineau Channel; and
- Relocation of Duck Creek with channel modifications to increase overall floodplain storage capacity.

Further, the selected alternatives would not result in 1) a considerable probability of the loss of human life, 2) likely future damage associated with the encroachment that could be substantial in cost or extent, including interruption of service on or loss of a vital transportation facility, and 3) a notable adverse impact on natural and beneficial floodplain values after design features and mitigation measures described in FEIS Section 2.12 are applied.

10.1.2 EXECUTIVE ORDER 11990: PROTECTION OF WETLANDS AND U.S. DOT ORDER 5660.1A

FAA is bound by Public Law 109-443 to select alternative RSA-5E for implementation. As such, there is no practicable alternative available to the FAA to further avoid impacts to wetlands associated with this action. In accordance with this Executive Order, the EIS considers impacts to a) public health, safety, and welfare, including water supply, quality, recharge and discharge; pollution; flood and storm hazards; and sediment and erosion; b) maintenance of natural systems, including conservation and long term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, wildlife, timber, and food and fiber resources; and c) other uses of wetlands in the public interest, including recreational, scientific, and cultural uses. RSA-5E incorporates all practicable measures identified during the EIS to minimize harm to wetlands.

For all other actions, there are no practicable alternatives to avoid impacts to wetlands and still meet the Purpose and Need of these alternatives. The selected alternatives incorporate practicable measures identified during the EIS process to minimize harm to wetlands.

10.1.3 NATIONAL HISTORIC PRESERVATION ACT (16 U.S.C. §470)

SHPO concurred with the FAA's determination of eligibility finding of No [known] Historic Properties Affected. However, the FAA and SHPO agree that additional efforts to identify historic properties are necessary before a final finding of effect can be made. The FAA, SHPO, and JNU/CBJ entered into a Programmatic Agreement for phased identification of subsurface and obscured resources and will complete the Section 106 process of determining eligibility and resolving of adverse effects to newly located resources, should any such resources or effects be identified. A copy of the Programmatic Agreement is provided in Appendix C to this ROD. FAA consulted with the SHPO and Alaska Native groups as required by 36 CFR 800.2.

10.1.4 CLEAN WATER ACT (33 U.S.C. §1344) SECTIONS 401, 402, AND 404 AND THE FEDERAL WATER POLLUTION CONTROL ACT (33 U.S.C. §§ 1251-1387)

FAA is bound by Public Law 109-443 to select alternative RSA-5E for implementation. As such, there is no practicable alternative available to the FAA to further avoid impacts to wetlands and waters of the U.S. associated with this action. (The following section provides a discussion of conformance with the 404(b)(1) guidelines for disposal of dredge or fill material into waters of the U.S.)

RSA-5E incorporates all practicable measures identified during the EIS process to minimize harm to wetlands and waters of the U.S. Preferred alternatives for all other actions also

incorporate all practicable measures identified during the EIS process to minimize harm. In the case of unavoidable impacts to wetlands, a mitigation plan has been developed through consultation with the USACE and other state and federal agencies and will be a requirement of project implementation. Additionally, JNU will submit a Section 404 permit application to the USACE. This application will include the minimization measures incorporated into the selected alternatives for discharge of fill into waters of the U.S. Issuance of the permit by the USACE and adherence by JNU to any conditions of approval will demonstrate compliance with Section 404 of the Clean Water Act.

Receiving waters on and surrounding the Airport (i.e., Duck Creek and Jordan Creek) already exceed water quality standards for such elements as sediment, debris, iron, dissolved oxygen, and fecal coliform. TMDLs have been established for Duck Creek and are under consideration for Jordan Creek, which only has a TMDL identified for residue. The selected alternatives will not result in further exceedence of state and federal water quality standards, but they also may not improve current conditions. Measures to control stormwater runoff and other discharges from the Airport that will be incorporated into the final design of the selected alternatives and adopted into the relevant permits are incorporated by reference into this ROD. Further, JNU will develop an erosion and sediment control plan prior to commencement of construction to minimize impacts to water quality and to comply with all established TMDLs for receiving waters. JNU's Stormwater Pollution Prevention Plan will be amended and submitted to the U.S. Environmental Protection Agency (USEPA) for a National Pollutant Discharge Elimination System (NPDES) permit under Section 402 of the Clean Water Act and will incorporate measures to address increased runoff and contaminant loading associated with changes to discharges from implementation of the selected alternatives. JNU will submit an application for certification of compliance with state water quality standards to the Alaska Department of Environmental Conservation (ADEC) under Section 401 of the Clean Water Act. Issuance of the USEPA's NPDES permit and the State Water Quality Certificate and adherence by JNU to any conditions of approval will demonstrate compliance with the federal and state water quality requirements.

10.1.4.1 CONFORMANCE WITH SECTION 404(B)(1) GUIDELINES FOR SPECIFICATION OF DISPOSAL SITES FOR DREDGED OR FILL MATERIAL (40 CFR §230)

Both the USACE and USEPA provided comments about the Final EIS (USACE 2007; U.S. EPA 2007). Among other comments, USEPA requested that the ROD "…include a discussion showing that the selected alternative complies with the 404(b)(1) guidelines.[10] The USACE recommended that FAA demonstrate, in the ROD, "…how the proposed work conforms with the 404(b)(1) guidelines published for the discharge of dredged or fill material into waters of the United States." The USACE will make a final determination as to conformance of the selected alternatives with the Clean Water Act as part of the Sponsor's permit application, review, and decision process. However, FAA concurs with both agencies that this ROD should provide additional discussion on the subject with respect to the selected RSA alternative because of the unique legislative demands directed at this decision.

[10] The "selected alternative" refers to the selected runway safety area alternative.

The USACE Guidelines establish the basis for determining compliance or non-compliance with the restrictions on discharge of dredged or fill material (40 CFR Part 230). The following sections use the four "failure" tests identified in 40 CFR §230.12a3 to discuss compliance of FAA's selected RSA alternative with Section 404 of the Clean Water Act. The selected alternative, RSA-5E, would have the least impact on waters of the U.S., including special aquatic sites such as wetlands and the Refuge, than any of the standard RSA alternatives that maintain full runway length, including RSAs-1, -5C, and -5D.[11] RSA-5E would also cost less than the other standard RSA alternatives. Similarly, Alternative RSA-6C would cost approximately 50% more to construct than RSA-5E and would have a greater impact on both wetlands and the Refuge. The following discussions therefore concentrate on alternatives that may cost less or have lesser impact on waters of the U.S. than RSA-5E (including RSAs-6A, -6B, and -6D).

NO PRACTICABLE ALTERNATIVES

The USACE Guidelines would not authorize permit of RSA-5E if there is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem (40 CFR §230.12a3i). An alternative is "practicable" as defined by the Guidelines "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (40 CFR §230.10a2).

The two RSA alternatives incorporating EMAS on both runway ends (RSAs-6A and -6B) would have less environmental impact on wetlands, habitat, and hydrology than RSA-5E, although the selected alternative would result in the lowest permanent loss of Refuge lands than any alternative other than RSA-6A. However, Alternatives RSA-6A and -6B would also cost approximately twice as much to construct than RSA-5E. This cost difference is even greater over a 20-year lifespan because of the higher maintenance requirements for EMAS and the predicted need to replace the EMAS beds once during that period. Alternative RSA-6D would cost less to construct and maintain than the selected alternative and would have a lesser impact on wetlands and hydrology, but result in a greater permanent impact on the Refuge than RSA-5E.

The USACE does not have explicit guidance for determining whether or not project costs are practicable. FAA has developed guidance for identifying the maximum financially feasible (i.e., prudent) cost for RSA improvements (see FAA Order 5200.9; FAA 2004). The threshold for financial feasibility is based on the extent of RSA improvement required and corresponding EMAS bed length. At JNU, each runway end would require an EMAS bed 337 feet long by 150 feet wide. FAA has determined that the maximum feasible RSA improvement cost per runway end for this type of installation is about $15 million, or $30 million for both runway ends, for the life-cycle of the system (FAA 5200.9, paras 9c(1) and 9d). As can be seen on Table 2-13 of the FEIS, and in the detailed cost estimates provided in Appendix A to that document, the total cost (life-cycle + mitigation) for Alternatives RSA-6A and RSA-6B exceeds $30 million.

RSA-6D is the least costly alternative to construct, affects less habitat, and would have a smaller compensatory mitigation cost than any other standard safety area alternative. However, RSA-6D

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11 "Special aquatic sites" that would be affected include but are not necessarily limited to the Refuge and wetlands, as defined in 40 CFR Subpart E.

would also require a 5 percent reduction in landing length on both runways, and this change would conflict with federal law passed in 2003 that precludes FAA from requiring an owner or operator of an airport in Alaska to reduce the length of a runway for the purpose of complying with RSA standards.[12]

Late in 2006, after publication of the Draft EIS and while revisions were being completed to this Final EIS, Congress passed and the President signed Public Law 109-443 to the National Transportation Safety Bill. Portions of this law address the proposed runway safety area improvements at JNU, and provide explicit direction to FAA concerning which alternative is preferred for implementation. Specifically, Public Law 109-443 states that "…the Secretary of Transportation may only select as the preferred alternative the least expensive runway safety area alternative that meets the standards of the Federal Aviation Administration and that maintains the length of the runway as of the date of enactment of this Act." In determining the least expensive runway safety area alternative "…the Secretary shall consider, at a minimum, the initial development costs and life-cycle costs of the project."

Public Law 109-443 provides clear direction to the FAA for selection of the preferred runway safety area alternative. The FAA's selection of an alternative is critical to the Juneau Airport's ability to implement required runway safety area improvements in several respects. Because FAA is the lead federal agency for the proposed actions, and will provide federal monies to fund most of the cost associated with RSA construction, the Airport could not be reasonably expected to fund any alternative other than a No Action Alternative without FAA's financial assistance. The FAA's role in funding decisions is critical, as Congress has placed sole responsibility on the FAA to approve use of federal Airport Improvement Program funds for airport improvement projects. In addition, the FAA has sole authority to approve the Airport Layout Plan depicting the proposed RSA improvements as well as the Airport's operating certificate under Federal Aviation Regulation Part 139. Whether for purposes of funding approval or approval of airport layout, the FAA cannot approve the Airport's Layout Plan or the Airport's operating certificate unless a runway safety area alternative were constructed that comports to Public Law 109-443. Therefore, an alternative not complying with Public Law 109-443 is not be available to the Airport for implementation and not practicable as defined by the 404(b)(1) guidelines.

For the reasons outlined above, Alternatives RSA-6A or RSA-6B are not practicable under the 404(b)(1) Guidelines due to their excessive cost, and Alternative RSA-6D is not practicable because it does not comply with federal law to maintain runway length at JNU. In addition, none of these alternatives are considered practicable by the 404(b)(1) guidelines because they are not available for implementation.

SIGNIFICANT DEGRADATION OF AQUATIC ECOSYSTEM

The USACE would not allow discharge of dredge or fill material from Airport actions if the discharge would violate applicable Alaska water quality standards; violate applicable toxic effluent standards or prohibitions under Section 307 of the Clean Water Act; jeopardize the

[12] Public Law Section 502 Runway Safety Standards, Vision 100 – Century of Aviation Reauthorization Act, dated December 12, 2003.

continued existence of threatened or endangered species or result in the likelihood of destruction or adverse modification of critical habitat; or, violate any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972. None of these criteria are applicable to Alternative RSA-5E.

The USACE Guidelines would also not authorize permit of proposed discharges that result in *significant* degradation of the aquatic ecosystem. The guidelines do not provide strict definition or thresholds for significant adverse effects (on human health and welfare, aquatic life and ecosystems, etc.). FAA recognizes that the USACE will base their finding on factual determinations, evaluations, and tests required by Subparts B and G of 40 CFR Part 230. However, FAA's analysis in the FEIS, Section 4.3, and supporting documentation from other agencies suggest that Alternative RSA-5E would not significantly degrade the aquatic ecosystem. For example, Alternative RSA-5E:

1. Would reduce the size of Mendenhall Wetlands State Game Refuge, a special aquatic site, by approximately 4.1 acres, or about 0.1 percent. Compensatory mitigation would be expected to restore as much or more habitat to the Refuge.
2. Is not, as determined by FAA and concurred with by NMFS, likely to adversely affect ESA-listed species or have an adverse modification to critical habitat. NMFS concluded that "Any effects on listed species are expected to be either discountable or insignificant" (NOAA 2007).
3. Will not significantly affect essential fish habitat (EFH). "NMFS concurs with the FAA's determination that the preferred alternatives incorporate appropriate mitigation and conservation measures that will minimize or compensate for impacts to EFH and that the projects will not cause significant impacts to EFH" (NOAA 2007).
4. Would "meet the conditions set forth in the Mendenhall Wetlands State Game Refuge Management Plan for JNU to acquire Refuge land for airport expansion" (ADF&G 2007).

MEASURES TO MINIMIZE POTENTIAL HARM TO THE AQUATIC ECOSYSTEM

The Section 404(b)(1) guidelines require that the discharge of dredge or fill material include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem. FAA has followed an approach similar to that of the USACE, USFWS, and other agencies in mitigation by avoiding environmental impact where possible and where not possible, minimizing harm to the resources to the extent practicable. Section 2.12 of the FEIS describes this approach, and a similar but abbreviated discussion is included in this ROD.

An example of how this approach has been employed concerns runway safety area, the Mendenhall River, and other aquatic habitat. As is described in some detail in the FEIS, the most desirable safety and operational configuration for JNU runways would be to construct standard RSA without any change to runway thresholds (so as not to jeopardize RNPs and special departure procedures). However, this approach would result in considerable fill into the Refuge and Mendenhall River. FAA determined that that direct fill into the Mendenhall River should be avoided to the extent practicable, even with the added complexity of threshold modifications. As

a result, Alternative RSA-5E includes threshold shifts to the east, along with steepened supporting embankments, that will keep the RSA fill out of the River and minimize fill into estuarine wetlands east of the runway to the extent practicable.

Chapter 2 of the FEIS provides extensive discussion on measures considered to minimize harm to EFH, wetlands, hydrology on and near the Refuge, and to the aquatic ecosystem in general. This ROD also describes, in various sections, design features to be incorporated into the different actions to avoid and minimize environmental impacts. (For examples, see the ROD sections on preferred alternatives; floodplain executive order compliance; and analysis of consistency with the Alaska Coastal Management Program).

The Alaska Department of Fish and Game (ADF&G) has determined that "…the alternatives minimize impacts to the extent practicable" (ADF&G 2007). FAA agrees with this conclusion and has determined that the impact minimization features incorporated into the selected alternatives, along with any additional stipulations incorporated into state and federal permits, will satisfy USACE requirements that the discharge include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem.

SUFFICIENCY OF INFORMATION

The 404(b)(1) guidelines require there to be sufficient information to make a reasonable judgment as to whether the proposed discharge will comply the guidelines. The FEIS, this ROD, and the administrative record for the project include considerable information concerning environmental resources, the actions and alternatives, and potential impacts to aquatic ecosystems. FAA has worked with the Sponsor and state and federal agencies to identify all practicable and appropriate measures to minimize harm, and this information is also included in the FEIS and draft mitigation plan. The FAA concludes that there is sufficient information to determine that the proposed discharge will comply with Section 404(b)(1) guidelines of the Clean Water Act.

SUMMARY OF CONFORMANCE WITH 404(B)(1) GUIDELINES

FAA has determined that the least expensive runway safety area alternative that maintains the length of the runway and satisfies statutory requirements is RSA-5E. The high cost of Alternatives RSA-6A and RSA-6B exceed FAA's RSA costing thresholds and are not practicable according to 404(b)(1) guidelines. Alternative RSA-6D is not practicable because it conflicts with federal statute prohibiting a reduction to the runway length. In addition, none of these alternatives are practicable according to the guidelines because they are unavailable for implementation. FAA therefore concludes that the selected alternative, RSA-5E, complies with the requirements of the guidelines with the inclusion of appropriate and practicable discharge conditions included in this ROD and as part of the conditions of various permits, including the USACE's, to minimize pollution or adverse effects to the affected aquatic ecosystems. FAA therefore believes that RSA-5E is the least environmentally damaging practicable alternative.

10.1.5 ENDANGERED SPECIES ACT (16 U.S.C.§460 ET SEQ.)

FAA engaged in informal Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) to determine if any federally-listed species were present or had the potential to be present in the immediate vicinity of the Airport. NMFS identified two species, the Steller sea lion and the humpback whale. FAA completed and submitted to NMFS a Biological Assessment. FAA found that implementation of the selected alternatives would have no significant adverse effects on any threatened, endangered, or sensitive species. NMFS concurred that the proposed projects are not likely to adversely affect ESA-listed species under NMFS jurisdiction, nor would there be adverse modification of critical habitat. NMFS found that any effects on listed species are expected to be either "discountable (extremely unlikely to occur) or insignificant (effects so minimal that they could not be meaningfully measured, detected, or evaluated)" (NOAA 2007).

10.1.6 RIVERS AND HARBORS ACT (33 U.S.C. §403)

JNU will submit a Section 10 permit application to the USACE. This permit will incorporate all measures to minimize harm and adherence by JNU to any conditions of approval. Receipt of this permit and adherence by JNU to any conditions of approval would demonstrate compliance with this act.

10.1.7 MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT (33 U.S.C. §1413)

If the permit is determined necessary for implementation of the selected alternatives, JNU will submit a permit application to the USACE. Minimization measures will be incorporated into the selected alternatives as identified in the FEIS and this ROD. At the present time, the FAA does not believe this permit is needed.

10.1.8 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (16 U.S.C. 1855(B)(2))

This act requires consultation with the NMFS and identification of measures to minimize harm to EFH. NMFS is a Cooperating Agency for the EIS and was consulted by the FAA throughout the NEPA process (NOAA 2002). An EFH assessment was submitted to NMFS summarizing anticipated impacts and outlining conservation measures developed with NMFS during consultation to minimize those impacts for the selected alternatives. The impacts to EFH resulting from the selected alternatives would have direct, adverse affects on the fish populations, including chum salmon, coho salmon, and Pacific herring, in the Mendenhall estuarine wetland system. However, the selected alternatives would impact a relatively small proportion of available habitat in the landscape area. With the implementation of the proposed conservation measures identified in consultation with NMFS (and found in Appendix I of the FEIS) the direct and indirect impacts to fish populations resulting from these actions would likely be negligible. NMFS concurred with FAA's determination that the selected alternatives incorporate appropriate mitigation and conservation measures that will minimize or compensate for impacts to EFH and that the projects will not cause significant impacts to EFH (NOAA 2007).

10.1.9 Marine Mammal Protection Act (16 U.S.C. §1361-1421, Public Law 92-522)

There would be no significant adverse effects on marine mammals.

10.1.10 Migratory Bird Treaty Act (regulations at 50 CFR Part 21.43) and Executive Order 13186

The FEIS considered the potential for impacts to migratory birds and, in particular, birds of conservation concern to the State of Alaska. No significant adverse effects on migratory birds would occur as a result of implementing any of the selected alternatives. JNU's existing permit issued by the USFWS for harassment and depredation of birds under the Migratory Bird Treaty Act will be maintained for wildlife hazard control. To the extent practicable, measures to minimize impacts to migratory bird habitat are incorporated into the selected alternatives.

10.1.11 Bald and Golden Eagle Protection Act (regulations at 50 CFR Part 22.23)

There would be no significant adverse effects to Golden or Bald Eagles. JNU will continue to implement the Airport's existing permit issued by the USFWS for the harassment of eagles creating wildlife hazards on Airport property.

10.1.12 Fish and Wildlife Coordination Act (16 U.S.C. §661-667e)

The FAA, in accordance with this act, consulted with the USFWS, NMFS, ADF&G, and other agencies throughout the EIS process.

10.1.13 Clean Air Act (42 U.S.C. §7401 et seq.)

No air quality impacts exceeding state and federal standards for criteria pollutants would occur as a result of implementation of the selected alternatives, all of which would conform to the Alaska State Implementation Plan for meeting NAAQS standards.

10.1.14 Aviation Safety and Noise Abatement Act (49 U.S.C. §47501 et seq.)

The selected RSA alternative would result in increases of 1.5 or greater DNL above 65 DNL on Refuge lands. However, the resultant total DNL for the area would be compatible with Refuge land uses, as it would not exceed thresholds established by the FAA's regulations governing airport noise compatibility for such properties.

10.1.15 U.S. Department of Transportation Section 4(f) (49 U.S.C. 303 & 23 U.S.C. 138)

There are no prudent and feasible alternatives that entirely avoid the use of Section 4(f) properties for the selected alternatives. FAA is bound by Public Law 109-443 to select

alternative RSA-5E for implementation. As such, there is no prudent and feasible RSA alternative available to the FAA to avoid impacts to Section 4(f) properties associated with this action. All selected alternatives incorporate all possible measures identified during the EIS process to minimize harm to Section 4(f) properties, and none of the actions would result in substantial impairment to the 4(f) properties. The ADF&G reviewed the FEIS and issued a statement noting that the projects as described meet the conditions set forth in the Refuge Management Plan for JNU to acquire Refuge land for airport expansion (ADF&G 2007). These conditions include: 1) a significant public need for the projects which cannot be reasonably meet off-Refuge or through the use of alternative transportation modes and technologies; 2) that the selected alternatives avoid or minimize impacts to the Refuge to the maximum extent practicable; 3) that proposed mitigation for the selected alternatives fully mitigates impacts to the Refuge, and 4) that the selected alternatives do not create a hazardous attraction to waterfowl.

10.1.16 EXECUTIVE ORDER 12898: ENVIRONMENTAL JUSTICE

There would be no disproportionate impacts to any minority or low income population caused by the selected alternatives.

10.1.17 EXECUTIVE ORDER 13045: CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

There would be no change is risk to health or safety for children caused by the selected alternatives.

10.1.18 ANADROMOUS FISH ACT (AS §41.14.870)

JNU will submit a permit application to the Alaska Department of Natural Resources, Office of Habitat Management and Permitting (ADNR-OHMP). This application will include measures to minimize harm to and within anadromous water bodies that were incorporated into the selected alternatives. Issuance of the permit by the ADNR-OHMP and adherence by JNU to any conditions of approval would demonstrate compliance with this act.

10.1.19 FISHWAY ACT (AS §41.14.840)

JNU will submit a permit application to the ADNR-OHMP. Impediments to fish passage associated with selected alternatives incorporate measures to minimize harm. Issuance of this permit by the ADNR-OHMP and adherence by JNU to any conditions of approval would demonstrate compliance with this act.

10.1.20 ALASKA COASTAL MANAGEMENT PROGRAM (11 AAC 112)

The Alaska Coastal Management Program (ACMP) engaged in a preliminary consistency review with JNU during preparation of the EIS. Issuance of consistency finding by the ACMP and adherence by JNU to any conditions of approval would demonstrate compliance with this program. JNU has submitted a Coastal Project Questionnaire to the ADNR Office of Project

Management and Permitting, ACMP. The Sponsor's application for permits and the questionnaire include a certification that the selected alternatives are consistent with the ACMP and will comply with the enforceable policies of the ACMP. The Airport has separately notified both FAA and ADNR that "…JNU has reviewed those enforceable statewide policies and for the proposed activities which are evaluated in the FEIS, the Airport will comply with the enforceable policies" (JNU 2007a and 2007b). In addition, FAA will ensure that installation of the Runway 26 MALSR and other changes in navigational aids would be conducted in full compliance with enforceable policies of the ACMP. The Final EIS has addressed all of the key ACMP consistency elements, including:

Coastal development and coastal access. Water dependent activities, including navigation along the Mendenhall River will be maintained. Access to, from, and along coastal waters will be maintained.

Utility routes, transportation routes, and facilities. No alternative exists to the current airport location. The selected alternatives avoid known or foreseeable wildlife transit corridors. Existing traditional access to the coastal zone will be maintained through relocation of the Dike Trail. Measures to minimize changes to existing drainage patterns, including active relocation of the East Runway Slough, were incorporated into the selected alternatives.

Sand and gravel extraction. Extraction of fill material for the selected alternatives will come from on-airport sources (e.g., the Float Plane Pond). The Float Plane Pond is an existing source that has previously provided sands and gravels for other airport projects. The footprint of the pond will not be increased as a result of these projects.

Habitats and wetlands. Five types of important habitats, as defined by 11 AAC 112.300, will be affected by the selected alternatives. These include estuaries, wetlands, tideflats, rivers/streams/riparian areas, and a state game refuge. Measures to minimize impacts to these habitats, including natural water flows, drainage, and the special productivity of the habitat, were incorporated into each of the selected alternatives to the extent practicable. These measures include such actions as actively relocating the East Runway Slough as part of the selected RSA alternative, using bottomless arch, box, or squash culverts to maintain fish habitat, incorporating a 50-foot setback along the relocated portion of the Duck Creek channel, and using steep RSA end and side slopes to reduce the overall footprint of this action. These measures also minimize impacts to competing uses for the area, which include primarily recreational activities on the Refuge. Mitigation measures have also been developed to account for those impacts that cannot be avoided. These measures were developed in consultation with the state, federal, and local agencies having jurisdiction over the habitat resources. With regards to the Refuge, the ADF&G finds that the selected alternatives are consistent with the Refuge Management Plan (ADF&G 2007).

Air, land, and water quality. The selected alternatives will not result in an exceedence of state and federal air and water quality standards. The selected alternatives will not

result in the production of hazardous materials that could contaminate lands on or around the Airport.

Historic, prehistoric, and archaeological resources. No known historic, prehistoric, or archaeological resources of importance will be affected by the selected alternatives.

Other enforceable policies of the ACMP are not applicable to the selected alternatives. These include special requirements for natural hazard areas, energy facilities, timber harvest and processing, and subsistence; the selected alternatives do not include energy facilities or timber harvest or processing, and JNU is not located in designated natural hazard area or subsistence area.

10.1.21 JUNEAU COASTAL MANAGEMENT PLAN (CBJ LAND USE CODE 49.70.950F)

CBJ will review the FEIS for consistency with the enforceable ordinances of the Juneau Coastal Management Plan as codified in CBJ Land Use Code 49.70.950F as part of the ACMP review described above. Issuance of a consistency finding by CBJ and adherence by JNU to any conditions of approval would demonstrate compliance with CBJ Land Use Code.

10.1.22 JUNEAU WETLAND MANAGEMENT PLAN (CBJ LAND USE CODE 49.70.1065-1075)

CBJ will review the EIS for consistency with the Juneau Wetland Management Plan as part of the consistency review under the Alaska Coastal Management program process. JNU will submit an application for a conditional use permit to the CBJ Wetlands Review Board. Issuance of a consistency finding by CBJ and a permit by the Wetlands Review Board and adherence by JNU to any conditions of approval would demonstrate compliance with CBJ Land Use Code.

10.1.23 ADF&G SPECIAL AREA PERMIT (5 AAC §95.420)

JNU will submit a special area permit application to the ADF&G for alteration of wildlife habitat in the Refuge. All identified practicable measures to minimize harm are incorporated into the selected alternatives as well as compensatory mitigation required by the Refuge Management Plan and will be included in the permit application. Issuance of the permit by ADF&G and adherence by JNU to any conditions of approval would demonstrate compliance with this program.

10.1.24 PERMIT FOR SCIENTIFIC, EDUCATIONAL, PROPOGATIVE, OR PUBLIC SAFETY PURPOSES (5 ACC §92.033)

JNU's existing permit issued by ADF&G will be maintained.

10.1.25 LEASING AND PERMITTING OF STATE-OWNED LANDS (11 AAC §58, 11 AAC §62.690-730, 11 AAC§96)

JNU will submit a land use application to the ADNR Division of Mining, Land, and Water (DMLW) for any use of State-owned lands, such as those east of the Airport needed for the MALSR and construction of the relocated eastern sloughs and tidal channels, including East Runway Slough. Issuance of a permit or other land use authorization by the ADNR-DMLW and adherence by JNU to any conditions of approval would demonstrate compliance with this program.

10.1.26 CONVEYANCE OF STATE-OWNED LANDS (AS §38.05.825 AND AS §38.05.035(E))

On behalf of CBJ, JNU will request a conveyance of State-owned land in the Refuge from the ADNR-DMLW to implement the selected alternatives. ADNR-DMLW will conduct a best interest finding and decision process to convey the lands to CBJ, but since the land being requested is within the Refuge, the Commissioner of ADF&G must also determine that the conveyance is consistent or compatible with the purpose of the Refuge designation. A joint best interest finding by the ADNR-DMLW and ADF&G, and adherence by CBJ to any conditions of approval, would demonstrate compliance with this program.

10.1.27 DEVELOPMENT IN FLOOD HAZARD AREA (CBJ ORDINANCE 49.70.400)

CBJ will review the EIS for consistency with this ordinance. Implementation of the selected alternatives will not impede the flow of floodwaters, or otherwise cause danger to life and property, at, above or below their locations along the floodway. Altered or relocated portions of Duck Creek would not diminish the flood-carrying capacity of that waterway. Issuance of a consistency finding by CBJ and adherence by JNU to any conditions of that finding would demonstrate compliance with this ordinance.

10.2 DETERMINATIONS UNDER 49 U.S.C. SECTIONS 47106 AND 47107

In accordance with applicable law, the FAA makes the following determinations for this project based upon the appropriate information and data contained in the EIS and the administrative record.

1. The selected alternatives are reasonably consistent with existing plans of public agencies responsible for development in the area (49 U.S.C. 47106(a)(1)). The determination prescribed by this statutory provision is necessary for FAA approval of airport project funding applications. To make this determination FAA considered the following local land use and development plans:
   - The selected alternatives are consistent with the comprehensive land use plan that has been adopted by the CBJ. The existing CBJ Comprehensive Plan (1995, as revised 2004: Subarea 4 Map) designates the land in most of the area immediately surrounding the Airport as primarily for uses that are typically compatible with airport operations, including institutional public uses, general commercial, and industrial. The CBJ

Comprehensive Plan also includes implementing actions related to the Airport, specifically actions 4.1.2, 4.1.3, 4.1.4, and 4.1.5 of Policy 4.1. The selected alternatives are consistent with the applicable implementing actions of the Comprehensive Plan.

- The City and Borough Assembly approved the Airport Master Plan in 1999. The Airport Master Plan identified the needs for and the objectives of most of the actions evaluated in the EIS. The selected alternatives are consistent with the Airport Master Plan.
- The Juneau Parks and Recreation Comprehensive Plan (1996) identifies the area around the Airport as an important recreational area and calls for the maintenance of public access to the Dike Trail. Consistent with the referenced plan, the selected alternatives will maintain public access to and use of the Dike Trail through the relocation of the trail around the Runway 08 RSA.
- The conceptual plan for relocation of the Duck Creek corridor presented in the EIS is consistent with improvements needed to address major problems identified in the Duck Creek Watershed Management Plan (Koski and Lorenz 1999) for the reach of Duck Creek on Airport property.
- The selected alternatives incorporate efforts to avoid, minimize and compensate for unavoidable impacts to the Refuge in conformance with the Refuge Management Plan (ADF&G 1990). The Draft compensatory mitigation plan summarized in the FEIS and this ROD was prepared in consultation with ADF&G and Alaska DNR, the two agencies with land management responsibilities and permitting authorities for the actions affecting the Refuge.
- The Refuge Management Plan also requires that Airport expansion not create a waterfowl attractant. The selected alternatives have been developed to avoid the creation of waterfowl attractants, and in the case of the wildlife hazard management plan to reduce existing attractants.

In light of the above, the FAA finds that the projects are consistent with the existing land use and development plans of public agencies in the area in which the Airport is located. The FAA is satisfied that it has fully complied with 49 U.S.C. 47106(a)(1).

2. The Secretary [of Transportation] is satisfied that the interests of communities in or near the project location have been given fair consideration (49 U.S.C. 47106.(b)(2)). The determination prescribed by this statutory provision is necessary for FAA approval of airport development project funding applications. The local planning process over the past nine years, beginning with the Airport Master Plan update and preparation of a draft environmental assessment, provided numerous opportunities for communities and residents near the Airport and within CBJ to voice concerns and specific interests. The FAA continued to solicit local input during the EIS, beginning with publication of a general Notice of Intent (NOI) on August 11, 2000 followed by a more specific NOI on June 1, 2001 to prepare an environmental impact statement. Nearby communities and their residents have had the opportunity to express their views during public scoping meetings on June 20 and September 18, 2001, during the Draft EIS comment period, at public meetings and public hearings for the DEIS, and during the 45-day review period following public issuance of the Final EIS, including a public meeting to discuss the FEIS on May 14, 2007. FAA solicitation of public and community input, from oral comment at informal meetings and public hearings to written comment during scoping and document review periods, provided opportunities for

communities and residents to influence the scope of the EIS, alternatives considered, and impact analysis methods. The FAA's consideration of community interests, including those of federal, state, and local officials, public organizations, and individuals are set forth in Chapter 6 and Appendix M of the FEIS.

In light of the above, the FAA has determined that throughout the environmental process leading up to publication of the FEIS, beginning at its earliest planning stages, fair consideration was given to the interest of communities in or near the project location.

3. To the extent reasonable, the Airport Sponsor has taken or will take actions to restrict land uses in the airport vicinity including the adoption of zoning laws, to ensure the uses are compatible with airport operations (49 U.S.C. 47107.(a)(10)).
    - On March 6, 2007 the Airport provided written assurance to the FAA that appropriate actions have been or will be taken to ensure that land uses in the vicinity of the airport are currently compatible and will be compatible with airport operations.
    - Both the CBJ Comprehensive Plan and CBJ zoning ordinances were being revised at the time the FEIS and this ROD were prepared. The Airport is working with CBJ's Community Development Department to ensure that the revisions to CBJ's Comprehensive Plan and zoning ordinances limit land uses in the vicinity of the Airport to those that are compatible with airport operations. The Airport specifically requested that land uses identified in the Comprehensive Plan update in the vicinity of the Airport be compatible with noise exposure levels identified on the noise contours developed for the EIS. It should be noted that implementation of the selected alternatives would not result in a change in the number of aircraft operations, but would involve a slight shift in runway thresholds resulting in a minor shift in the noise contours.

In light of the above, the FAA is satisfied that the Juneau International Airport has taken and will continue to take actions necessary to restrict land uses in the Airport vicinity to ensure the allowed uses are compatible with Airport operations.

10.3 RUNWAY SAFETY AREA PRACTICABILITY DETERMINATION

After completion of the Master Plan (USKH 1999) and the Environmental Assessment (USKH 2000) to consider impacts from runway safety area improvements and other actions, the FAA determined that the existing RSA at JNU does not meet the standards in the FAA Advisory Circular 150/5300-13, Airport Design, but that it may be possible to achieve RSA compliance at JNU using traditional means (the FAA defines "traditional means" as "graded areas surrounding the runways."). Based upon the analysis disclosed in the FEIS, the FAA determines that while the existing RSA does not meet standards it is possible to improve the RSA so that it will meet current standards.

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11.0 SUMMARY OF ENVIRONMENTAL IMPACTS

Chapter 4 of the Final EIS provides a complete description of the environmental impacts projected to occur for each of the proposed actions and alternatives. For some environmental resources, such as noise and air quality, the conclusion from the analysis is that there would be relatively little or no adverse environmental impact, as measured against the existing baseline conditions or against conditions predicted for the No Action Alternatives. For other environmental resources, however, the environmental impacts are anticipated to be relatively substantial and reach significance thresholds.

The following table, Table 5, provides a summary of the impacts predicted for combined development of all selected alternatives. The tables in Chapter 2 of the FEIS provide a comparative summary of the impacts predicted for each of the alternatives considered in detail.

Table 5. Summary of Combined Impacts of All Actions Comprising FAA's Preferred Alternative

Resource/Issue	Combined Effect
Construction	
Disturbance Area	195 acres
Refuge Disturbance	18 acres
Fill Volume	767,446 cubic yards
Cost	
Construction	$74.5 million
Life Cycle (for RSA only; does not include labor, maintenance, or continuing and periodic costs associated with other actions)	$13.4 million
Compensatory Mitigation	$5.25 million
Total Cost	$93.2 million
Noise	No significant impact over noise sensitive areas
Human Environment and Compatible Land Use	Permanent taking of Refuge land for RSA development, MALSR installation, and wildlife habitat modifications. Minor degradation of recreational opportunities (e.g., wildlife viewing and bird watching).
Socioeconomic	No measurable impact on air carrier operations. Improved flight safety at JNU, providing good environment for economic/business growth.

Table 5. Summary of Combined Impacts of All Actions Comprising FAA's Preferred Alternative

Resource/Issue	Combined Effect
Air Quality	No impacts in exceedence of State and Federal air quality standards; construction-related emissions increase in the short-term.
Hazardous Materials and Solid Wastes	Minor amounts of construction debris would be generated by preferred alternatives No change in hazardous materials produced beyond slight increase in urea application. Risk of fuel truck petroleum spills reduced.
Water Resources and Floodplains	76% increase in impervious and less pervious surfaces (154 acres) within the project area. Loss of 331 acre feet of floodplain/tidal prism storage volume. Increased impervious surface would increase contaminant loads to receiving waters; water quality would remain within local, State, and Federal standards. Improved long-term sediment loading in Duck Creek but short-term increase in turbidity during construction.
Vegetation	Reduction of estuarine marsh communities by approximately 54.5 acres. Supratidal and forest communities would be reduced by 16.0 acres and 34.4acres, respectively. Active relocation of a tidal channel around the east end of the runway would minimize alteration of existing plant community composition following construction.
Wetlands	Reduction of estuarine high and low marsh by approximately 52.8 acres within the landscape area. Palustrine wetlands would be reduced by 22 acres within the landscape area (16 acres of which would be dredged). No net loss of riverine habitat would occur and lacustrine wetlands would not be affected. Active relocation of a tidal channel around the east end of the runway would minimize the conversion of low marsh to high marsh and unvegetated tidelands in this area.

Table 5. Summary of Combined Impacts of All Actions Comprising FAA's Preferred Alternative

Resource/Issue	Combined Effect
Fisheries	Reduction of EFH by approximately 68 acres Active relocation of a tidal channel around the east end of the runway would minimize the conversion of low marsh to high marsh and unvegetated tidelands in this area and maintain hydrologic connectivity north and south of Runway 26, thereby minimizing impacts on EFH. Benefits to Duck Creek through relocated, lined channel, and bottomless arch culverts Lengthened culvert in Jordan Creek increases fish passage difficulty but installation of bottomless arch, box, or squash culverts with retention features to capture sediment and gravels would minimize these impacts Expansion of impervious surfaces and conversion of ditches to drains may increase potential for injury to fish through increased contaminant loads but water quality would be maintained within local, State, and Federal standards.
Wildlife	Reduction in estuarine habitats by approximately 54.5 acres within the landscape area. Supratidal and forest habitats would be reduced by about 16.0 and 34.4 acres, respectively. No significant adverse effect on Steller sea lion or humpback whale, the two federally-listed species with the potential to occur in the area.
Cultural Resources	No known historic properties affected. Programmatic Agreement between FAA, SHPO, and JNU for phased identification of subsurface resources and resolution of adverse effects has been executed.
Visual Resources	Degradation of the natural character of some areas on Airport and surrounding landscapes, but consistent with previous development and land use objectives.

Table 5. Summary of Combined Impacts of All Actions Comprising FAA's Preferred Alternative

Resource/Issue	Combined Effect
DOT Section 4(f)	Direct impact on 4(f) properties through use of Refuge land and relocation of Dike Trail. No constructive use of 4(f) lands.

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12.0 SUMMARY OF MITIGATION MEASURES

The Council on Environmental Quality regulations implementing NEPA stipulate that the EIS must include measures to mitigate environmental impacts that are not already included in the proposed action or alternatives (40CFR§1502.14(f)). "Mitigation" may typically include methods to 1) avoid an impact altogether, 2) minimize the magnitude of impact, or 3) reduce the impact over time. These types of mitigation, when implemented, would be incorporated into an alternative design prior to construction so as to avoid, minimize, or reduce the environmental effects. Two other types of mitigation, rehabilitation and compensation, are also important to consider. However, these are methods of mitigation implemented after impact has occurred.

The FAA and other federal agencies use a sequential approach to assessing environmental impacts and mitigation for adverse impacts that may result from projects such as those selected for implementation at JNU. This approach includes:

1. Avoiding the impact altogether by not taking a certain action or parts of an action.
2. Minimizing impacts by limiting the degree of magnitude of the action and its implementation.
3. Rectifying the impact by repairing, rehabilitating, or restoring affected environment.
4. Reducing or eliminating the impact over time by preservation maintenance operations during the life of the action.
5. Compensating for the impact by replacing or providing substitute resources or environments.

12.1 MEASURES ADOPTED TO AVOID OR MINIMIZE HARM

The FAA has attempted to avoid or minimize environmental impacts in three ways. First, the need for each proposed action has been scrutinized and independently evaluated. In this manner the selected alternatives are limited in scope to only that development which is needed and not necessarily to that which the Sponsor would prefer to have approved. For example, the FAA has determined that fewer aviation facilities are needed now and in the reasonably foreseeable future than were forecast in the Master Plan and originally requested by the Sponsor.

Second, where possible, selected alternatives avoid certain environmental resources. For example, the selected RSA alternative, RSA-5E, almost entirely avoids fill into the Refuge east of the Airport and minimizes direct impacts on the Refuge west of the Airport. Similarly, development projects take advantage of on-site conditions by using the Float Plane Pond for most fill material (other than riprap), thereby avoiding the social and environmental impacts associated with transporting materials by truck from an off-site quarry to the Airport.

Finally, selected alternatives will not avoid environmental impacts to some resources but the magnitude of impact is minimized where possible. For example, the use of declared distances criteria allow standards to be met using a reduced runway safety undershoot area, thereby minimizing impact to wetlands and habitat. Also, by overlapping the RSA and WHMP

disturbance footprints west of the runway environmental impacts to wetlands east of the runway are minimized.

12.2 COMPENSATORY MITIGATION PLAN SUMMARY

The FEIS described anticipated elements of a compensatory mitigation plan. Since publication of the FEIS, in April 2007, the Sponsor and agencies have continued to refine and finalize components of the mitigation plan. The following sections summarize the current compensatory mitigation strategy of the draft plan, and specific steps that must be taken. Included in this description are elements that have changed since publication of the FEIS.

JNU would establish an in-lieu fee for mitigation and would provide that fee, subject to additional considerations including FAA wildlife hazard siting criteria, to an organization experienced in land conservation and protection agreements. The USACE has established similar agreements with organizations in some locations that allow a transfer of in-lieu fees for mitigation projects. These agreements typically define the terms of funds management and the operational procedures to be followed.

One such agreement with a Southeast Alaska organization makes use of an advisory committee to recommend, evaluate, and review mitigation projects. A similar committee would be established as part of the implementation of the compensatory mitigation program for JNU. A JNU representative would be part of the advisory committee to ensure that proposed mitigation projects would not increase wildlife hazards to aviation. ADF&G would also be part of the advisory committee to ensure that lands acquired to address the Refuge Management Plan requirements are of at least equal value to those lost (using the functional capacity units (FCU) methodology described in Section 3.8.1 of the FEIS, as modified from Adamus (1987)).

Using a portion of the in-lieu fee, the organization would establish a reserve fund dedicated to acquiring accreted lands within the original Refuge boundary, with a goal of fully mitigating for direct unavoidable impacts to the Refuge and for unavoidable impacts to wetlands within the impacted Refuge lands caused by the Airport projects. The total extent of unavoidable impacts to these resources are expressed as the calculated FCU losses. The amount set aside would be based on the actual FCU loss within the Refuge and the established dollar value per FCU set forth in the mitigation plan. The remaining portion of the in-lieu fee would be used to acquire lands or carry out mitigation projects recommended by an advisory committee. As of the date of publication of this ROD, eight potential mitigation projects/properties had been identified: Mendenhall Peninsula Accretions, Sunny Point Accretions, North Douglas Accretions and Properties, Hendrickson Point Parcel, Strawberry Creek, Pt. Bridget State Park Inholdings, Chuck River Properties, and Chilkoot River Properties.

The Mitigation Plan calculated that 72 acres of wetlands would be affected, with about 12.7 acres of Refuge land included in this total. An average 119.3 FCU per acre was applied to the mitigation formula based on the types of wetlands impacted, resulting in a total loss (from the 72 acres) of 8,588.7 FCUs. An estimated average economic value of $30,000 per acre was established for all wetlands impacted by the selected alternatives, using the results of a Market Value Study for Wetlands within the Refuge conducted by Horan and Company (November

2005). These values were used to determine an average rate of $251 per FCU. When this rate is multiplied by the total number of FCUs lost as a result of JNU's proposed projects (8,588.7) a baseline compensation value of $2,160,000 is established.

A compensation ratio of 2:1 (in terms of dollars to be spent for value lost, or FCUs preserved for FCUs lost) was accepted by the agencies that participated in discussions related to the Mitigation Plan. Thus, when the baseline compensation value is adjusted for this 2:1 ratio, the resulting compensation value is $4,320,000. Direct project and administrative costs to be incurred by the organization would also be incorporated in the funding. These costs are estimated at $923,463. As such, the total value of the compensatory mitigation is estimated to be $5,243,463.

The values presented above – for example, acres lost, total FCUs lost, total compensation dollars, etc. – are approximate. The compensatory mitigation plan, when approved as part of the state and federal permitting actions, will provide the final values.

12.2.1 SPECIFIC MITIGATION MEASURES

In addition to the package of in-lieu fees and conditions of approval, noted earlier, specific minimization and mitigation measures will be implemented relative to fish habitat within the Mendenhall River, Duck Creek, and Jordan Creek. The 2007 Draft Mitigation Plan (June 2007) contains specific minimization and mitigation measures that will be implemented. Permits issued by agencies will also have additional minimization and mitigation measures. These may include such elements as construction timing windows, best management practices, avoidance mechanisms to minimize impact to adult and juvenile salmon migrations, stormwater management, and so forth. The mitigation measures incorporated into the final compensatory mitigation plan and approved project permits must be adhered to by JNU and its agents, and are incorporated by reference into this ROD.

12.2.2 MITIGATION AUTHORIZATION, MONITORING AND ENFORCEMENT

In accordance with 40 CFR 1505.3, the FAA would take appropriate steps through federal funding grant assurances and conditions, airport layout plan approvals, and contract plans and specifications, to ensure that the following authorizations and mitigation monitoring and enforcement actions are implemented during project development. JNU would monitor the implementation of these mitigation actions. Reports of monitoring would provide necessary assurance that representations made in the FEIS with respect to mitigation are carried out. These mitigation actions would be made the subject of a special condition included in future federal airport grants to the City and Borough of Juneau.

The proposed monitoring elements of the mitigation plan and enforcement programs are summarized below:

- JNU shall obtain all necessary permits and authorizations prior to construction.
- JNU shall prepare a quarterly update on the status of the mitigation measures and provide this to the FAA until such mitigation efforts are complete. The FAA shall monitor the

implementation of these mitigation actions as necessary to assure that they are carried out as project commitments.

- JNU shall develop an erosion and sediment control plan prior to commencement of construction of build alternatives identified in the ROD.
- To minimize impacts as much as possible, JNU shall direct contractors and consultants to design and use "best management" construction practices outlined in the erosion and sediment control plan to minimize impacts to water quality and to comply with established TMDLs for receiving waters including Duck Creek and, if established, Jordan Creek as discussed in the FEIS.
- JNU will provide monitoring of the Duck Creek relocation for up to five years after construction is complete. Monitoring will begin immediately after construction is complete and will include documentation of streambed characteristics, channel morphology, stream discharge, ground water levels, effectiveness of fish passage, and vegetative success of the constructed floodplain and riparian areas.
- JNU shall carry out the stipulations for phased identification for archaeological resources as outlined in the Programmatic Agreement (see Appendix C) between the FAA, the Alaska State Historic Preservation Officer (SHPO), and the City and Borough of Juneau, including the following:
  - Preparation of an archaeological resource identification plan;
  - Field inspection for obscured and subsurface resources in high site potential areas;
  - Preparation of a report including determinations of eligibility and findings of effect for any resources identified during field inspections;
  - Consultation with the SHPO regarding the determinations of eligibility and findings of effect;
  - Consultation with the SHPO regarding mitigation of any adverse effects;
  - Completion of agreed-upon mitigation measures.
- JNU shall ensure that all construction personnel including CBJ construction contract project managers and construction contractors are instructed in the identification of cultural resources, and in the unlikely event that historic properties are discovered during construction, shall cease activity in the area and contact the Alaska SHPO and other appropriate agency and/or tribal officials within 48 hours of the discovery.

12.2.3 ADDITIONAL CONDITIONS OF APPROVAL TO MINIMIZE HARM

The alternatives selected for implementation at JNU incorporate elements to avoid impacts, or reduce or minimize the impacts over time (see description of preferred alternatives). Other options and activities to avoid or minimize harm were identified in the previous sections to this ROD. Additional activities to avoid or minimize harm will be stipulated in an approved compensatory mitigation plan and in state and federal permits. All of these design features and mitigation elements are incorporated by reference into the selected alternatives and this ROD. The following conditions, designed to reduce environmental impacts, must also be included into design and construction of the selected alternatives:

- JNU shall implement the avoidance, minimization, and compensatory mitigation measures incorporated into the selected alternatives and final compensatory mitigation plan.
- Federal grant-in-aid funds shall not be applied toward project construction until all required permits have been received and Alaska DNR has issued concurrence with the Sponsor and FAA's determination that the selected alternatives are consistent with the Alaska Coastal Zone Management Program.
- The navigable portion of the Mendenhall River channel in the Runway 08 approach light lane shall not be reduced as a consequence of MALSR relocation so as to assure no diminishment of navigability.
- If one or more of the 1,000-foot light towers for the Runway 08 MALSR relocation require placement within the navigable Mendenhall River channel, the large armor rock located on the opposite bank shall be removed. Removal of the armor rock will allow the channel to reestablish a more natural course and provide more navigable room away from the new MALSR lights.
- If stabilization of the west Mendenhall River bank in the MALSR light lane is needed to protect the 1,200-foot light tower it will be accomplished by the use of a bioengineered bank stabilization design, incorporating large woody debris, rock and soil to protect against erosion. The bank stabilization will be designed to ensure that there is no increase in wildlife hazard attractant. This form of bank protection will help dissipate river energy and provide new aquatic habitat.
- To reach the MALSR 1,000-foot light towers a catwalk or at grade access road similar to the one proposed for the proposed MALSR installation on Runway 26, or combination of the two systems, will be constructed from the bank that will connect the light towers and provide access for testing, light replacement and other maintenance as needed. This form of access will ensure continued unobstructed flow of the river around the light tower(s).
- Use of a steepened, 2:1 fill slope on the west Runway 08 RSA end to reduce the fill footprint and prevent encroachment into the Mendenhall River.
- Use of a steepened, 1.5:1 embankment slope from the edge of the Float Plane Pond access road at the Runway 08 RSA end to the relocated EVAR/Dike Trial to reduce the fill footprint and prevent encroachment into the river.
- Use of a 1:1 or steeper fill slope, or engineered retaining walls, on the south, lateral RSA fill to reduce the footprint and loss of estuarine wetland habitat.
- Replacement of the existing corrugated metal pipe culvert in Jordan Creek (under the runway) with a system of connecting bottomless arch, box, or squash[13] culverts with retention structures across the bottom to retain sediments and gravel and create riffles. This action, implemented when the existing culvert is at the end of useful life or during the next runway reconstruction, whichever is sooner, would increase flow capacity,

13 Subsequent to publication of the FEIS, JNU's consultant identified the potential for using squash culverts in Jordan Creek as opposed to bottomless arch or box culverts. The squash culverts would include bottom ridged retention systems that would collect sediments and gravel and create riffles, mimicking to a certain extent natural stream bottom conditions. Representatives from NMFS, ADNR, EPA and the CBJ Wetland Review Board all reportedly agreed that squash culverts would be an acceptable substitute (E-mail communication from T. Carson, JNU Consultant to P. Sullivan, FAA Project Manager, 6/18/2007).

improve channel alignment, allow more room for channel meander, and provide other benefits to aquatic life.

- Installation of bottomless arch culvert, box, or squash culvert extensions where the RSA extends over Jordan Creek. The culvert extensions and main culvert (described above, when replaced) would provide at least the stream width created by a 12-foot arch culvert.
- Daylight wells with surface grates to facilitate fish passage in Jordan Creek culvert, included in the FEIS preferred alternative and essential fish habitat assessment preferred alternative descriptions, are not required by this ROD based on correspondence from JNU and concurrence with some state and federal agencies. However, should one or more agencies require daylight wells for the culvert as a permit condition the requirement will be incorporated by reference as a requirement of this ROD.
- Construction of a new channel around the east Runway 26 RSA to maintain tidal exchange between and hydraulic connectivity with wetlands south of Miller-Honsinger Pond to wetlands south of the runway, Jordan Creek, and the Gastineau Channel.
- Since preparation of the FEIS the Sponsor has prepared a concept study for dredging (DOWL 2007). FAA's Selected Alternative shall incorporate by reference all elements of this study that are included by state and federal agencies as permit conditions.

13.0 DECISION AND ORDER

Approval by FAA to implement the selected alternatives would signify that applicable federal requirements relating to airport development and planning have been met and would permit Juneau International Airport to proceed with the projects and possibly receive federal funding and/or approval to impose and use Passenger Facility Charge funds for eligible items. Not approving these agency actions would prevent JNU from proceeding with design and construction of the selected alternatives.

DECISION

I have carefully considered the FAA's goals and objectives in relation to various aeronautical aspects of the proposed development actions discussed in the Final EIS. The review included: the Purpose and Need that the projects would serve, the alternative means of achieving the Purpose and Need for the projects, the environmental impacts of a range of alternatives, and the mitigation necessary to preserve and enhance the human, cultural, and natural environment.

Under the authority delegated to me by the Administrator of the FAA, I find that the projects in this ROD are reasonably supported. I, therefore, direct that actions be taken to carry out the following agency actions, including:

1. Determinations under 40 U.S.C. §47106 and §47107 pertaining to FAA funding of airport development, including approval of the revised Airport Layout Plan (ALP) in accordance with 49 U.S.C. §47107(a)(16) for the selected alternatives, summarized in Section 2.13 of the FEIS and this ROD and including the following elements.
   - Projects design
   - Site Preparation
   - Runway, Taxiway, and Runway Safety Area Construction
   - Aviation Facilities Development
   - Other Landside Development including the SREF and Fuel Farm access road
   - Installation of Navigational Aids
   - Relocation of the ASOS and other navigation aids
   - Implementation of a revised WHMP
   - Environmental Mitigation
2. Approval under 49 U.S.C. §47107 et seq. of projects eligibility for Federal grant-in-aid funds under 49 U.S.C. §47104 as well as approval, under 49 U.S.C. §40117 of an application to impose and use passenger facility charges.
3. Determination and actions, through the aeronautical study process of any off-airport obstacles that might be obstructions to the navigable airspace under the standards and criteria of 14 CFR Part 77. In addition, evaluation of the appropriateness of proposals for on-airport development from an airspace utilization and safety perspective based on aeronautical studies conducted pursuant to the processes under the standards and criteria of 14 CFR Part 157.

4. Review and subsequent approval of an amended Airport Certification Manual for JNU (per 14 CFR Part 139).
5. Approval of protocols for maintaining coordination among sponsor offices, construction personnel, and appropriate FAA program offices, ensuring safety during construction.
6. Determinations that air quality impacts associated with the proposed project conform to the State Implementation Plan under Section 176(c)(1) of the Clean Air Act, and amended [42 U.S.C. §7506(c)(1)], and 40 CFR Part 93.

Finally, based upon the administrative record of this project, I certify, as prescribed by 49 U.S.C. § 44502 (b), that implementation of the proposed projects is reasonably necessary for use in air commerce.

APPROVED AND ORDERED

Byron K. Huffman
Acting Regional Administrator, Alaskan Region

7/6/07
Date

RIGHT OF APPEAL

This ROD presents the FAA's final decision and approvals for the actions identified, including those taken under the provisions of 49 U.S.C. Subtitle VII, Parts A and B. This decision constitutes a final order of the FAA Administrator subject to review by the Court of Appeals of the United States in accordance with the provisions of 49 U.S.C. § 46110. Any party seeking to stay the implementation of the ROD must file an application with the FAA prior to seeking judicial relief, as provided in Rule 18(a), Federal Rules of Appellate Procedure.

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APPENDIX A: AGENCY CONCURRENCE LETTERS

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APPENDIX A

AGENCY CONCURRENCE LETTERS

Appendix A to this EIS includes a limited documentation set of relevant findings and determinations from federal and state agencies. Permit decisions by all applicable agencies are expected to be issued after issuance of the Record of Decision. The following documentation is found in this appendix:

Letter from National Marine Fisheries to FAA documenting findings for Essential Fish Habitat and the Endangered Species Act. May 9, 2007.

Letter from the Alaska Department of Fish and Game to the FAA documenting findings of consistency review for use of lands from the Mendenhall Wetlands State Game Refuge. June 11, 1007.

Letter from the Juneau International Airport to the Alaska Department of Natural Resources documenting consistency with the enforceable policies of the Alaska Coastal Management Program. June 27, 2007.

Letter from the Juneau International Airport to the FAA documenting consistency with the enforceable policies of the Alaska Coastal Management Program. June 11, 2007.

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

MAY 14 2007

May 9, 2007

Patricia Sullivan, Project Manager
Alaskan Region Airports Division
Federal Aviation Administration, USDOT
222 West 7th Avenue, #14
Anchorage, AK 99513

Dear Ms. Sullivan:

The National Marine Fisheries Service (NMFS) has reviewed the Juneau International Airport Draft Environmental Impact Statement (DEIS) and the associated Biological Assessment (BA). In your letter to NMFS, you requested concurrence that the proposed action is not likely to adversely affect federally listed threatened, endangered or proposed species under NMFS' jurisdiction. You also requested concurrence that the proposed mitigation and conservation measures will adequately minimize impacts to Essential Fish Habitat (EFH), such that implementation of the preferred alternative will result in no significant adverse effects on EFH.

The proposed action area is located in Juneau, Alaska. Under the Preferred Alternative, RSA-5E, the proposed actions include the following: the addition of 230 feet of fill material on the west runway end; 850 feet of fill on the east runway end, which will block a main tidal slough and require relocation and construction of a slough around the end of the runway; widening of the lateral runway safety area (RSA) to encompass an additional 14 acres of graded surface area; relocation of Duck Creek and its confluence with the Mendenhall River through channel realignment and shortening by 200 feet; lengthening of the culvert system over Jordan Creek to 770 feet in order to accommodate the widened RSA; and fill of selected wetlands in the project vicinity as part of the airport's Wildlife Hazard Management Plan. The project will also include installation of navigational light towers, access road improvements, construction of a new snow removal equipment and maintenance facility, and development of new aircraft parking and storage facilities.

ESA Assessment

Endangered Species Act (ESA) listed species under NMFS' jurisdiction that may be affected by this action include the endangered humpback whale, the threatened eastern distinct population segment (eDPS) of Steller sea lion and the endangered western distinct population segment (wDPS) of Steller sea lion, as listed in the BA. Critical habitat has been designated for Steller sea lions in Alaska. No critical habitat has been designated for humpback whales throughout their range. Occurrences of humpback whales and Steller sea lions are uncommon in the vicinity of the project, but have been recorded in Fritz Cove, Auke Bay and Gastineau Channel. The nearest NMFS-documented Steller sea lion haulout is on Benjamin Island, approximately 18 miles northwest of Juneau International Airport. The nearest Steller sea lion critical habitat is also on Benjamin Island. No critical habitat

for sea lions has been designated in the project area. According to the BA, the FAA does not anticipate any direct effects on whales or sea lions, but indirect effects may result from impacts to the species' prey base. Habitat alteration at the action site and surrounding waters could affect listed species' prey due to short-term or long-term degradation of spawning and/or rearing habitats in the Mendenhall Wetlands, Duck Creek and Jordan Creek.

Based on the analysis provided in the Biological Assessment and draft EIS, the FAA has determined and NMFS concurs that the proposed project is not likely to adversely affect ESA-listed species under NMFS jurisdiction. Because no critical habitat has been designated in or near the action area, no adverse modification is anticipated. Any effects on listed species are expected to be either discountable (extremely unlikely to occur) or insignificant (effects so minimal that they could not be meaningfully measured, detected, or evaluated).

A. Humpback whales

The potential for whales to be affected by this project depends on the frequency of their occurrence in or around the action area. Due to the shallow water depths around the project site, humpback whales are very uncommon in this area. Occurrences of humpback whales have not been documented in the Mendenhall Wetlands. Therefore, it is unlikely that the proposed actions will have any direct effect on the species. The placement of fill in the tidelands and alteration of fish habitats in Duck Creek and Jordan Creek may have an effect on some prey species, but such effects are not expected to impact whale foraging opportunities in Auke Bay or Fritz Cove.

Construction at the project site is likely to increase the frequency and duration of noise in the vicinity. However, no blasting or other harmful noise-generating activities are proposed for this project, so any noise impacts on whales in Fritz Cove, Auke Bay and Gastineau Channel are expected to be discountable. Therefore, any potential effects of the project on whales are expected to be insignificant (effects so minimal that they could not be meaningfully measured, detected, or evaluated) or discountable (effects are extremely unlikely to occur).

B. Steller sea lions

Steller sea lions have been documented in the vicinity of the Mendenhall Wetlands and are known to forage in the adjacent waters of Fritz Cove and Auke Bay. Given that the eDPS of Steller sea lion is common throughout coastal Southeast Alaska and known to range widely, it is reasonable to expect that they may be present near the project site on occasion. It is also possible that individuals from the wDPS may forage in the vicinity occasionally. No critical habitat has been designated for Steller sea lions in or around the action area. Because the proposed action area is not known to be an important sea lion foraging area and sea lions are rarely observed in the vicinity, any impacts on sea lion foraging and prey availability are expected to be insignificant.

Conclusion
NMFS concurs with the FAA's determination that the planned action is not likely to adversely affect ESA-listed species or designated critical habitat under NMFS jurisdiction. Given the limited scope of the action in marine waters and the low probability of interactions between project activities and protected species or their habitats, NMFS concludes that this action will have, at most, an insignificant effect on the listed species or critical habitats under NMFS jurisdiction.

Re-initiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) take of a listed species occurs, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered, or (4) a new species is listed or critical habitat designated that may be affected by the action.

EFH Conservation Measures
The draft FEIS includes conservation recommendations that were provided to the FAA by NMFS staff to reduce and mitigate for unavoidable impacts to EFH. These conservation recommendations include construction of a slough channel at the relocated end of Runway 26 to maintain existing drainage patterns and convey tidal waters from high intertidal marsh habitat north of the runway into Gastineau Channel, using bottomless arch culverts in anadromous channels, and installing light grates in the extended Jordan Creek culvert. Considerable effort has also been expended to ensure that project developments will have minimal impacts to wetlands and EFH, and a thorough mitigation plan has been developed that will compensate for unavoidable loss or impairment of habitat functions. NMFS concurs with the FAA's determination that the preferred alternatives incorporate appropriate mitigation and conservation measures that will minimize or compensate for impacts to EFH and that the projects will not cause significant impacts to EFH.

NMFS appreciates the long and dedicated efforts of the FAA to fully engage in efforts to avoid, minimize and mitigate for any adverse impacts to the aquatic environment. Please contact Erika Phillips, Protected Resources Division (586-7312) with any questions regarding ESA issues or Sue Walker, Habitat Conservation Division (586-7646) regarding EFH and conservation measures.

Sincerely,

Robert D. Mecum

Robert D. Mecum
Acting Administrator, Alaska Region

F-007

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME

Division of Sport Fish

PO Box110024
Douglas, AK 99811-0024
PHONE: (907) 465-4346
FAX: (907) 465-4272

June 11, 2007

Ms. Patti Sullivan, Project Manager
FAA, Airports Division-Alaska
222 W. 7th Ave., #14
Anchorage, AK 99513-3813

Dear Ms. Sullivan:

The Alaska Department of Fish and Game (ADF&G) has reviewed the Final EIS and Section 4(f) Evaluation for the Juneau International Airport Projects for compliance with provisions in the Mendenhall Wetlands State Game Refuge (MWSGR) management plan for the City and Borough of Juneau to acquire refuge land for airport expansion. Proposed projects that will affect refuge land and resources include the relocation of the mouth of Duck Creek, west end wetlands fill as part of implementing the Wildlife Hazard Management Plan, expansion of runway safety areas (RSAs), and construction of MALSR lights with a service road extending east of the runway. Modifications to the existing MALSR lights on refuge land extending west of the runway may also be necessary. The MALSR lights project is sponsored by the Federal Aviation Administration (FAA) and requires easements, but not acquisition of refuge land. The remaining projects are sponsored by Juneau International Airport (JNU) and require acquisition of about 17 acres of refuge land.

The refuge management plan lists 4 conditions that must be met before JNU can acquire refuge land for airport expansion:

1. There must be a significant public need for the expansion which cannot be reasonably met off-refuge or through use of alternative transportation modes and technologies;
2. Use of refuge lands must be avoided or minimized to the maximum extent feasible;
3. All impacts to the refuge and refuge resources must be fully mitigated through restoration and/or replacement; and;
4. The expansion project cannot create a hazardous attraction to waterfowl.

The following is my understanding of how JNU and FAA have sought to meet those conditions based on project descriptions and rationales in the FEIS.

Significant Public Need That Cannot Be Met Off-Refuge

Relocating the mouth of Duck Creek and filling wetlands at the west end of the runway will eliminate attractions to waterfowl and other large birds that pose serious hazards to aircraft. This

need to enhance public safety cannot be met off-refuge without moving the airport. In addition, the statute establishing the refuge requires the ADF&G to assist JNU in eliminating hazardous attractions to waterfowl on refuge property adjacent to the runway.

Expanding RSAs to enhance public safety has been mandated by the FAA and is a condition of JNU retaining its certification to operate in its current capacity. FAA and JNU have agreed that standard RSA construction rather than engineered material arresting system (EMAS) construction is more appropriate for JNU. The need to expand the RSAs cannot be met off-refuge.

Use Of Refuge Lands Avoided Or Minimized

The proposed acquisition of refuge lands for the West End Wetlands Fill project seeks the minimum amount of refuge land necessary to accomplish the goal of the project.

When viewed in the context of the numerous goals, regulations, and recent legislation bearing on this project, the preferred RSA alternative (5E) minimizes the amount of refuge land needed for the project. Further, the FAA recently determined that a 600-foot-long RSA will provide adequate undershoot protection for landing aircraft. To incorporate this change, JNU will allow planes landing and departing to the east and to the west to use different runway thresholds, thereby reducing the planned extension of the runway by 400 feet and eliminating the need to acquire refuge land at the east end of the runway.

Impacts To The Refuge Must Be Fully Mitigated

JNU has worked with ADF&G and other agencies to develop a fees-in-lieu plan to mitigate impacts to refuge resources and other wetlands affected by the projects. To replace MWSGR land transferred to JNU ownership, JNU will supply the Southeast Alaska Land Trust (SEAL Trust) with funding sufficient to purchase the functional capacity unit (FCU) equivalent of refuge land taken for the projects. The amount of funding dedicated to replacing refuge land will be based on an average of 126.3 FCUs per acre of refuge and a December 2005 appraisal of wetlands values around the refuge of $30,000 per acre. To ensure the best chance of success, the portion of the mitigation plan addressing replacement of refuge land will be initially over-funded. The term "replace" means that JNU's agent, SEAL Trust, will provide fee-simple ownership of acquired lands to the State of Alaska. SEAL Trust will also receive funding to cover the administrative costs of acquiring land, and an advisory committee, on which ADF&G will have a seat, will review all parcels SEAL Trust nominates for acquisition.

The statute creating the MWSGR allows for only privately-owned land within or abutting the described refuge boundary to be eligible for acquisition and addition to the refuge. All parties to the mitigation plan understand that SEAL Trust's ability to replace refuge land will depend on the willingness of property owners to sell their land and that making newly acquired lands part of the MWSGR will require an act of the legislature. If, within a reasonable period, SEAL Trust is unable to acquire sufficient land to replace lost refuge land, funding dedicated to replacing refuge land will be eligible for use in acquisition of wetlands elsewhere.

Must Not Create A Hazardous Attraction To Waterfowl

All projects described in the FEIS were designed by JNU or FAA, and none will create a hazardous attraction to waterfowl. Further, the mitigation plan stipulates that JNU will have a seat on the advisory committee that will review parcels SEAL Trust nominates for acquisition. One role JNU will fulfill is to ensure that land acquired to replace refuge land will not create

hazardous attractions to waterfowl. However, JNU and FAA will not limit acquisition of existing wetlands near the airport to replace lost refuge land.

Based on our review of the FEIS and Section 4(f) Evaluation, we believe the projects as described meet the conditions set forth in the MWSGR Management Plan for JNU to acquire refuge land for airport expansion. ADF&G looks forward to working with JNU and FAA during the ACMP review and eventual permitting process.

Other Comments

At the May 14, 2007 agency meeting to discuss the FEIS for JNU, FAA and its consultants mentioned the need to reconfigure the existing west end MALSR lights to accommodate the planned eastward shift of the runway. FAA did not have detailed plans for how the MALSR lights would be reconfigured, but acknowledged that some MALSR fixtures would need to be moved.

The photos attached to these comments depict sections of the access route used to service the west end MALSR on the MWSGR. Wetlands have been deeply rutted, and a buried electrical cable has been exposed by erosion. Further, we can find no record of an access easement or current special areas permit allowing vehicular access. Habitat damage and operating without permits are both unacceptable situations for a State Game Refuge.

To resolve these issues, ADF&G suggests that FAA or JNU apply for appropriate easements from ADNR similar to those being sought by FAA for the planned east end MALSR lights and access road. Perhaps applications and public comment processes for both could be combined. The department also requests that FAA or JNU submit a design for building an improved at-grade road for muddier portions of the currently used east end MALSR access route. We look forward to reviewing the situation with you and working toward a mutually agreeable resolution.

Sincerely,

Thomas V. Schumacher

Tom Schumacher
ADF&G, Habitat Biologist

Enclosure

cc by e-mail:
Neil Barten ADF&G/WC
Ryan Scott, ADF&G/WC
Mark Fink, ADF&G/SF
Brady Scott, ADNR/MLW
Sherri Ellis, SWCA

Juneau International Airport

1873 Shell Simmons Drive • Juneau, Alaska 99801 • (907) 789-7821 • FAX: (907) 789-1227
Suite 200

June 27, 2007

Joseph Donohue
Natural Resource Manager
State of Alaska
Department of Natural Resources
P.O. Box 110030
Juneau, AK 99811-1030

Dear Mr. Donohue:

The Alaska Coastal Management Plan contains enforceable policies that apply statewide. This letter is to certify that Juneau International Airport has reviewed those enforceable statewide policies and for the proposed activities which are evaluated in the Final Environmental Impact Statement, the Airport will comply with the those enforceable policies.

Sincerely,

David R. Palmer
Airport Manager

JUN 15 2007

Juneau International Airport

1873 Shell Simmons Drive • Juneau, Alaska 99801 • (907) 789-7821 • FAX: (907) 789-1227
Suite 200

June 11, 2007

Patricia Sullivan
FAA Airports Division
222 W. 7th Avenue, #14
Anchorage, AK 99513-7587

Dear Ms. Sullivan:

The Juneau Coastal Management Plan no longer has enforceable policies applicable to the Juneau Runway Safety Project, they were repealed by SB 102 in 2005.

The Alaska Coastal Management Plan does have enforceable policies that apply statewide. The purpose of this letter is to certify that Juneau International Airport has reviewed those enforceable statewide policies and for the proposed activities which are evaluated in the Final Environmental Impact Statement, will comply with the those enforceable policies.

Sincerely,

David R. Palmer
Airport Manager

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APPENDIX B: PUBLIC AND AGENCY COMMENTS ON THE FINAL EIS

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APPENDIX B

PUBLIC AND AGENCY COMMENTS ON THE FINAL EIS

B.1 Reader's Guide

HOW IS THIS APPENDIX ORGANIZED?

The Response to Comments contains three main sections. The first section, Section 1, provides a brief introduction and an overall summary of the process of soliciting, receiving, and evaluating comments on the Final Environmental Impact Statement (FEIS). Section 1 also includes a table to assist the reader in finding specific comment letters, facsimiles, and e-mails (henceforth, collectively referred to as comment letters). Table B-1 contains a listing of the comment letters received on the FEIS. Each comment letter received was assigned an alphanumeric identification code. Additional information in Table B-1 includes the name of the applicable organization or individual, address, date of receipt, and a listing of substantive comments identified for each comment letter. Section 2 of this appendix contains copies of letters from Federal, State, and local agencies. Section 3 contains a summary table of all comments arranged by commentor and comment number and the Federal Aviation Administration (FAA) response to each comment. Please, note that this third section responds to substantive comments in all the letters received, not just the comment letters found in Section 2.

HOW DO I KNOW THE FAA RECEIVED MY LETTER?

All letters, email, and other comment correspondence received by the FAA during the comment period for the FEIS are listed in Table B-1. If your name or the name of your organization appears in Table B-1, your letter was received. This table can be used to find your name (or organization's name), the identification number of your letter, and the comments that received responses.

HOW DO I FIND MY COMMENT?

A specific comment letter can be located by looking up the name of the author(s) or commenting organization in Table B-1. The associated comments and responses for that letter can be found in Table B-2 of Section 3 under the author's or organization's name and by comment number.

WHAT WAS THE RESPONSE TO MY COMMENT?

FAA responses to the identified comments are grouped by the name of the commentor or commenting organization in Table B-2 of Section 3.

HOW DO I FIND WHAT COMMENTS ANOTHER INDIVIDUAL, GROUP, ORGANIZATION HAD?

Table B-1 of Section 2 lists all individuals, groups, and organizations from whom the FAA received comments. Table B-2 of Section 3 contains a summary of all substantive comments received on the FEIS. These comments, and the associated responses, are organized according to the name of the commentor or commenting organization. Simply scroll through the table to find the name of the individual, group, or organization whose comment(s) you wish to review.

B.2 Public Comment Summary

The main function of this appendix is to provide a record of public and agency comments received on the FES and the FAA's response to those comments. The following discussion explains how the comments were solicited on the FIS and how those comments were processed. A detailed list of persons, organizations, or agencies submitting comments on the FIS is presented in this section. The Reader's Guide at the front of this appendix has also been provided to assist the reader in understanding how to find their comments and the agency responses to their comments.

The processing of comments on the FES that were used in the consideration of decisions contained in the Record of Decision followed the mandates of the National Environmental Policy Act (NEPA) (1969, as amended) and a process established by the Council on Environmental Quality (CEQ) regulations, which provide that agencies must "(m)ake diligent efforts to involve the public in ... NEPA procedures" (40 CFR 1506.6(a)). Although this appendix deals primarily with the comments received on the FEIS, the reader should also be aware that public involvement preceded the release of the Draft EIS (DEIS) and continued following publication of the DEIS.

PUBLIC AND AGENCY MEETINGS

Preparation of the Record of Decision included soliciting comments from other agencies and the public regarding the content of the FEIS. This solicitation of comment included public and agency meetings. Following the release of the FEIS, the FAA held a public information meeting in Juneau, Alaska on May 14, 2007 to review the key revisions between the DEIS and the FEIS, address questions related to those changes, to provide information to facilitate review of the FEIS, and provide an opportunity for the public to provide comment on those changes and other content of the FEIS. A meeting was held with the cooperating, reviewing, and permitting agencies that same day.

COMMENT PROCEDURE

The Notice of Availability for the FAA's Juneau International Airport Final EIS was published in the Federal Register on April 23, 2007. The public comment period began at that time and extended until June 11, constituting a 48-day comment period.

Recipients of a copy of the FEIS and/or attending the public meeting were given instructions on how to provide comments and where they should be sent. They were advised that comments

should be as specific as possible in terms of adequacy of the FEIS and/or merits of the alternatives discussed.

All comment letters were copied and sent to a third-party consultant where they received an alphanumeric identification code and were placed in the project planning record. The full text of each comment letter or e-mail received from individuals or groups are held in the FAA's Juneau International Airport EIS project files in Anchorage, Alaska, and may be viewed upon request. Letters received from Federal, State, and local agencies are included in Section 2 of this appendix. Comments from each comment letter (or other form of comment) were identified and organized by commentor name. Section 3 of this appendix includes each comment or summary of comments organized by commentor and the associated response to the comment.

Consistent with NEPA regulations (40 CFR 1503.4(b)), this document focuses on substantive comments on the FEIS. Substantive comments include those that challenge the accuracy of information in the FEIS or that offer specific information that may have a bearing on the decision contained in the Record of Decision. Comments that merely express an opinion for or against the proposed action were not identified as a comment requiring a response. In cases where the comment was substantive but appeared to indicate that information in the FEIS was either misunderstood or unclear, a response was prepared to clarify the information. Resource specialists from the third-party consultant prepared draft responses to each substantive comment, which were then reviewed, refined, and approved by FAA personnel and subsequently prepared in the form found in this Record of Decision.

Table B-1 provides an index of agencies, organizations and individuals that commented on the FEIS. It also includes a unique identification number, name of commenter or organization (if applicable), date the comment letter was received by the FAA, and a list of numbered comments contained in the respective letter.

Table B-1. List of Respondents

ID #	Date Received	How received	Name	Organization	City	State	Comments
F-001	05/17/07	Letter	Steve Zimmerman	Juneau Audubon Society	Juneau	AK	F-1 through F-5
F-002	05/25/07	Email	Randal Vigil	U.S. Army Corps of Engineers, Juneau Regulatory Field Office	Juneau	AK	F-6 through F-8
F-003	05/07/07	Email	B. Sachau	N/A	Florham Park	NJ	F-9 through F-62
F-004	06/11/07	Email	Mal Linthwaite	Territorial Sportsmen, Inc.	Juneau	AK	F-63 through F-65
F-005	06/11/07	Email/Letter	Beverly Anderson	Juneau Watershed Partnership	Juneau	AK	F-66 through F-73
F-006	06/11/07	Email/Letter	Mary Irvine	N/A	Juneau	AK	F-74 through F-76
F-007	06/11/07	Email/Letter	Tom Schumacher	Alaska Department of Fish & Game	Juneau	AK	F-77 and F-78
F-008	06/111/07	Email/Letter	Christine Reichgott	U.S. Environmental Protection Agency, Region 10	Seattle	WA	F-79 and F-80

Agency Letters Received on the FEIS

F-002

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
JUNEAU REGULATORY FIELD OFFICE
8800 GLACIER HWY, SUITE 106
JUNEAU, ALASKA 99801-8079

REPLY TO ATTENTION OF:

May 25, 2007

Regulatory Division
POA-1981-320-FF

Ms. Patricia Sullivan
Federal Aviation Administration
Alaskan Region Airports Division
222 West 7th Avenue #14
Anchorage, Alaska 99513-7504

Dear Ms. Sullivan:

This is in response to the Final Environmental Impact Statement (FEIS) published on April 17, 2007, for proposed improvements to the Juneau International Airport (JNU), in Juneau, Alaska. This letter provides our comments to the aforementioned document in accordance with the Letter of Agreement between the Federal Aviation Administration (FAA) and the U.S. Army Corps of Engineers (Corps).

F-6 In order that the FAA's FEIS may be more useful to the Corps for purposes of exercising its regulatory authority, we recommend that the FAA's Record of Decision (ROD) demonstrate how the proposed work conforms with the 404(b)(1) Guidelines published for the discharge of dredged or fill material into waters of the United States (40 CFR Part 230).

F-7 Section 10 of the Rivers and Harbors Act approved March 3, 1899, (33 U.S.C. 403), prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States, the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters is unlawful unless the work has been previously authorized by the Corps. Protection of navigation in all navigable waters of the United States continues to be a primary concern of the Federal government. The District Engineer is authorized to deny permits for proposed activities when he determines that the activity will clearly interfere with navigation (33 CFR Parts 320, 322, and 325). Based upon the information provided by the FAA to the Corps and the U.S. Coast Guard during the agency meeting on May 14, 2007, the west end MALSR, associated with the FAA's Preferred Alternative 5E, for the Runway Safety Area (RSA) represents a potential interference with navigation. We recommend that the FAA's ROD evaluate the MALSR's impact to navigation in navigable waters under every RSA Alternative.

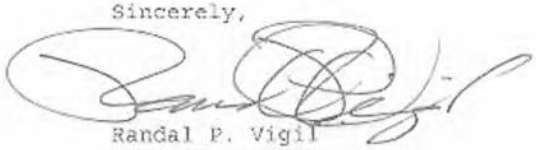
F-8 The FEIS does not evaluate the possibility of moving airport tenants to other locations on the JNU in order to accommodate expansion of the existing Snow Removal Equipment Facility (SREF) north on developed airport property between Alex Holden Drive, Cessna Drive, and Shell Simmons Drive. It may be possible to relocate lessees of airport property north of the existing SREF to an undeveloped airport tract along Berners Avenue or to the Alternative SREF-3

F-8 (cont'd)

location, which has been determined by the FAA not to be feasible for the proposed SREF, due to size limitations of the available land. The FAA's ROD should state the priority of the JNU property use. Is the SREF an essential airport function? Are tasks vital to flight operations secondary to tenant use of property? The FEIS does not clearly define what comprises the basic or necessary elements of a SREF that meet the terms of FAA regulations. Based on the information provided in the FEIS, including the conceptual plan shown in Figure 2-33, there appear to be several components to the proposed SREF that may be superfluous to the design. We recommend that the ROD assess expanding the existing SREF north under a bare bones design.

You may contact me via email at randal.p.vigil@poa02.usace.army.mil, by mail at the letterhead address, by phone at (907) 790-4490, if you have questions. For additional information about our Regulatory Program, visit our web site at www.poa.usace.army.mil/reg.

Sincerely,



Randal P. Vigil
Project Manager

Enclosures

CONCUR
CEPOA-RD
Leeds
Vigil/[illegible]4490
05/24/07/(1145)
RPV/POA-1981-320-PP FEIS Comment Letter.doc

RPV 5/24/07

5/25/07

CF:

EAST BRANCH - SOUTHEAST - Juneau Field Office

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5/25/07
SLI

F-007

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME

Division of Sport Fish

PO Box110024
Douglas, AK 99811-0024
PHONE: (907) 465-4346
FAX: (907) 465-4272

June 11, 2007

Ms. Patti Sullivan, Project Manager
FAA, Airports Division-Alaska
222 W. 7th Ave., #14
Anchorage, AK 99513-3813

Dear Ms. Sullivan:

The Alaska Department of Fish and Game (ADF&G) has reviewed the Final EIS and Section 4(f) Evaluation for the Juneau International Airport Projects for compliance with provisions in the Mendenhall Wetlands State Game Refuge (MWSGR) management plan for the City and Borough of Juneau to acquire refuge land for airport expansion. Proposed projects that will affect refuge land and resources include the relocation of the mouth of Duck Creek, west end wetlands fill as part of implementing the Wildlife Hazard Management Plan, expansion of runway safety areas (RSAs), and construction of MALSR lights with a service road extending east of the runway. Modifications to the existing MALSR lights on refuge land extending west of the runway may also be necessary. The MALSR lights project is sponsored by the Federal Aviation Administration (FAA) and requires easements, but not acquisition of refuge land. The remaining projects are sponsored by Juneau International Airport (JNU) and require acquisition of about 17 acres of refuge land.

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2. Use of refuge lands must be avoided or minimized to the maximum extent feasible;
3. All impacts to the refuge and refuge resources must be fully mitigated through restoration and/or replacement; and;
4. The expansion project cannot create a hazardous attraction to waterfowl.

The following is my understanding of how JNU and FAA have sought to meet those conditions based on project descriptions and rationales in the FEIS.

Significant Public Need That Cannot Be Met Off-Refuge
Relocating the mouth of Duck Creek and filling wetlands at the west end of the runway will eliminate attractions to waterfowl and other large birds that pose serious hazards to aircraft. This

need to enhance public safety cannot be met off-refuge without moving the airport. In addition, the statute establishing the refuge requires the ADF&G to assist JNU in eliminating hazardous attractions to waterfowl on refuge property adjacent to the runway.

Expanding RSAs to enhance public safety has been mandated by the FAA and is a condition of JNU retaining its certification to operate in its current capacity. FAA and JNU have agreed that standard RSA construction rather than engineered material arresting system (EMAS) construction is more appropriate for JNU. The need to expand the RSAs cannot be met off-refuge.

Use Of Refuge Lands Avoided Or Minimized

The proposed acquisition of refuge lands for the West End Wetlands Fill project seeks the minimum amount of refuge land necessary to accomplish the goal of the project.

When viewed in the context of the numerous goals, regulations, and recent legislation bearing on this project, the preferred RSA alternative (5E) minimizes the amount of refuge land needed for the project. Further, the FAA recently determined that a 600-foot-long RSA will provide adequate undershoot protection for landing aircraft. To incorporate this change, JNU will allow planes landing and departing to the east and to the west to use different runway thresholds, thereby reducing the planned extension of the runway by 400 feet and eliminating the need to acquire refuge land at the east end of the runway.

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Must Not Create A Hazardous Attraction To Waterfowl

All projects described in the FEIS were designed by JNU or FAA, and none will create a hazardous attraction to waterfowl. Further, the mitigation plan stipulates that JNU will have a seat on the advisory committee that will review parcels SEAL Trust nominates for acquisition. One role JNU will fulfill is to ensure that land acquired to replace refuge land will not create

hazardous attractions to waterfowl. However, JNU and FAA will not limit acquisition of existing wetlands near the airport to replace lost refuge land.

F-77

Based on our review of the FEIS and Section 4(f) Evaluation, we believe the projects as described meet the conditions set forth in the MWSGR Management Plan for JNU to acquire refuge land for airport expansion. ADF&G looks forward to working with JNU and FAA during the ACMP review and eventual permitting process.

Other Comments

F-78

At the May 14, 2007 agency meeting to discuss the FEIS for JNU, FAA and its consultants mentioned the need to reconfigure the existing west end MALSR lights to accommodate the planned eastward shift of the runway. FAA did not have detailed plans for how the MALSR lights would be reconfigured, but acknowledged that some MALSR fixtures would need to be moved.

The photos attached to these comments depict sections of the access route used to service the west end MALSR on the MWSGR. Wetlands have been deeply rutted, and a buried electrical cable has been exposed by erosion. Further, we can find no record of an access easement or current special areas permit allowing vehicular access. Habitat damage and operating without permits are both unacceptable situations for a State Game Refuge.

To resolve these issues, ADF&G suggests that FAA or JNU apply for appropriate easements from ADNR similar to those being sought by FAA for the planned east end MALSR lights and access road. Perhaps applications and public comment processes for both could be combined. The department also requests that FAA or JNU submit a design for building an improved at-grade road for muddier portions of the currently used east end MALSR access route. We look forward to reviewing the situation with you and working toward a mutually agreeable resolution.

Sincerely,

Thomas V. Schumacher

Tom Schumacher
ADF&G, Habitat Biologist

Enclosure

cc by e-mail:
Neil Barten ADF&G/WC
Ryan Scott, ADF&G/WC
Mark Fink, ADF&G/SF
Brady Scott, ADNR/MLW
Sherri Ellis, SWCA

F-008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

June 11, 2007

Reply to
Attn. of: ETPA-087

Ref: 00-043-DOT

Ms. Patricia Sullivan, Project Manager
Federal Aviation Administration
Airports Division – Alaska
222 W. 7th Avenue, #14
Anchorage, Alaska 99513-7504

Dear Ms. Sullivan:

The U.S. Environmental Protection Agency (EPA), Region 10, has reviewed the **Final Environmental Impact Statement (FEIS) and 4(f) Evaluation for the Juneau International Airport (JIA), Juneau, Alaska.** The FEIS examines the proposed actions, alternatives for each action, and identifies the preferred alternative for each action. The primary actions proposed by the FAA in the FEIS include modifications to the runway safety area (RSA), snow removal equipment and maintenance facilities, fuel farm access, aircraft parking and storage facilities, and the wildlife hazard management program.

In our letter dated July 7, 2005, we rated the Draft EIS, EO-2 (Environmental Objections-Insufficient Information). This rating was based largely on the direct impacts to high/very high functioning estuarine wetlands, wildlife habitat, and essential fish habitat, as well as impacts to Duck and Jordan Creeks, which are both Clean Water Act (CWA) §303(d) listed waterbodies, identified in the document.

Our review of the FEIS indicates that the FAA was responsive to our comments on the Draft EIS. We are pleased that new alternatives were developed, and others were modified (in particular for the RSA), using comments received from JIA, EPA, other agencies, and the public. We also acknowledge and commend the FAA for the considerable effort it undertook to carefully weigh public and agency comment following public review of the DEIS, respond with additional analysis, and revise the proposed actions in the FEIS.

F-79

EPA acknowledges the improvements that have been made and supports the identification of the preferred alternative including RSA-5E. According to the FEIS, the rationale for selecting the preferred alternative is that it meets the requirements of P.L.109-443. We would agree that FAA has satisfied the requirements of P.L.109-443 by identifying RSA-5E as the preferred alternative in the final EIS. However, compliance with P.L. 109-443 does not supersede the obligation to comply with other applicable laws such as the Clean Water Act 404(b)(1) when making a final decision about alternative implementation in the ROD. The

F-79 (cont'd)

NEPA regulations draw a clear distinction between the *preferred alternative*, which agencies shall identify in the FEIS [40 CFR § 1502.14(e)], and the *decision*, which agencies shall state in the ROD [40 CFR § 1505.2(a)]. Although agencies often decide to implement the preferred alternative, they are not required to do so. Agencies may (and sometimes do) decide to implement an alternative other than the preferred alternative. In this case, P.L. 109-443 directs FAA as to which RSA alternative to "select as the *preferred alternative*" (emphasis added), but does not specifically require implementation of the preferred alternative. The decision in the ROD should be made according to processes that comply with all relevant laws, which in this case may well lead to the same conclusion. In order to receive a 404 permit, the alternative must also meet Clean Water Act requirements. Therefore we strongly suggest that the rationale for selecting an alternative in the Record of Decision (ROD) include a discussion showing that the selected alternative complies with the 404(b)(1) Guidelines.

F-80

EPA supports the development of a compensatory mitigation plan. However, since the effectiveness of the mitigation is entirely dependent on the details and implementation of that plan, EPA encourages FAA to include specific information in the ROD, including the mitigation sequence and firm commitments for ratios and amounts.

A summary of our comments will be published in the Federal Register. Thank you for the opportunity to work collaboratively on this project throughout the development of the EIS. If you have questions or comments concerning our review, please contact Jennifer Curtis at (907) 271-6324, Chris Meade at (907) 586-7622 or me at (206) 553-1601.

Sincerely,

//s//

Christine B. Reichgott, Manager
NEPA Review Unit

Cc: Dave Palmer, Manager, JIA
Chris Meade, AOO/J
Jennifer Curtis, AOO/A

B.3 Public Comment and Response Summary

This section contains a summary table (Table B-2) of all substantive comments received on the FEIS and the FAA responses to those comments. The summary table is organized by the individual or organizational name of the commentor. All comments received from a given individual or organization are listed under the commentor name, even if a given commentor provided comments on more than one occasion or via more than one method. Unless otherwise noted, references within the Response column of Table B-2 are to sections of the FEIS.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
Juneau Audubon Society		
F-1	JAS still contends that there is little need for the runway safety areas and better alternatives to construct them could have been chosen in Congress had not muted those opportunities.	Federal Aviation Regulation, Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers, requires runway safety areas RSAs) to meet FAA standards to the extent practicable. FAA has determined that it is practicable to meet RSA standards at Juneau.
F-2	We are pleased to note that the proposed actions do not include cutting and removal of all trees in the float pond woodlands.	Thank you for your comment.
F-3	We are concerned that the action to "selectively thin trees and clear understory: is still an option that might be considered for the floatplane pond trees under the adaptive hazard management approach. We note that in Table ES-7 on page ES-46 the thinning and brush clearly option (WH-1I as described on page 2-226) is listed as the preferred alternative. We were told that this is a mistake and the preferred is actually WH-2I).	The listing of action WH-1I in Table ES-7 on page ES-71 of the stand-alone Executive Summary, Table ES-7 on page ES-46 of the Executive Summary in Part I of the FEIS, and Table 2-25 on page 2-286 of Chapter 2 in Part I of the FEIS all incorrectly list action WH-1I as part of the preferred wildlife hazard management alternative. These tables should have listed action WH-2I instead of WH-1I. Selective thinning of trees and clearing of understory in the floatplane pond woodlands is not part of the preferred and selected alternative for wildlife hazard management identified in the Record of Decision. FAA has issued an errata sheet for the FEIS acknowledging and correcting this error.
F-4	We are pleased that the preferred alternatives still support the establishment of a Wildlife Hazards Working Group (WHWG).	Thank you for your comment.
F-5	Although it is laudable to try to include a diverse set of interests on the Wildlife Hazards Working Group (WHWG), the real emphasis should be on local wildlife and ecology experts.	FAA does recommend that experts in local wildlife and ecology be included as members of the WHWG, however, FAA believes that it is appropriate to include individuals representing other interests related to wildlife management in the area of the Airport.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
U.S. Army Corps of Engineers		
F-6	In order that the FEIS may be more useful to the Corps for purposes of exercising its regulatory authority, we recommend that the FAA's Record of Decision demonstrate how the proposed work conforms with the 404(b)(1) Guidelines published for the discharge of dredged or fill material into waters of the United States (40 CFR 230).	The Record of Decision will include information related to the conformance of the preferred alternatives to the 404(b)(1) Guidelines.
F-7	We recommend that the FAA's Record of Decision evaluate the impact of the Runway 08 MALSR's relocation as part of all runway safety area alternatives on navigation in navigable waters. Section 10 of the Rivers and Harbors Act (33 U.S.C. 403) prohibits unauthorized obstruction or alteration of any navigable water of the United States.	Information about the potential impact to navigation from the relocation of the Runway 08 MALSR system associated with the preferred runway safety area alternative, RSA-5E, will be included in the Record of Decision.
F-8	The FEIS does not evaluate the possibility of moving airport tenants to other locations on the JNU in order to accommodate expansion of the existing Snow Removal Equipment Facility (SREF) north on developed airport property between Alex Holden Drive, Cessna Drive, and Shell Simmons Drive. It may be possible to relocate lessess north of the existing SREF to an undeveloped airport tract along Berners Avenue or to the Alternative SREF-3 location, which has been determined by the FAA not to be feasible for the proposed SREF, due to size limitations of the available land. The FAA's Record of Decision (ROD) hould state the priority of the JNU property use. Is the SREF an essential airport function? Are tasks vital to flight operations secondary to tenant use of property? The FEIS does not clearly define what comprises the basic or necessary elements of the SREF that meet the terms of FAA regulations. Based on the FEIS, including the conceptual plan in Figure 2-33,	A thorough review of the Sponsor's proposal for construction of a SREF was performed independently by the FAA. An effort was made to assure that impacts were minimized by removing duplicate use areas, removing areas to temporarily park trailers, correct area calculation errors, and ensure that all space needs were justified. The FAA acknowledges that some wetlands and habitat would be impacted by the preferred alternative; however, this site has fewer environmental impacts than most other sites evaluated. This site is the most operationally efficient location when considered in the context of the development of all needed airport facilities, and FAA believes it represents the least environmentally damaging practicable alternative. FAA's approach to this issue is consistent with FAA Advisory Circulars 150/5200-30A, 150/5200-20, and 150/5200-18.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	there appear to be several components to the proposed SREF that may be superfluous to the design. We recommend the ROD assess expanding the existing SREF north under a bare bones design.	
B. Sachau		
F-9	Page ES-8: The estimate of 50% growth in corporate hangars is plucked out of thin air and has no relationship to reality. Spending tax dollars on this hypothetical is a money grab by the aviation industry. If this airport is so profitable, take all federal tax dollars out of this project and let private investment do it. Its tough that aircraft have to park in obscure "places" those poor rich guy plane owners need to walk a little – TOUGH, TOUGH, TOUGH. Their 2ND complaint is they are "cramped". Why are general taxpayers in America being taxed to provide land for rich aircraft owners to park their planes? The average American is not rich enough to own a plane so why does he have to pay for rich plane owners to park their planes? If commercial profiteers want large hangers for profits, get the money from the ones who use the hangars.	The DEIS and FEIS provide independent, objective projections for the increased need for corporate hangar space based upon current demand and accepted aviation forecasting techniques. The effort documented a shortage of hangar space. Please, see the footnotes to Table ES-1 on page ES-8 for the source of information used in projecting hangar demand. At least a portion of the money invested in new facilities is returned through fees imposed by airport tenants (for lease of parking spaces, hangar facilities, etc.). Additionally, funds obtained through the Airport Improvement Program, to which JNU will be applying for a grant, are derived from user fees that comprise the aviation trust fund.
F-10	Page ES-9: Means decimation of birds, mammals and I am dead set against this increase which will mean the death and destruction to let commercial profiteers make more money and also bring on global warming faster. Aviation has awful effects which exacerbate global warming. They have no conception of helping the fight against global warming or cutting their emissions which exacerbate global warming. This plan is an example.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-11	Page ES-36: The fuel pipeline is an environmental nightmare for an area known to be subject to severe earthquakes. This plan is not acceptable at all.	The fuel farm pipeline alternative was not selected as the FAA's preferred alternative. Please, see section 2.13.2.5 for a description of the preferred Fuel Farm Access alternative.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
F-12	Page ES-41: Nobody speaks for the lives of wildlife and birds - so they are wiped out by government agencies working for profiteers. No federal agency truly protects wildlife or birds - NONE.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-13	Page ES-43: The building plans do not seem able to withstand the changes of global warming so all tax dollars used for this project will be wasted. The Corps of Engineers - think about their work in New Orleans - does anybody truly want their services anymore???	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-14	Page ES-53: The increased wildlife control is governmentalese for increased wildlife killing-- a horrendous idea.	Increased wildlife control primarily consists of increased hazing and vegetation management.
F-15	Page ES-57: God had better protect the eagles from the death squad at Juneau Airport. The Clean Air Act is assaulted by this construction and increased flights at this site yet the writer writes a lie and says no effect. To let the aviation emissions go undetected is horrendous. The Noise Abatement Act is being violated because the noise is increasing with this plan, not decreasing.	Long-term air quality emissions would not increase as a result of the preferred alternatives. The preferred alternatives themselves do not provide for increased numbers of flights or changes in types of aircraft able to use the Airport. Increases in flight numbers are expected to occur regardless of whether the preferred alternatives are implemented. Short-term air quality impacts from construction of the preferred alternatives would be within established state and federal standards. Overall noise levels are not increasing as a result of the preferred alternatives. The existing noise level would remain the same, as the preferred alternatives do not increase numbers of flights or change the size of aircraft able to use the Airport. The locations experiencing specific noise levels would change as the runway threshold shifts to the east under the preferred RSA alternative, RSA-5E, such that some specific locations west of the Airport will experience slightly lower noise levels and other specific locations east of the Airport will experience slightly higher noise levels than present.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
F-16	Page ES-58: Children in schools near this airport will have trouble learning - this result has been documented by research. There will definitely be a change in risk to the health and safety of children as a result of this airport expansion. Lies, lies lies are being written in this document. People are getting lung cancer who live near airports. Teterboro Airport has done a research study on this.	Analyses were conducted for noise sensitive locations near the Airport, including schools, parks, and wildlife viewing and recreation areas. None of the noise sensitive receptors in the vicinity of the Airport would experience an increase in noise as a result of the preferred alternatives. Please, see sections 4.3.2, 4.4.2, 4.5.2, 4.6.2, 4.7.2, and 4.8.2 of the FEIS for the analysis of impacts to the human environment and compatible land use for each proposed action and its alternatives. Please, see the response to comment F-15 regarding air quality.
F-17	Page ES-59:- I would like to see a copy of the "special area permit for alteration of wildlife habitat". I am disgusted at this assault on wildlife. All of these plans mean murder of wildlife and birds. If this area is a refuge, ownership of ADNR DMLW lands are NOT a best use for this airport.	A copy of the permit is available on the Airport's website: www.juneau.org/airport/.
F-18	Page ES-60: Parks around the airport will be decimated by this plan. There is no minimization or compensation for any impacts from this plan at all.	The commentor does not provide information about the types of impacts that parks near the Airport would experience. As such, the FAA is unable to respond to this comment.
F-19	Page ES-61: FAA finding this project is consistent with destruction of a refuge area is out of order. FAA approves all spending of general tax dollars for local profiteers with no view as to whether it makes sense or not or is a prudent use of tax dollars. FAA is on a runaway course working only for aviation profiteers and scamming the rest of the country. THIS IS NOT JUST A LOCAL MATTER AT ALL. FAA's failure to get the citizens of this nation involved in the spending of their tax dollars is a fatal flaw. I've been to FAA meetings. They are carefully scripted NOT to give the public any say at all. They allow you to write. They do not allow the citizens to openly speak ever. NOT EVER. A long time ago when the public was allowed to speak, they gave FAA an earful and now the script is that the public gets	The FAA finds that acquisition of a portion of Refuge property is consistent with the Refuge management plan and the legislation establishing the Refuge, which contains a specific provision allowing Airport use of Refuge property if necessary. The Refuge management plan establishes criteria for the management of the Refuge, including goals and objectives. The preferred alternatives incorporate measures that meet these goals and objectives. The Alaska Department of Fish and Game (ADF&G), which manages the Refuge, has conducted its own analysis of the proposed Airport actions on the Refuge. ADF&G also finds that the projects as described in the FEIS are consistent with the Refuge management plan conditions for acquisition of Refuge lands for the Airport to address aviation needs.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	no chance to speak together as a group. The meetings by FAA are carefully crafted to get the results FAA wants. It is disgusting. The FAA meetings are rehearsed to call out the profiteers and shut the public up. Those impacted with the noise, danger and pollution are shut up and shut out. So this is a lie.	
F-20	Page ES-74: I oppose any land impingement on this refuge.	The FAA acknowledges the commentor's objection to use of Refuge land for Airport and other projects.
F-21	Page 1-17: Total operations reveal no need at this time for this expansion or work or use of tax dollars.	The proposed actions and alternatives preferred by the FAA are not based on historic aviation activity or projected operations. The purpose of the proposed actions is to enhance safety and improve and increase facilities to efficiently meet current and reasonably foreseeable needs.
F-22	Page 1-20: Alaska Airlines should be constrained from buying any more 737-900's. Why the taxpayers should be conscripted to pay for all of this plan because this airline bought one plane is beyond me, as well as every other taxpayer.	FAA does not have the authority to direct the specific aircraft type or model used by private air carriers.
F-23	Page 1-37: The problem is the airport is in the wrong place. The airport is the problem, especially its desire to grow in an obviously impractical place. It wants to be the largest in the world on the American taxpayers' wallet attack. The birds should stay - they need the water and food. This airport should stay the size it is. Any growth should come at another airport site on the aviation industry wallet. Selection of this airport site was not made wisely - it just grew like topsy. No airport should destroy its surrounding area.	Construction of a new airport would most likely result in far greater environmental impacts than those resulting from the preferred alternatives in the FEIS.
F-24	Page 1-51: Any need for aviation can be met at other locations and other airports. The need does NOT have to be here.	There are no other airports in the immediate vicinity of Juneau and no other direct commercial air access to this capital city.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
F-25	Page 1-54: The "assistance of wildlife services" in dealing with wildlife hazards sounds so nice and peaceful - yet the assistance is shooting, poisoning and destruction of ALL birds or wildlife by aphis. It is a disgustingly obscene scenario and the deception of this writing is purposeful and it is lying.	Please, see section 2.13.2.6 for information about the specific activities comprising the preferred alternative for wildlife hazard management.
F-26	Page 1-67: Shows numerous reasons why this expansion plan should not happen.	Please, see section 1.4, Purpose and Need, for a description of the need for and the purpose of the proposed actions.
F-27	Page 1-68: A seafood processing plant is 5 miles away and draws birds. This site is no place for this airport to grow or for the seafood processing plant to be sited.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-28	Page 1-89: Hunting makes birds fly away and is one reason for bird strikes. In addition, no airport should want gun wacko psychopaths shooting near planes.	Please, see section 2.13.2.6, page 2-295 of the FEIS in which the FAA recommends that hunting on Airport property be discontinued.
F-29	Page 1-72: Tree cutting by Jordan Creek shows airports insensitivity to its neighbors. It shows airports crass overpowering and lack of consideration for its neighbors or for the environment. It shows anti-environmental attitude. This need for actions is based on profiteers desire for bigger profits, bigger everything. This is not at all based on existing uses.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-30	Page 1-73: There is not enough space to support jet carrier operations at this airport. Therefore, this site is unacceptable and no expansion should take place. The airport is heavy handed re: whether analysis of bird strikes should be made. Such an analysis should be made. Airport is far too heavy handed.	Please, see the response to Comment No. 21. An analysis of bird strikes was made for the Wildlife Hazard Management Plan, which is a proposed action in the FEIS. Please, see section 1.4.4.1 regarding bird strike data for the Airport.
F-31	Page 1-74: I agree with the comment that bird and mammal surveys need to be taken. I do not trust the Army Corps of Engineers after seeing New Orleans being flooded by their lack of sound construction.	Surveys of bird and mammal populations within the Airport study area were conducted as part of the EIS. Please, see section 3.10 of the FEIS for information on wildlife identified in the study area.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
F-32	Page 1-75: Light pollution - airport stifles complaints from residents on light pollution. They say nothing is reported. Far too often airports purposefully LOSE complaints. Airports prefer not to keep records of complaints.	No comments regarding light pollution were received by the FAA from the public during the review of the Draft EIS or during public scoping.
F-33	Page 2-97: Lethal control - KILLING birds and mammals is what airports do. As this report shows airport tries to keep this a secret from the public, who are outraged over wildlife murder.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-34	Page 2-98: Wildlife Service aphis always specializes in wildlife killing - wildlife murder. I cannot believe hunting on an airfield is safe when I read the endless report I get every day on one hunter shooting somebody every single day. I believe this is extremely negligent to have any hunting near an airport.	Please, see the response to Comment No. F-28.
F-35	Page 2-213: Installing pipelines in a volcanic area is a very huge potential hazard. The example of oil pipelines in Alaska not being maintained for l7 years is also indicative of this being a very, very unsound idea.	Please, see the response to Comment No. F-11.
F-36	Page 2-226: I oppose all of the trees being cut. The erosion when you lose a tree, the temperature increase when you lose a tree, the envirotranspiration rate changes - you want to save all trees.	Please, see section 2.13.2.6 in which the preferred alternative for wildlife hazard management is described. Cutting or selectively thinning of the Float Plane Pond woodlands is not part of the preferred alternative.
F-37	Page 2-232: I oppose a full time wildlife hazard control officer. I am sick of all the killing of God's creature by airports. What is hazardous is this airport - that is the biggest hazard of all - the airport.	The FAA acknowledges the commentor's objection to the appointment of a full time wildlife hazard control officer at the Airport.
F-38	Page 3-5: The way FAA measured noise is perverted and strange. A noise can be 85 decibel but FAA requires averaging that over 24 hours - how absolutely stupid to tell how loud	The method used to assess noise for the FEIS meets acceptable government standards and practice.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	something is and how disturbing it is by whether it is averaged over 24 hours.	
F-39	Page 3-6: The loss of sleep is extremely serious and lead to ill health, serious physical health problems, lack of attention and possible death. It cannot be minimized by the dismissal on this page when it is a serious health issue. Lung cancer, heart attacks, strokes, pneumonia, allergies, asthma - all are a result of aviation increase.	This comment contains statements of opinion and factual assertions that the FAA is unable to verify. As a result, the FAA is not able to provide a meaningful response.
F-40	Page 3-110: The fact that Juneau Airport has spent NOTHING to collect de-icing toxic chemicals is obnoxiouis and obscene. The airport owners should be in jail for this failure to take these steps.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-41	Page 3-112: The polluting nature of this airport is evident and it is scandalous. This airport has spent nothing on maintenance. They use the river as their sewer. They let deicing chemicals pollute the area. Why are no TMDL's set for the Mendenhall River?	JNU is in the process of updating their Stormwater Pollution and Prevention Plan (SWPPP) to account for changes in runoff that will occur as a result of the selected alternatives. Please, see section 2.11.7 of the FEIS for information about stormwater management at the Airport. The Alaska Department of Environmental Conservation establishes TMDLs for waterways in Alaska. The Mendenhall River is not an Alaska 303(d) impaired water body, which is the criterion for establishing TMDLs.
F-42	This plan should be denied.	The FAA acknowledges the commentor's objection to the approval of actions identified in the FEIS.
F-43	Page 4-4: The date of 2000 was used for noise statistics yet the reason for this upgrading is to allow more and bigger planes, which will bring noise well above 2000 impacts. Such an impact is negative for this area - extremely negative and the way it is measured seems strange and deceptive as well.	The proposed actions are not designed to accommodate more or larger aircraft. Rather, they are intended to improve the operational safety and efficiency of existing Airport uses and bring the Airport into compliance with FAA’s national safety standards.

Table B-2. Summary of FEIS comments and FAA responses

#	Comment Summary/Excerpt	Response
F-44	Page 4-5: The future dates this plan is (sic) for waffle from 2015 to 2020 - depending on how the writer wants to influence the reader. This is biased, deceptive, writing since it compares apples to oranges. I think the results of "noise analysis" are doctored and biased. When profiteers seek to make money for themselves and harm others thereby, they always paint that rosy picture (which never turns out to be true).	The future date used for noise analysis throughout Chapter 4 and in Appendix C of the FEIS is 2015.
F-45	Page 4-12: No fine particulate matter studies were done, based on a specious reason, beneficial only to the profiteers. Was the "average" day in July or December? We are not told. Fine particulate matter of course has been measured from aviation activities and it is horrendously injurious to the public's health. I do not think personal communications of Ralph Iovanelli should be used as a reference since the public has no access to this kind of document. Fine particulate matter is not smoke. Fine particulate matter travels thousands of miles and causes lung cancer, heart attacks, strokes, pneumonia, allergies and asthma and death and injury and big hospital bills and hospice bills.	The "average" day represents an average across all days of the year. Using PM10 emissions as an indicator of PM2.5 emissions is a practice accepted by the EPA and results in conservative estimates of PM2.5 emissions. The communication from Mr. Iovanelli was in reference specifically to the JNU EIS and included his concurrence for using this method to estimate PM2.5 emissions for the proposed Airport actions.
F-46	Page 4-16: 500-year floods are happening every 8 years here in New Jersey and I suspect worldwide now. I wonder why it is still caused (sic) 500-year floods when global warming has emphasized all weather patterns and that is what has to be planned for. Are these areas truly prepared for these extensive floods every 8 years?	This comment consists of a statement of opinion and factual assertions that the FAA is unable to verify. As such, the FAA is not able to provide a meaningful response.
F-47	Page 4-20: I always oppose all invasions of wetlands which are crucial to all life on earth. This is such a plan.	The FAA acknowledges the commentor's objection to impacts on wetlands from the proposed actions.
F-48	Page 4-36: In view of carbon emissions from airplane travel, I do not believe visits to Alaska will rise as much as these projections	The air travel forecasts are based on nationally accepted forecasting methods. The effects of climate change on air travel are not well

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	show. The effects of climate rampage may impact travel more than these projections take account of. They may make the whole project not necessary at all. To claim more flights are coming in and noise won't go up is also an oxymoron and a lie. Here in New Jersey we live with increasing number of flights and believe me, the noise goes up!!!	understood at this time, and to use such information in projecting travel demand would be speculative. The commentor has confused air travel forecasts with the noise analysis for projects specifically considered in the FEIS. Actions assessed in the FEIS do not in themselves increase the number of flights at the Airport; the number of aircraft using the Airport is expected to increase, regardless of whether or not any of the proposed actions are implemented.
F-49	Page 4-65: The noise impact and the closeness of the refuge is a very severe assault on this refuge. This plan should be denied because of its assault on the refuge.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response. However, the FAA acknowledges the commentor's objection to any noise impact on the Refuge.
F-50	Page 4-138: There are ONLY negative effects on wildlife from this plan. It is all negative for them.	This comment consists of a statement of opinion and factual assertions that the FAA is unable to verify. As such, the FAA is not able to provide a meaningful response.
F-51	Page 4-280: 75% increase in impervious coverage is an invitation to disaster. The loss of 33l acres of floodplain, tidal storage volume is also an invitation to disaster. The impact to estuarine areas is far too severe - these are all excellent reasons to deny this plan.	This comment consists of a statement of opinion and factual assertions that the FAA is unable to verify. As such, the FAA is not able to provide a meaningful response.
F-52	Page 5-34: The impacts to fish stocks and marine life and birds that rely on that fish are major and severe and an excellent reason to deny this building. The taxpayers certainly don't want to pay the billions that will be required for this since that is how this building is being planned - on the backs of national taxpayers. Aviation should be looked to finance this from their profits, not general taxpayers many of which never travel by air.	This comment consists of a statement of opinion and factual assertions that the FAA is unable to verify. As such, the FAA is not able to provide a meaningful response.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
F-53	Page b-28 and preceding and following: Trap and "remove" - Murdered? Killed? Removed to where? There is more deception going on here in the writing of this report. If the animal is killed, then it should be so stated, not deceptive words like this used that attempt to fool the public. Airports routinely use only shooting and killing all life on their sites. There is endless deceptive writing in this document. I also don't believe the answers you got from other airports were complete or honest.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-54	Page M-16 - comment 11: There is no need for this plan. The runway is already long enough. Sounds right to me.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-55	Page m-20: The advocacy of the FAA is wrong. I agree with comment 204 there is a conflict of interest by FAA in this plan. I also agree with resolution (sic) 2005-01. This plan is unacceptable.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-56	I agree with the following: Page m-22, comment 212 Page m-23, comment 213 Page m-24, comments 214 and 215 Page m-28, comment 235 Page m-32, comment 246 Page m-90, comment 37 Page m-103, comment 397 Page m-105, comment 402 Page m-106, comments 405 and 406	Please, see the responses to the comments you've cited.
F-57	I do not agree with the following: Page m-37 comments 266 and 267 Page m-52, comment 320	Please, see the responses to the comments you've cited.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	Page m-8 (sic), comment 151	
F-58	Page m-43: Comment 286 is sound construction advice.	Please, see the response to Comment 286.
F-59	Page m-62: Comment 49, the deer fence needs to be 12 ft high	This comment consists of a statement of opinion and factual assertions that the FAA is unable to verify. As such, the FAA is not able to provide a meaningful response.
F-60	Page m-93, comment 170: We have put humans ahead of the birds for the last 500 years. There are few birds left, a clear sign of ecological disaster. To be so uninformed and to comment is atrocious.	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-61	Page m-94, comment 59: The burden on general taxpayers of paying ten million dollars every ten years for this airport is unreasonable and wasteful. Use of materials that do not stand up is wasteful. I think we need to tax aviation which is causing this out of control spending to pay these costs	This comment consists of a statement of opinion for which the FAA is unable to provide a meaningful response.
F-62	Page x-6: 1992 report of fic (sic) on noise is very obsolete - this kind of use of old material severely causes misplanning.	This comment consists of a statement of opinion and factual assertions that the FAA is unable to verify. As such, the FAA is not able to provide a meaningful response.
Territorial Sportsmen		
F-63	Section 4(f) analysis of preferred alternatives for the Runway Safety Area, Navigation Lighting System, and Wildlife Hazard Management Plan are deficient in that they do not address compensatory mitigation for direct takes of MWSGR lands. In fact, the analysis does not even reference the Mitigation Plan contained in Section 2.12.3 of the FEIS, which partially addresses the issue.	Please, see sections 4.3.13, 4.4.13, and 4.8.13 of the FEIS for the detailed analysis of potential impacts to Section 4(f) resources. The mitigation plan discussed in section 2.12.3 of the FEIS is intended to be comprehensive and address the overall combined impacts of the preferred alternatives rather than focusing on each specific impact. As noted in several places in the FEIS, including section 2.11, measures to minimize impacts to the Refuge were incorporated into preferred alternatives. For example, active relocation of East Runway Slough will reduce the overall impact to the Refuge from the preferred runway

Table B-2. Summary of FEIS comments and FAA responses

#	Comment Summary/Excerpt	Response
		safety area alternative by maintaining hydrologic connectivity between the areas north and south of the runway. Where avoidance or minimization are not possible, the overall compensatory mitigation plan accounts for the combined impacts to resources such as wetlands from all actions, including the runway safety area, the navigational aids, and the wildlife hazard management plan. The sections of the FEIS discussing Section 4(f) must be taken in the context of the entire FEIS and are not intended to be stand-alone sections. The ADF&G, which oversees management of the Refuge, has stated that the elements of the Compensatory Mitigation Plan, as developed in consultation with the ADF&G and other regulatory agencies, "meet[s] conditions set forth in the MWSGR Management Plan", including the requirement that all impacts to Refuge functions and values be fully mitigated (Letter from T. Schumacher, ADF&G, to P. Sullivan, FAA, June 11, 2007).
F-64	Compensatory mitigation proposed in the JNU 2006 Compensatory Mitigation Plan, as presented in Section 2.12.3, would not compensate for the take of land from the MWSGR because it does not contain a mechanism whereby the land acquired by SEAL Trust would be transferred to the refuge once acquired. This is vitally important to us because lands within the MWSGR can be used for waterfowl hunting, while those lands not within the boundaries of the MWSGR cannot legally be used for hunting. Furthermore, if the acquired land is not incorporated into the refuge, it legally does nothing to compensate for taking of land from the refuge.	The final mitigation plan is being developed in conjunction with project permitting. The specific disposition and management jurisdiction over any lands acquired for mitigation purposes will be addressed in the final mitigation plan. The mitigation plan calls for a tiered approach to acquisition of lands by SEAL Trust. This approach identifies the acquisition of accreted lands to be added to the Refuge as the highest priority. Additional funding would be used to acquire lands or carry out mitigation projects recommended by the SEAL Trust advisory committee.
F-65	The FEIS seems to be intentionally vague on the issue of taking of lands from the MWSGR. For instance, the Table 2-26, “Summary of Combined Impacts of all Actions Comprising FAA’s	The Record of Decision summarizes the combined use of Refuge lands for all preferred actions. Information about the impacts on Refuge lands was provided for each action and its alternatives in the summary

Table B-2. Summary of FEIS comments and FAA responses

#	Comment Summary/Excerpt	Response
	Preferred Alternatives", does not quantify the take of land from the refuge. In addition, the section in chapter 4 describing the impacts to the refuge resulting from construction of the MALSR lighting system is vague as to whether this action would result in a take, or an easement. Surely after all this analysis and time, someone knows this.	of impact tables in Chapter 2 of the FEIS. Please, see Tables 2-13, 2-14, 2-16, 2-20, 2-21, and 2-23. Use of Refuge land for the Runway 26 MALSR system could be accomplished through either direct acquisition of land from the Refuge or through an easement. The Alaska Department of Fish and Game (ADF&G) and Department of Natural Resources, Division of Mining, Land and Water (ADNR-DMLW) have indicated that an easement may be the most appropriate instrument for accommodating the installation of the Runway 26 MALSR on Refuge lands. The ADF&G and ADNR-DMLW will review the permit application submitted by the Airport for the selected MALSR alternative (NAV-2B). They will conduct an independent evaluation of the consistency of the project and its minimization and mitigation measures with the Refuge Management Plan and will hold a public hearing to disclose their findings and solicit public input prior to issuing a formal finding as to whether use of Refuge lands for Airport purposes is in the best public interest. Please, also see section 2.13.2.7, pages 2-300 and 2-301, which provide information on the statutes governing leasing, permitting, and conveyance of state-owned lands.
Juneau Watershed Partnership		
F-66	The Juneau Watershed Partnership prefers alternatives in the EIS that support the least amount of impact to fisheries habitat and water quality in the Mendenhall Watershed, while maintaining the development of a safe and viable Airport for the Juneau community.	The FAA acknowledges the Juneau Watershed Partnership's preference for alternatives that result in the least amount of impact to fisheries habitat and water quality within the Mendenhall Watershed.
F-67	Section ES.2.3.3 FUEL FARM ACCESS The Partnership would like to recommend that in the future, your fuel farm should be moved away from the banks of Duck Creek and the adjacent residential area.	Relocation of the fuel farm is not an action under consideration in the EIS.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
F-68	Section ES.4.1.3 JORDAN CREEK CULVERT and Section ES.4.1.4.1 BOTTOMLESS ARCH CONCRETE CULVERTS FOR EAST RUNWAY SLOUGH In regards to new culvert construction within the project scope, the Partnership recommends the use of bottomless arch culverts whenever feasible. Bottomless arch culverts are the best choice for maintaining fish passage, fisheries habitat and stream flow. We also recommend that bottomless arch culverts be used when replacing culverts at the airport in the future.	The FAA has included the use of bottomless arch or equivalent box culverts wherever practicable to facilitate fish passage and maintain fish habitat. For example, see sections 2.11.3 and 2.11.4.1 of the FEIS, which identify bottomless arch culverts as appropriate structures for use on Jordan Creek and the relocated East Runway Slough crossing. Since publication of the FEIS, the FAA has determined, in consultation with the Airport and the regulatory agencies, including NMFS, that squash culverts designed to maintain the same flows and streambed conditions as bottomless arch culverts would also be appropriate structures for use as part of the selected alternatives.
F-69	Section ES.4.1.5- MALSR ACCESS ROAD Although an at-grade road to access the MALSR is in the preferred Alternatives RSA-5E and NAV-2B, we continue to recommend that the Airport use an all-terrain vehicle (ATV) road instead of constructing a permanent access road. The use of an ATV would be more cost-effective, reduce maintenance costs, provide quicker access in inclement weather, and reduce wetland loss, drainage changes and other environmental impacts.	ATVs would not provide the payload capacity needed for maintenance of the light system. The at-grade road would be designed to minimize impacts to wetlands, hydrology and habitat. The road would be constructed of a geotextile material that allows for vegetation growth through the road bed, which provides for re-establishment of vegetation disturbed during construction.
F-70	Section ES.4.1.7.1 STORMWATER POLLUTION PREVENTION PLAN In regards to your deicing operations, the Partnership would like to recommend that you preserve existing stormwater run off areas to provide natural filtration for your deicing solution.	Please, see section 2.11.7 of the FEIS for information about stormwater management at the Airport. This section outlines the measures to which the Airport has committed as part of their current and future updates to their Stormwater Pollution and Prevention Plan (SWPPP). FAA has advised the Airport that a revised Stormwater Management Plan should be developed prior to the initiation of construction for selected alternatives and as part of the permitting requirements.
F-71	Section 2.13.2.1 RUNWAY SAFTEY AREA	FAA has committed to a 1:1 or steeper side slope to reduce the fill footprint south of the Runway. Gabion walls were identified as one type

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	It is clear that Alternative RSA-5E is preferred: however, it is unclear whether details for this alternative include mandatory use of Gabions. However, discussion in section 2.11.2 and Figure 2-50 seem to imply Gabions will be included as part of the preferred alternative. The Partnership feels this is a poor short term solution that will lead to problems in the future because Gabion walls are prone to failure, which results in impacts to wetlands in the immediate vicinity and structural integrity problems for the supported feature—in this case, the RSA. A better solution is to provide a steep (1.5 to 1) slope of effective filtration to protect the greater wetlands which are adjacent to the project area.	of measure that could be used to further reduce the footprint of the RSA. FAA agrees that it is not desirable to construct an unstable fill slope. Additional alternatives to maintain the steeper stable fill slope will be evaluated during design. Please note, some form of slope stabilization will be necessary in the vicinity of the relocated East Runway Slough in order to ensure the new channel does not erode the toe slopes of the RSA. However, at least some portion of the RSA end slope cannot include a gabion wall, as access to the MALSR maintenance road from the end of the RSA is necessary.
F-72	The Juneau Watershed Partnership has long been concerned about the health of Duck Creek, as our Partnership evolved from the long standing 'Duck Creek Advisory Group'. The Partnership has been monitoring Duck Creek since 2003, but as of 2007 we have stopped the monitoring activities in part because we feel that at this point there are other waterways in Juneau that have more opportunities for stream and fish habitat improvements.	The conceptual design for relocation of the lower reach of Duck Creek is consistent with the management objectives outlined in the Duck Creek Restoration Plan.
F-73	The Partnership believes that the 5-year monitoring project for Duck Creek is not a valuable mitigation project for Juneau, and the monies currently allocated to this project should be reassigned to more meaningful and fiscally responsible projects, such as the following: 1. A Jordan Creek Non-point Source Contaminant Assessment This project would include assessing and mapping potential contaminants and nonpoint sources of pollution in the watershed. 2. A Jordan Creek Active Contaminated Sites and Groundwater	The Airport has worked with an interagency group comprised of the FAA, CBJ, ADNR, USACE, NMFS, USFWS, EPA, ADF&G, and SEAL Trust and others to develop a mitigation plan that would compensate for the unavoidable adverse impacts to wetlands and fisheries associated with the selected alternatives. Section 2.12.3 of the FEIS includes a summary description of the draft Compensatory Mitigation Plan. Since publication of the FEIS, the draft plan has been updated to reflect the greater level of project design contained in the Airport's permit application.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	Flow Assessment. This project would assess active contaminated sites and groundwater flow into Jordan Creek and associated wetlands. We highly suggest that the City and Borough of Juneau, the Juneau International Airport and other permitting agencies reconsider the current mitigation plan.	
F-74	The Purpose and Need Statement is legally insufficient under NEPA on account of vagueness and broadness. One could, as they say, drive a truck through how broad it is – or in this case, an airplane.	This comment consists of a statement of opinion that the FAA is not able to provide a meaningful response.
F-75	The FEIS is actually a Draft EIS masquerading as an FEIS. It includes three new RSA alternatives and scintillating new information (including pictures!) on spruce root gathering on airport lands and adjacent lands. These changes and this information gathered should have been the subject of a new Draft EIS, with consideration and analysis responsive to this information.	Alternatives RSA-5D, RSA-5E, and RSA-6D are not substantively new alternatives but rather are modifications of alternatives contained in the Draft EIS. These three alternatives were developed in response to comments on the Draft EIS and to changes in FAA policy regarding RSA standards. The FAA accepted comments on the Final EIS so that the public and agencies would have an opportunity to review and comment upon these three modifications to RSA alternatives amongst other changes between the draft and final EIS. The FAA has considered comments from the public and agencies on the FEIS in preparing the Record of Decision. The pictures and oral interview information regarding spruce root gathering were included in the Draft EIS. Please, see Appendix G of that document.
F-76	The EIS fails to do any analysis of comments acquired on the Draft EIS, such as the information regarding spruce root gathering. For example, while Mr. Mobley did an admirable job of contacting people who use the land included in the scope of the expanded runway and airport areas considered under various	No comments were received on the Draft EIS regarding spruce root gathering. All information about this activity was obtained prior to the publication of the Draft EIS and included in that document, including Appendix G, which provides the documentation of oral interviews about

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	alternatives, and land adjacent thereto, there is absolutely no analysis of this data. Mary Lou King and Janice Criswell provided ample testimony for such analysis, and none is conducted in this "FEIS." Sealaska Heritage Institute also weighed in on this topic. Inexplicably, there is one excruciatingly tangential statement buried in the EIS, that "Access to the spruce grove for the purpose of gathering spruce roots is by special permit only… [and] according to Airport staff, as security increases, the number of permits issued for this purpose may decrease." As a spruce root gatherer, I find this gathering of valuable information and failure to do anything but include this testimony regarding this land use in the EIS to be not only legally insufficient, but downright offensive. The writers of this EIS on this proposed action have a duty to consider and analyze and impacts of the proposed action on spruce root gatherers, and indeed on the ancient Northwest Coast weaving tradition using spruce roots whose aging elders use and need to use available trees of a certain age in flat sandy soil such as the airport spruce groves provide. The EIS writers have a duty to consider what the proposed action is going to be, on this use and these users, and not the other way around. The law requires it, and the root gatherers deserve, not only to be listened to, but provided for – within the documentation of this EIS, and not simply with a dismissive sentence that "airport staff" (who incidentally were not even named in the EIS) consider them a security risk and will decline permitting their use of the spruce groves in the future. As the testimony provided by King and Criswell shows, spruce root gathering has a long tradition at the airport and the needs of the weaving community and newcomers to this tradition depend upon inclusion in the process. It is a	the subject and pictures of spruce root gathering and woven items. In part because of the concern over potential impacts to spruce root gathering and in part because of concern over wildlife viewing opportunities and loss of wildlife habitat, the proposed action that would have resulted in impacts to the spruce grove—cutting or thinning of trees in the grove—were not included in the preferred alternative for the wildlife hazard management plan. The FAA does not intend to select the action to remove the trees and for the reasonably foreseeable future the Float Plane Pond woodlands should remain in approximately their current condition. Actions by the Airport to reduce the number of special permits granted for spruce root gathering are not under the jurisdiction of the FAA and are not among those actions considered in the EIS. No action to restrict access to the spruce grove for the purpose of gathering roots was specifically proposed by the Airport. Information about possible future limitations on permits for gathering was included in the EIS to acknowledge that other actions, outside of those considered in the EIS, could occur that may impact this activity. Acknowledgement of potential impacts to spruce root gathering is contained throughout Chapter 4 of the EIS. For example, please, see Section 4.8.11 and its subsections regarding the potential impacts from implementation of alternatives for the Wildlife Hazard Management Plan on spruce root gathering.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	foreseeable and extremely compatible use that should be provided for in all of the analysis of the various alternatives in this EIS process.	
F-77	ADF&G believes that the preferred alternatives as described in the FEIS meet the conditions set forth in the Mendenhall Wetlands State Game Refuge Management Plan for JNU to acquire Refuge land for airport expansion.	The FAA acknowledges that the ADF&G believes the preferred alternatives meet the conditions in the Refuge Management Plan for acquisition of Refuge lands for Airport purposes.
F-78	Implementation of the preferred RSA alternative, RSA-5E, would require relocation of the MALSR system for Runway 08. Maintenance activities for the existing MALSR system for Runway 08 have resulted in deep rutting of wetlands, and the system cables have been exposed by erosion. Further, we can find no record of an access easement or current special areas permit allowing vehicular access. Habitat damage and operating without permits are both unacceptable situations for a State Game Refuge. To resolve these issues, ADF&G suggests that FAA or JNU apply for appropriate easements from ANDR.	FAA is committed to working with ADF&G to address rutting and other problems associated with the existing Runway 08 access route. Additionally, FAA will work with ADF&G to obtain required access easements and special area permits necessary for vehicular access for operation and maintenance of the existing approach light system.
U.S. Environmental Protection Agency		
F-79	EPA supports the identification of the preferred alternative including RSA-5E. According to the FEIS, the rationale for selecting the preferred alternative is that it meets the requirements of P.L.109-443. We would agree that FAA has satisfied the requirements of P.L.109-443 by identifying RSA-5E as the preferred alternative in the final EIS. However, compliance with P.L. 109-443 does not supersede the obligation to comply with other applicable laws such as the Clean Water Act 404(b)(1) when making a final decision about alternative implementation in the Record of Decision (ROD). The NEPA regulations draw a clear distinction between the preferred	A discussion about the rationale for selecting Alternative RSA-5E, including its compliance with the 404(b)(1) guidelines will be included in the Record of Decision.

Table B-2. Summary of FEIS comments and FAA responses

#	*Comment Summary/Excerpt*	*Response*
	alternative, which agencies shall identify in the FEIS [40 CFR § 1502.14(e)], and the decision, which agencies shall state in the ROD [40 CFR § 1505.2(a)]. Although agencies often decide to implement the preferred alternative, they are not required to do so. Agencies may (and sometimes do) decide to implement an alternative other than the preferred alternative. In this case, P.L. 109-443 directs FAA as to which RSA alternative to "select as the preferred alternative" (emphasis added), but does not specifically require implementation of the preferred alternative. The decision in the ROD should be made according to processes that comply with all relevant laws, which in this case may well lead to the same conclusion. In order to receive a 404 permit, the alternative must also meet Clean Water Act requirements. Therefore we strongly suggest that the rationale for selecting an alternative in the ROD include a discussion showing that the selected alternative complies with the 404(b)(1) Guidelines.	
F-80	EPA supports the development of a compensatory mitigation plan. However, since the effectiveness of the mitigation is entirely dependent on the details and implementation of that plan, EPA encourages FAA to include specific information in the ROD, including the mitigation sequence and firm commitments for ratios and amounts.	Specific information from and about the final mitigation plan developed through the permitting process will be contained in the Record of Decision.

APPENDIX C: PROGRAMMATIC AGREEMENT

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APPENDIX C

PROGRAMMATIC AGREEMENT

This appendix contains a copy of the Programmatic Agreement executed between the FAA, the Alaska State Historic Preservation Officer, and the City and Borough of Juneau regarding phased identification of archaeological resources and completion of the Section 106 process of the National Historic Preservation Act.

PROGRAMMATIC AGREEMENT
between
the Federal Aviation Administration,
the Alaska State Historic Preservation Officer,
and the City and Borough of Juneau
Pursuant to 36 CFR Part 800.6(b)1(iv)
Regarding the Juneau International Airport Environmental Impact Statement Project; Federal/State Project No. AIP 3-02-0133-3000

Whereas, the Federal Aviation Administration (FAA), through a grant to the City and Borough of Juneau (CBJ) proposes to improve runway safety areas, aviation facilities, snow removal equipment facilities, and fuel farm access and to take action to reduce wildlife hazards at the Juneau International Airport in Juneau, Alaska; and

Whereas, the proposed work shall be funded with federal financial assistance made available through the FAA and constitutes a federal undertaking; and

Whereas, the FAA has consulted with the State Historic Preservation Officer (SHPO), and Sealaska Corporation, Sealaska Heritage Foundation, Goldbelt, Inc. and the Tlingit and Haida Indian Tribes of Alaska pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. § 470); and

Whereas, the FAA and SHPO, being signatory parties to this Programmatic Agreement (PA; Agreement), have determined that the general project area, includes areas of high site potential areas (e.g., level terrain, areas along the tidal shore, and areas near creeks) that are covered by dense vegetation and/or sediment deposited by either man-made or natural causes; and

Whereas, the FAA and the SHPO agree that the specific area of potential effects (APE) for cultural resources, as defined at 36 CFR § 800.16(d), will not be determined until such time as a record of decision (ROD) is issued documenting FAA's decision on preferred alternatives for the proposed actions; although preliminary reconnaissance level surface inspections of general project areas have been undertaken by qualified consultants preparing the EIS; and

Whereas the FAA, in consultation with the SHPO has determined that the proposed undertaking in areas of high site potential with obscured natural ground surfaces (including the Northwest Development Area, the Duck Creek corridor, the banks of the Mendenhall River, and the eastern Runway Safety Area; see Attachment A) require additional archeological site investigation to determine if historic properties not available for surface inspection (e.g., subsurface resources or resources obscured by vegetation may be present within the APE); and

Whereas the National Historic Preservation Act, 16 U.S.C. § 470 (NHPA), and its implementing regulations (36 CFR Part 800.4(b)(2)) allow for the phased identification

of historic properties in situations where the specific nature of an undertaking and its potential scope and effect have not yet been completely defined prior to the initiation of the Section 106 process of the NHPA; and

Whereas, the FAA has invited the Advisory Council on Historic Preservation (Council) to participate in this Agreement and the Council has declined to participate; and

Whereas, no federally-recognized Tribe has expressed concern about the proposed undertakings under consideration in the Final EIS; and

Whereas, CBJ, as landowner and project sponsor, is the responsible party to carry out stipulations of this Agreement, and is an invited signatory to this PA;

Now, therefore, FAA and SHPO agree that upon the issuance of a ROD for the Juneau International Airport EIS and prior to any physical ground disturbance associated with any undertaking identified in the ROD for areas of high potential for subsurface or obscured sites (e.g., the Northwest Development Area, the Duck Creek corridor, the banks of the Mendenhall River, and the eastern Runway Safety Area), the stipulations outlined in this Agreement shall be implemented in order to take into account the effects the undertaking may have on any historic properties that were not available for surface identification during the reconnaissance surveys conducted for the EIS.

STIPULATIONS

FAA shall ensure that the following stipulations are implemented, tasking CBJ to fulfill the stipulations:

I. Project Schedule

A. Archaeological site identification efforts targeting potential subsurface cultural resources and cultural resources obscured by dense vegetation shall be completed in advance of construction activities in those portions of the Northwest Development Area, the Duck Creek corridor, the banks of the Mendenhall River (see Attachment A), and the eastern Runway Safety Area not modified after 1957, with the commencement date for the identification efforts subject to approval of an Archaeological Resource Identification Plan as outlined in Stipulation II.A.

B. Project construction is estimated to commence in spring 2008 and is anticipated to take approximately 5 years to complete.

II. Archaeological Resource Identification Plan

A. Prior to any physical ground disturbance related to any undertaking (as identified in the ROD) in those portions of the Northwest Development Area, the Duck Creek corridor, the banks of the Mendenhall River, and the eastern Runway Safety Area not modified after 1957, a cultural resource identification plan

outlining measures to identify archaeological resources that may be present below the modern ground surface or otherwise obscured by dense vegetation will be developed and implemented.

1. The plan will be developed in consultation with the SHPO, and the SHPO will have an opportunity of no less than 30 calendar days to review and provide comment on the draft and final versions of the plan. The comments of the SHPO shall be taken into account when preparing the final plan, and the concurrence of both the FAA and the SHPO is required before the plan may be implemented.

2. At a minimum the plan shall

   a. clearly identify in graphic format those areas subject to activities that could impact archaeological resources; and

   b. clearly identify in graphic format and supporting text those areas identified for specific investigative procedures. Areas to be investigated will be based upon a combination of site potential and potential for ground disturbance associated with the implementation of actions included in the Final EIS; and

   c. provide a description of the methods to be used to identify those archaeological resources that may be located below the ground surface or obscured by dense vegetation and a justification for why those methods are appropriate; and

   d. describe the methods for curation of any artifacts collected during identification efforts and provide a copy of a valid curation agreement for an appropriate repository in Alaska.

III. Human Remains and Funerary Objects

The project area is not expected to contain human remains, associated or unassociated funerary objects, sacred objects, or items of cultural patrimony as defined by the Native American Graves Protection and Repatriation Act *(25 U.S.C. 3001)*.

A. Should human burials be encountered, work will be stopped at once in the locality and the FAA, AKSHPO and the Alaska State Troopers (AST) shall be contacted immediately. See Attachment B for contact numbers.

B. If the human remains appear recent in the judgment of the archaeologists, the FAA and CBJ shall defer to the opinion of the AST and Alaska State Medical Examiner (Alaska SME) for a determination of whether the remains are of a forensic nature and /or subject to criminal investigation.

C. If the racial identity of the human remains is in question, a physical anthropologist experienced in the analysis of human remains shall examine them. The physical anthropologist shall document, analyze, and photograph the remains so that an independent assessment of racial identity can be made. The physical anthropologist shall be afforded no more than 30 days time to conduct his or her analysis.

D. If the human remains are determined to be of Native American origin, the FAA will follow the spirit of the regulations and procedures set forth in the Native American Graves Protection and Repatriation Act (43 CFR 10).

E. If the human remains are not Native American, and a determination has been made by the AST and Alaska SME that a death investigation is not warranted, then CBJ, under the direction of the FAA, and in consultation with the Alaska SME, will identify, locate and inform descendants of the deceased. If no descendants are found, CBJ, under the direction of the FAA, shall obtain a Burial Transit Permit from the Alaska State Bureau of Vital Statistics, and reinter the remains in a designated area.

IV. Reporting

A. Upon completion of the activities outlined in the approved archaeological resources identification plan, a report or reports summarizing the methods employed for resource identification, the results of those efforts, evaluations of any identified resources relative to the criteria of the National Register of Historic Places (NRHP), and an assessment of the potential effects upon any resources recommended eligible for the NRHP.

1. As appropriate, separate reports may be prepared for investigations in the Northwest Development Area, the Duck Creek corridor, the banks of the Mendenhall River, and the eastern Runway Safety Area, and concurrence with the findings of each report may be requested separately.

2. CBJ shall ensure that the report(s) meet(s) contemporary professional standards and the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-44737).

3. CBJ shall ensure that the draft report(s) as described in Stipulation IV.A. is(are) provided to the FAA within 3 months after completion of fieldwork.

B. FAA shall make a determination of eligibility relative to the criteria of the NRHP for all identified resources.

C. FAA shall make a finding of effect for all historic properties (eligible resources).

D. FAA shall submit the report or reports to the SHPO within 6 months after completion of the fieldwork. All cover pages, AHRS site records, and other supporting documentation required by the SHPO will be submitted along with the report. The FAA shall seek the concurrence of the SHPO on the agency's determinations of eligibility and findings of effect for all resources identified during field investigations.

1. The SHPO shall have 30 days to provide comment on and/or concurrence with the FAA's determinations and findings of the summary report, and CBJ shall ensure that all SHPO comments are addressed prior to the commencement of any activities associated with the proposed undertakings in the areas identified for archaeological site identification.

2. If adverse effects to historic properties are identified as a result of consultation carried out as part of Stipulation IV.C, and if the SHPO concurs with this finding, FAA shall consult with the SHPO and appropriate additional parties as necessary to execute a Memorandum of Agreement to resolve said effects.

3. If a determination of either No Historic Properties Affected or No Adverse Effect is made by the FAA and concurred with by the SHPO, CBJ is authorized by execution of this agreement to begin ground-disturbing activities upon receipt of written confirmation from the FAA of said determination.

V. Professional Qualifications

All archeological fieldwork shall be conducted by archeologists meeting the qualifications of the Secretary of the Interior's Standards and Guidelines (FR Vol.48, No.190, pp. 44738-44739). The technical expertise of the professional shall be an appropriate match for the fieldwork.

VI. Dispute Resolution

A. Should any changes occur to the stipulations of this PA or to the archaeological resource identification plan, or should any party to this agreement object within 30 days to any report provided for review or actions proposed pursuant to this agreement, FAA shall notify the concurring parties prior to implementing such changes. If any concurring party objects to the changes, the FAA shall consult with the objecting party to resolve the objection. If the FAA determines that the objection cannot be resolved through consultation, the FAA shall forward all documentation relevant to the objection to the Council, including the FAA's proposed response to the objection. Within 30 days after receipt of all pertinent documentation, the Council shall exercise one of the following options:

1. Advise the FAA that the Council concurs with the FAA's proposed final decision, whereupon the FAA will respond to the objection accordingly; or

2. Provide the FAA with recommendations, which the FAA shall take into account in reaching a final decision regarding its response to the objection.

B. Should the Council not exercise one of the above options within 30 days after receipt of all pertinent documentation, the FAA may assume the Council's concurrence in the FAA's proposed response to the objection.

C. At any time during implementation of the measures stipulated in this agreement, should an objection to any such measure or its manner of implementation be raised by a member of the public, FAA shall take the objection into account and consult as needed with the objecting party, SHPO, or the Council to resolve the objection.

VIII. Amendment

Any signatory party to this PA may request that the other signatories consider an amendment, whereupon they shall consult to consider such amendment. Amendments shall be executed in the same manner as the original PA.

IX. Expiration

This PA shall continue in full force and effect until July 2008. At any time in the six-month period prior to the expiration date, CBJ may request FAA and SHPO in writing to review CBJ's project schedule and consider an extension or modification of this PA. No extension or modification shall be effective unless all parties to the PA have agreed to it in writing.

X. Termination

Any signatory party to this PA may terminate it by providing 30 days notice to the other parties, provided that the other parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, FAA will, again, seek the comments of the Council pursuant to 36 CFR 800.5 through 800.7.

Execution and Implementation

Execution of this PA by FAA and SHPO and CBJ and its submission to the Council in accordance with 36 CFR 800.6(b)(1)(iv), shall, pursuant to 36 CFR 800.6(c), be considered to be an agreement with the Council for the purposes of Section 110(l) of NHPA. Execution and submission of this PA, and implementation of its terms is evidence that FAA has afforded the Council an opportunity to comment on the Project and its

effects on historic properties, and that FAA has taken into account the effects of the Project on historic properties.

SIGNATORIES:

FEDERAL AVIATION ADMINISTRATION

By: Patricia A Sullivan July 2 '07
Patricia A. Sullivan, Environmental Program Manager, Airports Division Date

ALASKA STATE HISTORIC PRESERVATION OFFICER

By: Judith E. Bittner July 2, 2007
Judith Bittner, Alaska SHPO Date

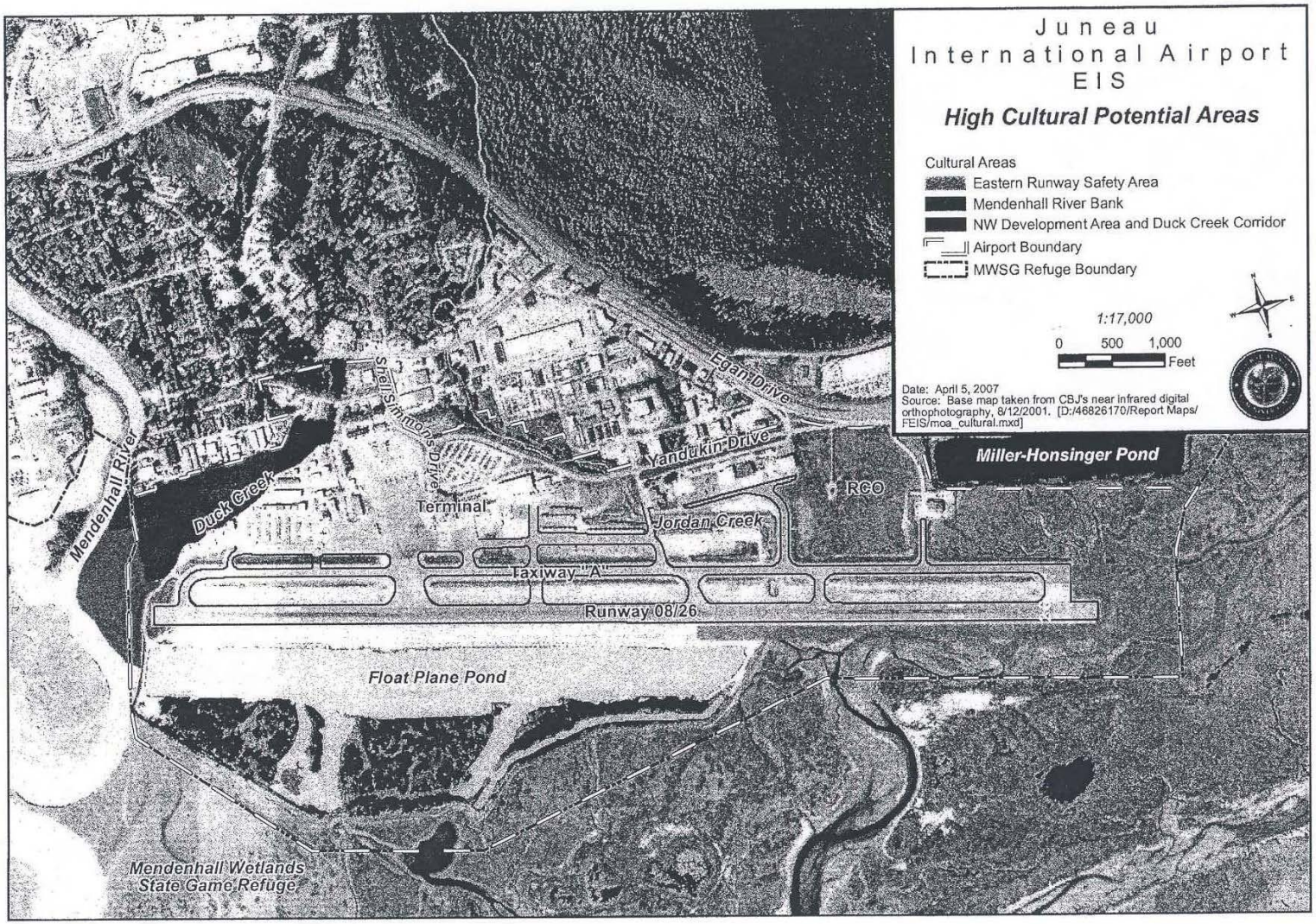
INVITED SIGNATORIES:

CITY AND BOROUGH OF JUNEAU

By: July 6, 2007
ACTING FOR David R. Palmer, Manager, Juneau International Airport Date

ATTACHMENT A

Figure showing location of areas with high site potential



Location of areas of high potential for subsurface or obscured cultural resources.

ATTACHMENT B

Contact Information for
Agency Officials Involved with Human Remains Consultation

Agency/Contact Person	Address/Phone Number
Federal Aviation Administration	
Patti Sullivan, Lead Environmental Manager	Alaskan Region, Airports Division 222 West 7th Avenue Anchorage, Alaska 99513
Alaska State Historic Preservation Office	
Judith Bittner, State Historic Preservation Officer	
State Medical Examiner	
Dr. Frank Fallico	4500 S. Boniface Pkwy Anchorage, Alaska 99508-1264 Phone: (907) 334-2214 Fax: (907) 334-2216
Alaska State Troopers, Juneau	
	Phone: (907) 465-4000
AST Criminal Investigation Bureau	
	Phone: (907) 269-5611
Alaska Bureau of Vital Statistics, Juneau	
	Bureau of Vital Statistics 5441 Commercial Blvd. PO Box 110675 Juneau, Alaska 99801
Philip Mitchell, Chief	Phone: (907) 465-8604 Fax: (907) 465-3618
Janet Shea	Phone: (907) 465-8608 Fax: (907) 465-4689