



TABLE OF CONTENTS

| | | |
|----------|--|-----------|
| 1 | Introduction | 1 |
| 2 | Purpose and Need..... | 4 |
| 3 | Proposed Action | 4 |
| 3.1 | Identification of Federal Action Requested..... | 5 |
| 3.2 | Alternatives Dropped from Further Consideration..... | 5 |
| 3.2.1 | Dropped Alternative 1.1..... | 5 |
| 3.3 | Proposed Action – Alternative 2.2..... | 6 |
| 3.3.1 | Permits or Approvals..... | 7 |
| 3.4 | No Action – No-Build Alternative | 7 |
| 3.4.1 | Permits or Approvals..... | 7 |
| 3.5 | Alternatives Summary..... | 7 |
| 4 | General Setting | 10 |
| 4.1 | Climate | 10 |
| 4.2 | Topography, Geology, and Soils | 10 |
| 4.3 | Hydrology | 10 |
| 5 | Impact Comparison of Alternatives | 10 |
| 5.1 | Categories of Non-Issue | 10 |
| 5.2 | Biological Resources (Including Fish, Wildlife, and Plants)..... | 11 |
| 5.2.1 | Affected Environment | 11 |
| 5.2.2 | Environmental Consequences of Alternatives | 16 |
| 5.2.3 | Minimization and Mitigation..... | 19 |
| 5.2.4 | Consultation, Permits, and Other Approvals..... | 19 |
| 5.3 | Hazardous Materials, Solid Waste, and Pollution Prevention..... | 20 |
| 5.3.1 | Affected Environment | 20 |
| 5.3.2 | Environmental Consequences of the Alternatives..... | 22 |
| 5.3.3 | Minimization and Mitigation..... | 23 |
| 5.3.4 | Consultation, Permits, and Other Approvals..... | 23 |
| 5.4 | Historical, Architectural, Archaeological, and Cultural Resources..... | 24 |
| 5.4.1 | Affected Environment | 24 |
| 5.4.2 | Environmental Consequences of the Alternatives..... | 24 |
| 5.4.1 | Minimization and Mitigation..... | 26 |
| 5.4.2 | Consultation, Permits, and Other Approvals..... | 26 |
| 5.5 | Land Use..... | 26 |
| 5.5.1 | Affected Environment | 26 |
| 5.5.2 | Environmental Consequences of the Alternatives..... | 27 |
| 5.5.3 | Minimization and Mitigation..... | 30 |
| 5.5.4 | Consultation, Permits, and Other Approvals..... | 30 |
| 5.6 | Natural Resources and Energy Supply | 30 |
| 5.6.1 | Affected Environment | 30 |
| 5.6.2 | Environmental Consequences of the Alternatives..... | 31 |



| | | |
|----------|---|-----------|
| 5.6.3 | Minimization and Mitigation..... | 31 |
| 5.6.4 | Consultation, Permits, and Other Approvals..... | 32 |
| 5.7 | Noise and Noise-Compatible Land Use | 32 |
| 5.7.1 | Affected Environment | 32 |
| 5.7.2 | Environmental Consequences of the Alternatives..... | 32 |
| 5.7.3 | Minimization and Mitigation..... | 33 |
| 5.7.4 | Consultation, Permits, and Other Approvals..... | 33 |
| 5.8 | Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks | 33 |
| 5.8.1 | Socioeconomics..... | 33 |
| 5.8.2 | Environmental Justice | 35 |
| 5.8.3 | Children’s Environmental Health and Safety Risks..... | 36 |
| 5.9 | Water Resources..... | 37 |
| 5.9.1 | Wetlands | 37 |
| 5.9.2 | Floodplains..... | 43 |
| 5.9.3 | Surface Waters..... | 45 |
| 5.10 | Cumulative Impacts..... | 48 |
| 5.10.1 | Affected Environment | 48 |
| 5.10.2 | Environmental Consequences | 50 |
| 6 | Coordination | 52 |
| 6.1 | Public Correspondence | 52 |
| 6.1.1 | Stakeholder Working Group Meetings..... | 53 |
| 6.2 | Agency Correspondence..... | 53 |
| 6.2.1 | Agency Meeting Correspondence..... | 53 |
| 7 | List of Preparers..... | 54 |
| 8 | References..... | 55 |

TABLES

| | |
|---|----|
| Table 1 – Comparison of Alternatives..... | 7 |
| Table 2 – BCCs Documented at the Seward Airport..... | 13 |
| Table 3 – Project Area Wetlands and Documented BCCs That May Use Them..... | 15 |
| Table 4 – Environmental Consequences: Biological Resources | 18 |
| Table 5 – Contaminated Sites in and Adjacent to the Project Area | 20 |
| Table 6 – Environmental Consequences: Hazardous Materials, Solid Waste, and Pollution Prevention... | 23 |
| Table 7 – Environmental Consequences: Historical, Architectural, Archaeological, and Cultural Resources | 26 |
| Table 8 – Seward Airport, Adjacent Land Uses..... | 26 |
| Table 9 – Environmental Consequences: Land Use | 30 |
| Table 10 – Environmental Consequences: Natural Resources and Energy Supply | 31 |
| Table 11 – Environmental Consequences: Noise and Noise-Compatible Land Use..... | 33 |
| Table 12 – Environmental Consequences: Socioeconomics | 35 |
| Table 13 – Environmental Consequences: Environmental Justice..... | 36 |
| Table 14 – Environmental Consequences: Children’s Health and Safety Risks..... | 37 |
| Table 15 – Wetland Area Impacts by Project Component | 39 |



| | |
|---|----|
| Table 16 - Wetland Fill Quantities by Fill Type | 39 |
| Table 17 - Environmental Consequences: Wetlands..... | 41 |
| Table 18 - Environmental Consequences: Floodplains..... | 45 |
| Table 19 - Environmental Consequences: Surface Waters..... | 47 |
| Table 20 - Environmental Consequences: Cumulative Impacts | 52 |
| Table 21 - Project Team..... | 54 |

FIGURES

| | |
|--|----|
| Figure 1 - Location and Vicinity Map | 2 |
| Figure 2 - Proposed Action | 3 |
| Figure 3 - Biological Resources..... | 12 |
| Figure 4 - Contaminated Sites | 21 |
| Figure 5 - Area of Potential Effect..... | 25 |
| Figure 6 - Land Use Map | 29 |
| Figure 7 - Wetlands Impact..... | 40 |
| Figure 8 - Floodplain Map..... | 44 |
| Figure 9 - Surface Water..... | 46 |

APPENDICES

| | |
|--|--|
| Appendix A - NEPA Scoping and Agency Coordination | |
| Appendix B - Alternatives Dropped from Further Consideration | |
| Appendix C - Environmental Impact Categories: Non-Issues | |
| Appendix D - Biological Resources | |
| Appendix E - Wetlands | |



LIST OF ACRONYMS AND ABBREVIATIONS

| | | | |
|--------|---|---------|---|
| ADEC | Alaska Department of Environmental Conservation | HAPC | Habitat Areas of Particular Concern |
| ADF&G | Alaska Department of Fish and Game | HMCP | Hazardous Material Control Plan |
| ADG | Aircraft Design Group | IPaC | Information for Planning and Consultation |
| ADNR | Alaska Department of Natural Resources | KPB | Kenai Peninsula Borough |
| AHRS | Alaska Heritage Resources Survey | LOMR | Letter of Map Revision |
| ALP | Airport Layout Plan | M&O | Maintenance and Operations |
| APDES | Alaska Pollutant Discharge Elimination System | MMPA | Marine Mammal Protection Act |
| APE | Area of Potential Effect | NAVAIDS | Navigational Aids |
| ARRC | Alaska Railroad Corporation | NEPA | National Environmental Policy Act |
| ASOS | Automated Surface Observation System | NLURA | Northern Land Use Research of Alaska, LLC |
| AWC | Anadromous Waters Catalog | NMFS | National Marine Fisheries Service |
| BCC | Birds of Conservation Concern | NPL | National Priorities List |
| BCR | Bird Conservation Region | NWI | National Wetland Inventory |
| BFE | Base Flood Elevation | OHA | Office of History and Archeology |
| BMP | Best Management Practices | PAPI | Precision Approach Path Indicator |
| CEQ | Council of Environmental Quality | RCRA | Resource Conservation and Recovery Act |
| CGP | Construction General Permit | RGL | Regulatory Guidance Letter |
| CY | cubic yards | RPZ | Runway Protection Zone |
| dB | Decibel | RW | Runway |
| DNL | Day-Night Average Sound Level | SBCFSA | Seward/Bear Creek Flood Service Area |
| DOT&PF | Alaska Department of Transportation and Public Facilities | SFHA | Special Flood Hazard Area |
| DPOR | [ADNR] Department of Parks and Outdoor Recreation | SHPO | State Historic Preservation Officer |
| EA | Environmental Assessment | SMF | Seward Monofill/Landfill |
| EFH | Essential Fish Habitat | SMIC | Seward Marine Industrial Center |
| EPA | Environmental Protection Agency | SWG | Stakeholder Working Group |
| ESA | Endangered Species Act | SWPPP | Storm Water Pollution Prevention Plan |
| FAA | Federal Aviation Administration | TW | Taxiway |
| FEMA | Federal Emergency Management Agency | USACE | United States Army Corps of Engineers |
| FIRM | Flood Insurance Rate Map | USFWS | United States Fish and Wildlife Service |
| FIS | Flood Insurance Study | USGS | United States Geological Survey |
| FONSI | Finding of No Significant Impact | VASI | Visual Approach Slope Indicator |
| ft | feet | WAP | Wildlife Action Plan |



1 INTRODUCTION

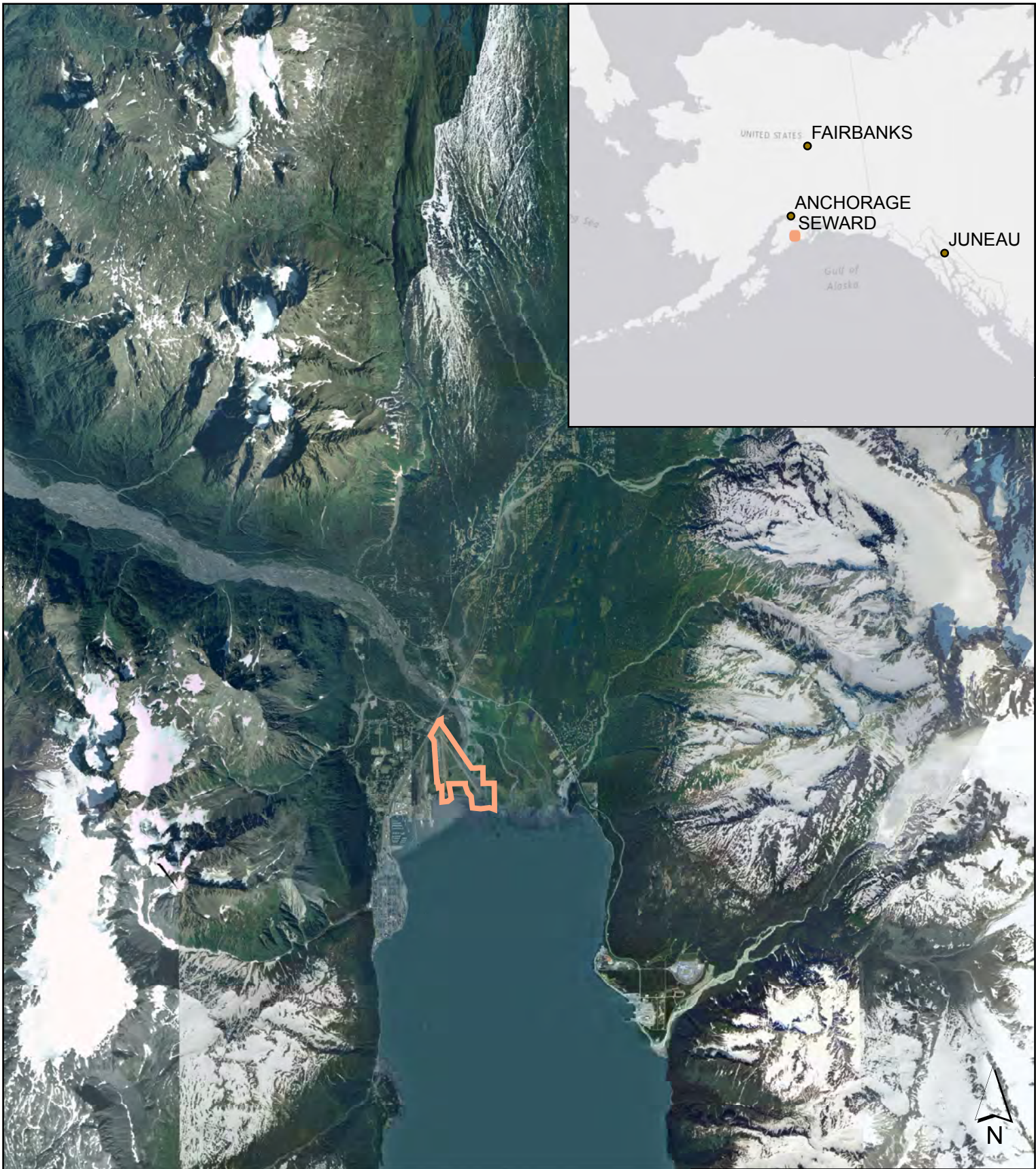
The State of Alaska owns and operates the Seward Airport, which includes a paved main RW (RW 13-31), a paved secondary RW (RW 16-34), multiple TWs (TWs), and two aprons. RW 13-31 is 4,249 ft (ft) x 100 ft and RW 16-34 is 2,289 ft x 75 ft. The Seward Airport primarily serves the City of Seward and residents of the area between Seward and Moose Pass. Local residents use the airport for travel to Anchorage and Prince William Sound. There is no regularly scheduled passenger air service from Seward to Anchorage. Tour operators use the airport as a base for sightseeing tours of Kenai Fjords National Park via airplane and helicopter. The number of operations at the airport is much higher in the summer than in the winter. Although Seward is connected to other communities by rail, road, and the marine highway, the airport provides access during medical emergency or disaster situations when other access (single rail line and single highway) may be unavailable.

Annual operations at the airport typically average 10,500 and are broken down as 4,500 air taxi, 2,000 general aviation (local), 4,000 general aviation (itinerant) and 10 military. Aircraft range from King Air 200 for medevac operations; Cessna 170, 172 and Super Cub PA-18 for private operators; and Beech 1900 and Cessna 208 Caravan for air taxi/charters.

Seward, Alaska, is located on the Kenai Peninsula at the north end of Resurrection Bay, approximately 75 air miles or 125 highway miles southwest of Anchorage (see Figure 1). Most of the Seward Airport is located within the floodplain of the Resurrection River Delta, as shown on Figure 2. The main RW is in the direct path of the river and continues to experience damage by recurrent flooding. The frequency and severity of flooding has accelerated. RW 13-31 has been overtopped 18 times since 2011. Recent testing of the RW embankment shows insufficient bearing capacity to support large aircraft. As a result, the use of RW 13-31 has been restricted to small aircraft with a weight of 12,500 pounds or less. This weakening of the embankment is believed to have been caused by frequent flooding.

The proposed Seward Airport Improvements project has been in the planning stages since 2014. The purpose of the project is to identify improvements that will meet the aviation needs of the community, allow cost-effective maintenance of facilities within the dynamic floodplain environment, and ensure that the airport continues to be operational. The Alaska Department of Transportation and Public Facilities (DOT&PF) completed an Environmental Assessment (EA) for improvements recommended in the 2008 Airport Master Plan with a finding of no significant impact (FONSI) for those recommended improvements. The increased number and severity of flood events, as well as damage to RW 13-31, have led to substantial changes, creating the need to reconsider the project since the 2008 recommendations were developed. An updated “needs assessment” that includes initial engineering studies and evaluations is documented in the July 2017 *Seward Airport Scoping Report* (available at the website <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>).

To secure the property that will be identified in the future Airport Layout Plan (ALP), this project includes acquiring property needed for a future RW extension to 4,000 ft. This project evaluation does not include the construction of future extension; only the land acquisition is considered in this EA. This land acquisition is needed for airspace protection only and is not needed for construction. Another environmental process would be completed prior to the construction of the future RW extension.

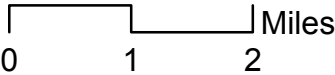


Legend



Seward Airport Boundary

Section: 34, 35; 2, 3
Township: 1N; 1S
Range: 1W
Meridian: Seward
USGS Quad: Seward A-7



Seward, Alaska

Date: 11/2/2018

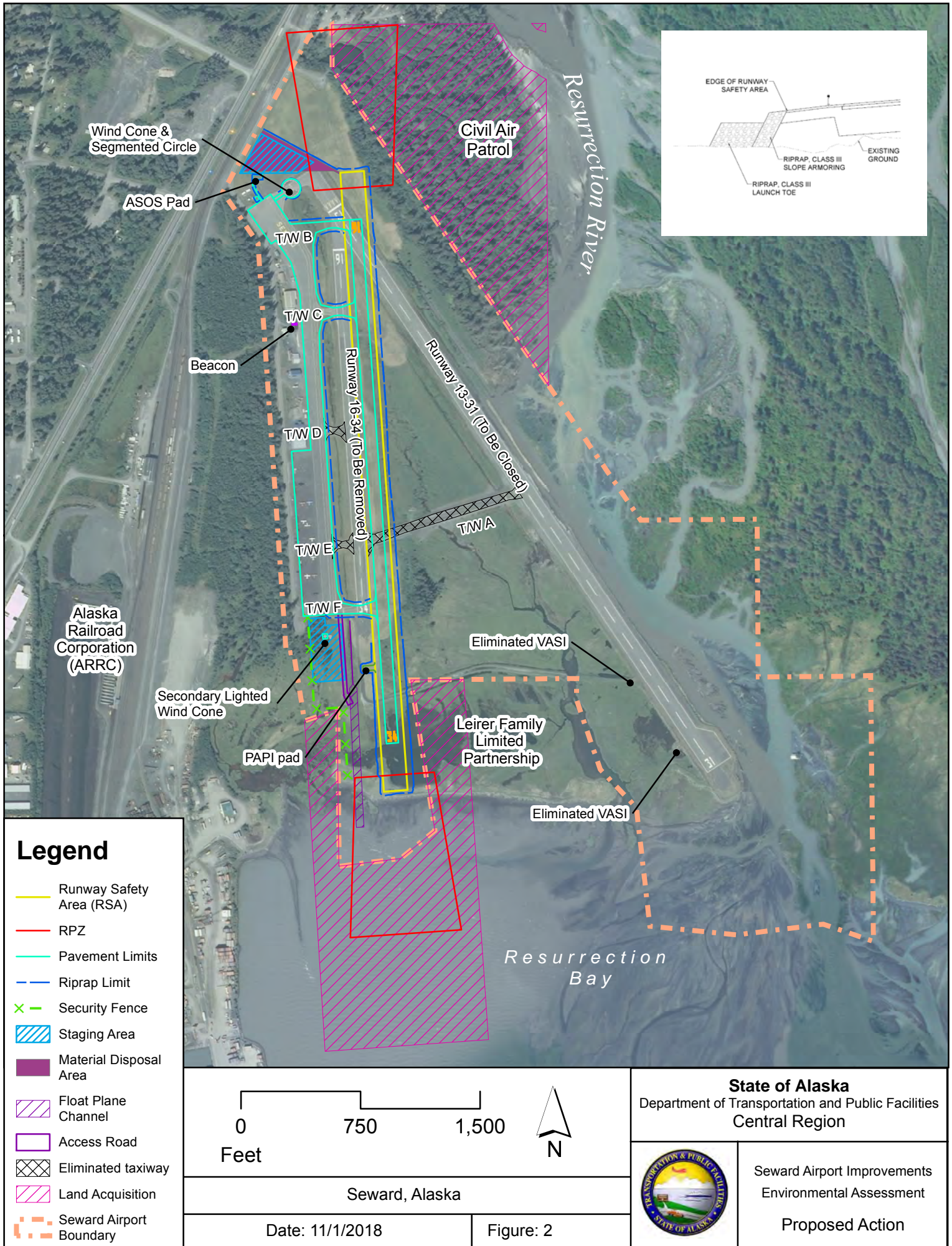
Figure: 1

State of Alaska

Department of Transportation and Public Facilities
Central Region



Seward Airport Improvements
Environmental Assessment
Location & Vicinity Map





2 PURPOSE AND NEED

The proposed Seward Airport Improvements project has two primary purposes. The first is to develop engineering solutions that will protect airport facilities from further damage caused by recurrent flooding of the Resurrection River in order to provide a reliable working airport. The Seward Airport is located within the floodplain of the Resurrection River, and portions of the airport are within the defined floodway (see Figure 8 on page 44). The main RW (RW 13-31) has been overtopped 18 times since 2011, resulting in damage to all the airport facilities. Erosion from the river and regular flood damage require a continuous maintenance effort by DOT&PF to keep the RW usable.

The second purpose is to correct deficiencies that exist based on the state's requirements for a Community Class Airport and current Federal Aviation Administration (FAA) design standards for an Aircraft Design Group II (ADG II) facility. These improvements should meet the near-term aviation demands as well as plan for future demand. Specifically, the airport owner (DOT&PF) needs to:

- ✈ Maintain a minimum RW length of 3,300 ft to accommodate current and near-term aircraft in use, including medevac operations.
- ✈ Meet the RW width and TW dimensional standards of ADG II.
- ✈ Construct flood protection to prevent erosion damage from the 100-year flood.
- ✈ Provide a minimum of 95% wind coverage for the ADG II aircraft; cross-winds.
- ✈ Include construction of a RW with sufficient bearing capacity to allow for occasional operations by larger aircraft such as Beech 1900, Dash 8, and small charter type business jets.
- ✈ Provide reliable airport lighting for night operations.
- ✈ Mitigate approach obstructions and incompatible Runway Protection Zone (RPZ) uses to the extent practicable.
- ✈ Accommodate the need for aircraft owners to change out from floats to wheels.
- ✈ Ensure the airport has sufficient service roads.
- ✈ Resurface apron pavement to support airport operations. Portions of the current apron pavement condition warrants rehabilitation.

The facility requirements for the existing airport are further described in the July 2017 *Seward Airport Scoping Report* (available at <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>).

3 PROPOSED ACTION

DOT&PF, in cooperation with the FAA Alaskan Airports Division, proposes to upgrade facilities at the Seward Airport as well as protect the airport from further damage caused by recurrent flooding. The project area lies within United States Geological Survey (USGS) Seward A-7 Quad Map (see Figure 1).

The Proposed Action, Alternative 2.2 (see Figure 2), consists of closing and discontinuing maintenance of RW 13-31. RW 16-34 would be upgraded from an A-I facility to a B-II facility. This would require the RW to be shifted to the east to provide the required separation between RW and TWs. The new RW 16-34 would be raised above the 100-year flood level with 2 ft of freeboard. Armor will be installed to protect RW 16-34, since RW 13-31 is expected to be overtopped and breached by future flood events, allowing floodwater to reach



the embankment of RW 16-34. TW B will be relocated, and TW F will be reconstructed to match RW 16-34 location and grade changes. TWs A, D, and E will be eliminated because they do not meet new FAA guidance that disallows TWs entering in the middle one-third of the RW. Navigational Aids (NAVAIDS) and weather reporting system will be relocated to an area protected from flooding and to support RW 16-34. Property will be purchased for airspace protection to the north and south. The parcel to the north will be acquired in full as the remainder of the parcel is within the Resurrection River floodway and of lower value to the owner, the parcel will allow direct access to the river in the future should additional flood mitigation be needed, and the purchase will ensure that trees are not cut down thereby adding to the prevention of streambank erosion near the airport. A small number of float plane operators occasionally utilize a service road running from the south end of the apron, across the bottom of RW 16-34 to the unnamed stream between the two RWs. This access will be lost with the shifting of RW 16-34. A new float plane access will be developed if feasible. The proposed location is shown on Figure 2.

3.1 Identification of Federal Action Requested

DOT&PF requests that the FAA Alaskan Airports Division approve the airport improvements and land acquisition and participate in funding the Seward Airport Improvements project.

3.2 Alternatives Dropped from Further Consideration

DOT&PF previously studied alternatives and developed additional alternatives that were evaluated, and presented in a Scoping Report, which is available at <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>. DOT&PF presented two alternatives to public agencies during an agency scoping meeting on March 2, 2017. The eliminated alternative, 1.1, is described below and not analyzed further in this document.

3.2.1 *Dropped Alternative 1.1*

Alternative 1.1 would have reconstructed and raised RW 13-31 above the 100-year flood level with 2 ft of freeboard. The existing RW would have remained at its current length of 4,249 ft but would have been narrowed from 100 ft to 75 ft. Riprap would have been installed within the Resurrection River to protect RW 13-31. RW 16-34 would have been raised on the north end to match the new profile for RW 13-31. TWs B and C would have been reconstructed to match the new RW 13-31 profile, and entrance TWs A, D, and E would have been reconfigured or eliminated in accordance with new FAA guidance that disallows TWs entering in the middle one-third of the RW. Several factors resulted in this alternative not being carried forward into the EA:

- ✈ Providing 2 ft of freeboard above the 100-year flood level resulted in a 4-foot increase in the base flood elevation over portions of the upstream floodplain. The RW embankment would be raised over 6 ft in some areas, with an overall average rise of 4.4 ft. This additional fill would result in a backing up of floodwaters onto an additional 159 acres of private, State, and Native allotment property along the Resurrection River as compared to the No-Build option. Higher floodwater velocities could result in increased erosion and scour. A modification to the effective Flood Insurance Rate Map (FIRM) and Floodway Map would be required. The associated Letter of Map Revision (LOMR) would require extensive hydraulic analysis, would need to satisfy additional regulatory requirements, and would require public approval.



- ✈ To build up and reinforce RW 13-31 would require placing riprap below the ordinary high water mark of the Resurrection River. This has implications for fish habitat within the river as well as navigability concerns for the braided river channel. These potential impacts would require further analysis.

Based on the above concerns, DOT&PF considered the floodplain impacts associated with Alternative 1.1 to be a significant floodplain encroachment as defined in Section 14.2.1.1 of the FAA 1050.1F Desk Reference ([FAA Office of Environment and Energy 2015](#)). This guidance further states that an alternative with a significant floodplain encroachment should not be selected if a practicable alternative exists, such as Alternative 2.2. Alternative 2.2 does not qualify as a significant floodplain encroachment. In fact, it would also allow for the eventual breaching of RW 13-31, thereby restoring part of the original floodplain.

The RW length provided under Alternative 1.1 exceeds the need of current and forecast aircraft, although the longer RW would make the airport available for infrequent use by larger aircraft. By discontinuing the use and maintenance of RW 13-31, Alternative 2.2 would reduce the overall lane miles at the airport by 25%, which should lower the annual Maintenance and Operations (M&O) costs. State budget cuts continue to decrease available maintenance funding. Further explanation for the elimination of Alternative 1.1 can be found in Appendix B.

3.3 Proposed Action – Alternative 2.2

Alternative 2.2 (shown on Figure 2) will reconstruct RW 16-34 to B-II standards and then close and discontinue maintenance of RW 13-31. Closing RW 13-31 would include removing pavement, lighting, and NAVAIDS. Alternative 2.2 would shift RW 16-34 to the east (to meet B-II offset requirements) and raise it above the 100-year flood level with 2 ft of freeboard as well as extend the length from the existing 2,289 ft to 3,300 ft. Shifting the RW also minimizes changes to the apron and adjoining lease area/buildings. Armor would be installed to protect RW 16-34. Since RW 13-31 will likely be overtopped and could subsequently be breached, flood water will reach this embankment. TW B would be relocated, and TW F would be reconstructed to match RW 16-34 location and grade changes. TWs A, D, and E would be eliminated in accordance with new FAA guidance. Other components of the Proposed Action include:

- ✈ Repave other airport surfaces as needed
- ✈ Install new airfield lighting and an electrical enclosure building
- ✈ Relocate, repair, or replace navigational aids, and markings
- ✈ Install security fencing
- ✈ Property acquisitions
- ✈ Construct a float plane channel and access road to accommodate float plane floats to wheel change-outs
- ✈ Decommission and remove existing Visual Approach Slope Indicator (VASI) on RW 13-31 and provide equivalent Precision Approach Path Indicator (PAPI) service for the south end of the new runway.
- ✈ Relocate the Automated Surface Observation System (ASOS) and the airport beacon to meet siting requirements for the new runway.
- ✈ Dispose of material within airport boundaries
- ✈ Selectively clear and grub vegetation



3.3.1 Permits or Approvals

- ✈ Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit for stormwater discharge
- ✈ Alaska Department of Fish & Game (ADF&G) Fish Habitat Permit
- ✈ Alaska Department of Natural Resources (ADNR) Land Use Permit
- ✈ U.S. Army Corps of Engineers (USACE) Section 404 Permit/Alaska Department of Environmental Conservation (ADEC) 401 Water Quality Permit
- ✈ Kenai Peninsula Borough (KPB) Multiagency Permit
- ✈ City of Seward Floodplain Development Permit

3.4 No Action – No-Build Alternative

Taking no action at the Seward Airport would result in the continued weight restrictions on RW 13-31 and likely continued degradation from flood events. The longevity of RW 13-31 without any significant intervention has not been estimated for this project. At the very least, flood events pose an interruption to air service utilizing RW 13-31. TWs A, D, and E would remain out of compliance with new FAA guidance.

3.4.1 Permits or Approvals

No permits would be needed if no action is chosen. The no-action alternative would not meet the purpose and need and would not bring the airport up to current FAA standards.

3.5 Alternatives Summary

The alternatives (Proposed Action and no action) are summarized in Table 1 below. A detailed description of the potential impacts associated with each alternative can be found in Section 5.

Table 1 – Comparison of Alternatives

| | Proposed Action | No Action |
|--|---|---|
| Purpose and Need | | |
| Protect airport from further flood damage | The Proposed Action will meet this aspect of the purpose and need. | The no action alternative would not meet this aspect of the purpose and need. |
| Compliance with FAA standards | The Proposed Action will meet this aspect of the purpose and need. | The no action alternative would not meet this aspect of the purpose and need. |
| Environmental Impacts | | |
| Air Quality | Non-issue | Non-issue |
| Biological Resources | <p>The proposed project could impact habitat of 30 Birds of Conservation Concern (BCC); however, habitat is not limited at the head of Resurrection Bay and it is expected that birds could move to other nearby locations. Non-adverse impacts to Essential Fish Habitat (EFH) are expected where instream work occurs.</p> <p>The proposed project is not anticipated to result in substantial loss of plants or wildlife, and it is not expected to impact Endangered Species Act (ESA)-listed species, their habitats, or wildlife population trends.</p> | <p>No change from current conditions; continued flooding would result in continued airport maintenance activities in adjacent habitats.</p> |



| | Proposed Action | No Action |
|--|---|---|
| Climate | <p>Via the Trump administration's Executive Order titled "Presidential Executive Order on Promoting Energy Independence and Economic Growth" the Trump administration stated:</p> <p>(c) The Council on Environmental Quality shall rescind its final guidance entitled "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," which is referred to in "Notice of Availability," 81 Fed. Reg. 51866 (August 5, 2016).</p> | The No Action alternative does not address the increase in the frequency and severity of flood events at the airport. |
| Coastal Resources | Non-issue | Non-issue |
| DOT&PF Section 4(f) | Non-issue | Non-issue |
| Farmlands | Non-issue | Non-issue |
| Hazardous Materials, Solid Waste, and Pollution Prevention | <p>The Proposed Action does not involve a property on the National Priorities List (NPL) and hazardous waste generation is not anticipated.</p> <p>Construction generated solid waste is not expected to exceed available landfill capacities.</p> | The No Action Alternative would not result in a change from current conditions. |
| Historical, Architectural, Archaeological, and Cultural Resources | A finding of "no historic properties affected" was submitted to the State Historic Preservation Officer (SHPO) on June 5, 2018. Concurrence was received on June 14, 2018. | No effect |
| Land Use | <p>The Proposed Action is consistent with local zoning codes. Noise impacts on adjacent land uses are not expected to change from current conditions.</p> <p>Separation distances from the nearest sewage lagoon will continue to meet the 10,000-foot separation guidelines. The local landfill will remain approximately 7,600 ft northwest of the airport. The new runway length and proposed fencing will increase safety by deterring bird watchers from crossing the active air operations area.</p> | No change from current conditions. |
| Natural Resources and Energy Supply | No impact to the Seward electric system's supply is anticipated as a result of new airport lighting generating an increase in demand. Fill material in nearby commercial operations is sufficient for the Proposed Action and existing material sites will not require additional permits or have to expand existing boundaries. Fuel demand at the airport is not anticipated to increase. | The No Action Alternative would not result in a change to current energy consumption levels or fill material needs. |
| Noise and Noise-Compatible Land Use | The Proposed Action would result in short-term increases in noise associated with construction activities. Long-term noise increases are not anticipated, as the Proposed Action will not result in more frequent aircraft operations or a significant change in aircraft type. Noise levels may increase at the bird-watching area at the southern edge of the airport property, but this effect is not anticipated to exceed the threshold of significance. | No change from current conditions. |



| | Proposed Action | No Action |
|---|---|--|
| Socioeconomics | The Proposed Action will not adversely affect socioeconomic considerations, including economic growth, physical arrangement of the community, relocation of residents and businesses, local traffic patterns, and the community tax base. | No effect |
| Environmental Justice | The Proposed Action will not disproportionately affect environmental justice populations. | No effect |
| Children's Health and Safety Risks | The Proposed Action will maintain the airport's ability to support medevac operations utilized by the community, including children. | Continued flood impacts at the airport may result in a diminished capacity to support the larger aircraft utilized by medevac operators. |
| Visual Effects | Non-issue | Non-issue |
| Wetlands | <p>The Proposed Action would have approximately 25 acres of unavoidable impacts to wetlands. A summary of the proposed wetland impacts are presented in Tables 15 and 16.</p> <p>The Proposed Action would not adversely impact municipal water source protections or substantially reduce the natural systems' ability to retain flood-water or storm water runoff. The project impacts 3.33 acres of wetlands that have a high functional ranking for providing wildlife habitat; no other important wildlife habitats would be impacted, and no secondary activities that increase impacts to airport or surrounding wetlands would occur. The Proposed Action is consistent with the State's wetland strategies.</p> | No change from current conditions; continued flooding would result in continued airport maintenance activities in adjacent wetlands. |
| Floodplains | The Proposed Action may cause a change to the Base Flood Elevation (BFE) of less than 0.41 feet. No development would occur within the regulatory floodway. | No change from current conditions; flooding of the RW would continue to damage RW 13-31. |
| Surface Waters | The Proposed Action is not expected to impact water quality or contaminate public drinking water. The natural and beneficial water resource values of the adjacent water bodies may be impacted. | No change from current conditions. |
| Groundwater | Non-issue | Non-issue |
| Wild and Scenic Rivers | Non-issue | Non-issue |
| Cumulative Impacts | <p>The proposed project could cumulatively impact the following resource categories at the head of Resurrection Bay area:</p> <ul style="list-style-type: none"> • Biological Resources (fish, EFH, bird habitat, invasive species) • Hazardous Materials, Solid Waste, & Pollution Prevention (solid and construction waste) • Land Use (land development) • Natural Resources & Energy Supply (utilities and natural resources) • Water Resources (Waters of the U.S. and the Resurrection River floodplain) <p>The cumulative impact of the direct and indirect effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions are not anticipated to cause significant impacts.</p> | <p>The No Action Alternative would not result in a change from current conditions.</p> <p>Cumulative impacts resulting from past, present, and reasonably foreseeable future actions that include commercial and industrial activities at the head of Resurrection Bay would continue.</p> |



4 GENERAL SETTING

4.1 Climate

Seward has a maritime subpolar, or a subarctic, climate, which is characterized by long, cold winters and short, cool to mild summers. Seward experiences moderate temperatures for Alaska and, due to its location along the Gulf of Alaska, high levels of precipitation. Average winter temperatures range from 17° to 38° Fahrenheit (F); summer average temperatures range from 49°F to 63°F. Annual precipitation averages 66 inches of rain and 80 inches of snowfall.

4.2 Topography, Geology, and Soils

Seward is located at the northern end of Resurrection Bay on the southeast coast of the Kenai Peninsula. This bay is an extension of an eroded glacial valley in the Kenai Mountains and is a deep fjord extending north from the Gulf of Alaska. Rising steeply above the bay, the surrounding Kenai Mountains climb to altitudes of nearly 5,000 ft. The waters and shores of the bay are ice-free year-round. The City of Seward is particularly susceptible to earthquakes, tsunamis, and stream flooding, which can be aggravated by heavy rains, melt runoff, heightened tidal action, and severe winds. During winter months, deep snow and avalanches occasionally hamper transportation and emergency response time in the community.

4.3 Hydrology

The Seward Airport was constructed in the Resurrection River floodplain, on the delta at the river's mouth. The river is a wide, glacial-fed, braided river with low banks. Over time the river channel has moved back and forth across the floodplain, consistent with the behavior of a braided river. Wetland areas have developed where surface drainage is restricted, or in areas subject to tidal inundation. With depths of one to two feet, the groundwater table is very shallow in places. The airport has flooded 18 times since 2011. The frequency and severity of flooding has been accelerating, resulting in more frequent and intense flooding events. Both the main RW and TW A have suffered regular damage from these events.

5 IMPACT COMPARISON OF ALTERNATIVES

5.1 Categories of Non-Issue

The following impact categories have been determined to be non-issues:

- ✈ Air Quality
- ✈ Climate
- ✈ Coastal Resources
- ✈ DOT&PF Section 4(f)
- ✈ Farmlands
- ✈ Visual Effects
- ✈ Groundwater
- ✈ Wild and Scenic Rivers

Justification for the determination of non-issue can be found in Appendix C.



5.2 Biological Resources (Including Fish, Wildlife, and Plants)

5.2.1 Affected Environment

ADF&G's 2015 Alaska Wildlife Action Plan (WAP) describes the Southcentral Alaska biographic region, including Seward, as having diverse wildlife due to its varied habitats and milder climate ([ADF&G 2015](#)). About 31% of the airport area is uplands consisting of mixed or needleleaf forest and pavement/fill for airport-related developments ([Davis and Pullman 2005](#)). Terrestrial species known to inhabit the Seward area include black and brown bears and moose, which are all occasionally observed on RWs. According to a resident, bears, river otters, and coyotes fish in the airport's ponds and creeks ([DiMarzio 2017](#)). In addition, the local Seward ecosystems and wetlands provide feeding and nesting habitat for waterfowl and other migratory birds, rearing and spawning grounds for salmon and other anadromous fish species, and hunting and nesting areas for raptors ([DOWL 2008](#)). No marine mammals or fish occur in the project area, which is about 0.25 miles from Resurrection Bay.

5.2.1.1 Essential Fish Habitat

The Anadromous Waters Catalog (AWC) identifies four anadromous fish streams, which are classified as EFH, in and near the project area ([ADF&G 2017](#)). These are listed below and shown on Figure 9:

- ✈ Unnamed stream (AWC Code 231-30-10075), located between RWs 16-34 and 13-31, contains spawning habitat for pink salmon (*Oncorhynchus gorbuscha*)
- ✈ Unnamed stream (AWC Code 231-30-10080-2017), located about 300 ft northeast of RW 13-31, contains sockeye salmon (*O. nerka*) spawning and rearing habitat and Coho salmon (*O. kisutch*) rearing habitat
- ✈ Airport Creek (AWC Code 231-30-10080-2003), located adjacent to RW 13-31 to the northeast, contains spawning habitat for chum salmon (*O. keta*)
- ✈ Resurrection River (AWC Code 231-30-10080), located about 4,200 ft northeast of RW 13-31, contains chum, pink, and Coho salmon and eulachon spawning habitat, Coho salmon rearing habitat, and sockeye and Chinook salmon (*O. tshawytscha*) present

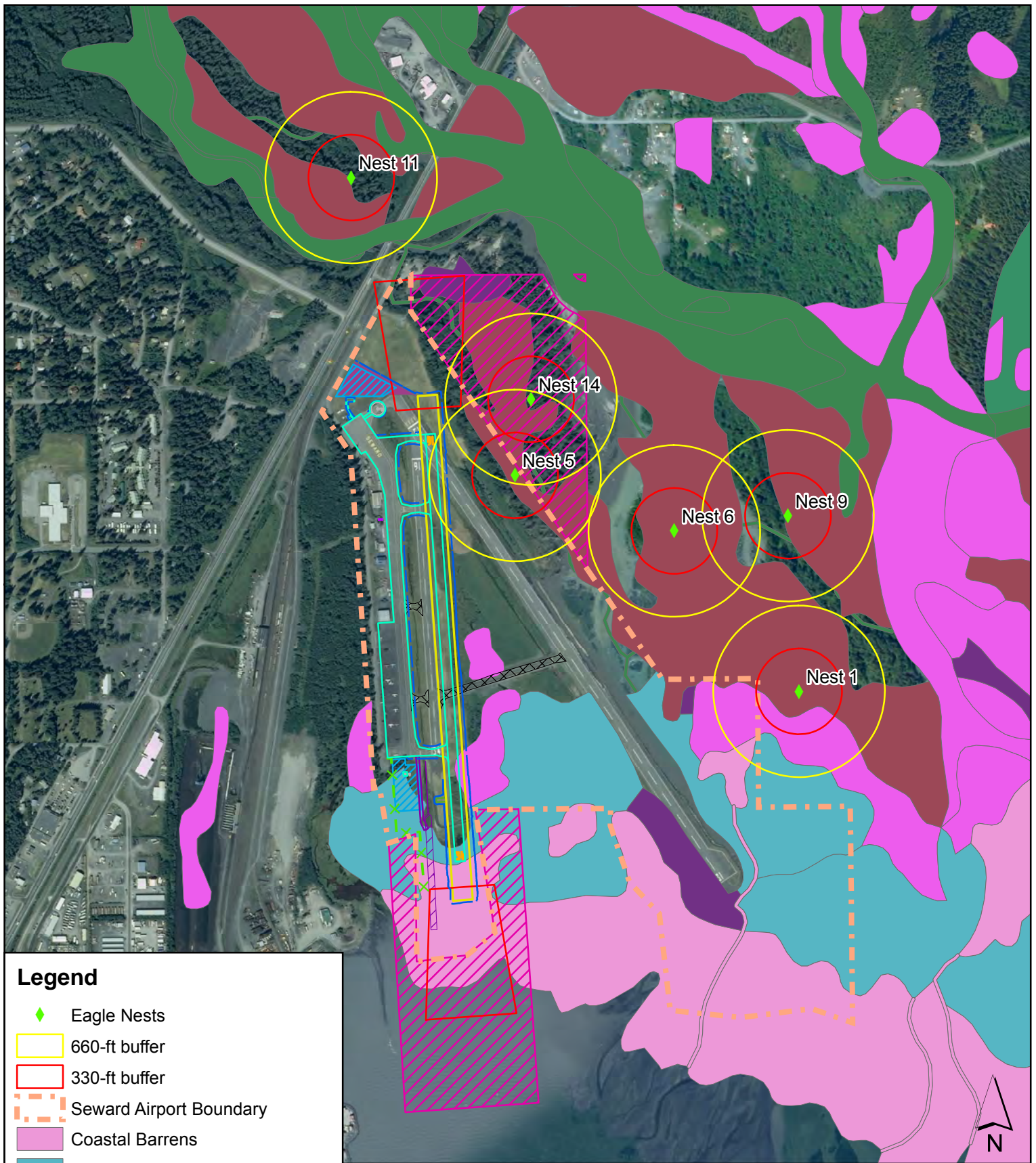
There are no Habitat Areas of Particular Concern (HAPC) or EFH Areas Protected from Fishing identified in the project area. Resurrection Bay is EFH for a number of species, but the bay is outside the project area ([NMFS 2017a](#)).

5.2.1.2 Endangered Species and Critical Habitat

According to the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) resources report and National Marine Fisheries Service (NMFS), Endangered Species Act (ESA), and Marine Mammal Protection Act (MMPA) Species Distribution Mapper, there are no ESA-listed species or Critical Habitat present within the project area ([USFWS 2017](#); [NMFS 2017](#)).

5.2.1.3 Migratory Birds and Eagles

According to local observations, diverse and dense numbers of migratory bird species have been observed within the proposed project area (Figure 3) ([USFWS 2017](#); [eBird 2017](#); [eBird 2017a](#); [Griswold 2017](#)). eBird, an online community reporting system run through the Cornell Lab of Ornithology and National Audubon Society, documents the presence of 163 different bird species in the proposed project area ([eBird 2017](#)). Thirty of these species are Birds of Conservation Concern (BCC) by the USFWS ([USFWS 2017](#); [USFWS 2008](#)).



Legend

- ◆ Eagle Nests
- 660-ft buffer
- 330-ft buffer
- Seward Airport Boundary
- Coastal Barrens
- Salt Marsh
- Pond
- River
- Riverbar
- Riverine Broadleaf Forest
- Tall Shrub Riverbar

0 1,000 2,000
Feet Feet

Seward, Alaska

Date: 11/2/2018

Figure: 3

State of Alaska

Department of Transportation and Public Facilities
Central Region



Seward Airport Improvements
Environmental Assessment

Biological Resources



The WAP identifies 88 bird species as Species of Conservation Need and 86 species as Species of Greatest Conservation Need because they are at-risk, stewardship (species with a high percentage of their North American or global populations in Alaska), culturally important, economically important, ecologically important, and/or a sentinel species (indicators of environmental change) (ADF&G 2015). Table 2 lists details of BCCs documented in the proposed project area. See Appendix D for a list of all the bird species documented in the proposed project area and their associated conservation levels.

Table 2 – BCCs Documented at the Seward Airport

| Bird Species | Source | BCC Listing | | | Life Stage Present | Habitat Type |
|---|------------------------|------------------|--------------|------------|----------------------|--|
| | | BCR ¹ | USFWS Region | Nat'l. BCC | | |
| Rufous Hummingbird (<i>Selasphorus rufus</i>) | USFWS; ebird | None | Region 7 | National | Breeding | Tall Shrub Riverbar, Riverine Tall Scrub, Lowland Tall Scrub |
| Black Oystercatcher (<i>Haematopus bachmani</i>) | USFWS; ebird | None | Region 7 | National | Breeding | Coastal Barrens |
| Upland Sandpiper (<i>Bartramia longicauda</i>) | Griswold | Region 4 | None | National | Breeding | Lowland Sedge-Shrub/Land Management Areas |
| Whimbrel (<i>Numenius phaeopus</i>) | Griswold; ebird | Regions 4, 5 | Region 7 | National | Migrating | Coastal Barrens, Lowland Sedge Meadow |
| Hudsonian Godwit (<i>Limosa haemastica</i>) | Griswold; ebird | 4, 5 | Region 7 | National | Breeding | Pond, Riverine Broadleaf Forest |
| Bar-tailed Godwit (<i>Limosa lapponica</i>) | Griswold | None | Region 7 | National | Migrating | Coastal Barrens, Salt Marsh, Lowland Sedge Meadow |
| Marbled Godwit (<i>Limosa fedoa</i>) | USFWS | Region 5 | Region 7 | National | Nesting | Pond, Coastal Barrens, Salt Marsh |
| Red Knot (<i>Calidris canutus roselaari</i>) | eBird | None | Region 7 | National | Migrating | Coastal Barrens, Salt Marsh |
| Dunlin (<i>Calidris alpina</i>) | Griswold | None | Region 7 | National | Wintering | Pond, Coastal Barrens, Salt Marsh, Lowland Sedge Meadow |
| Rock Sandpiper (<i>Calidris ptilocnemis</i>) | USFWS; Griswold | Region 4 | Region 7 | National | Wintering | Coastal Barrens |
| Semipalmated Sandpiper (<i>Calidris pusilla</i>) | Griswold; ebird | None | | National | Migrating | Coastal Barrens, Salt Marsh, Lowland Sedge Meadow |
| Short-billed Dowitcher (<i>Limnodromus griseus</i>) | USFWS; ebird; Griswold | Regions 4, 5 | Region 7 | National | Breeding | Pond, Riverine Broadleaf Forest, Salt Marsh |
| Solitary Sandpiper (<i>Tringa solitaria</i>) | Griswold; ebird | Regions 4, 5 | Region 7 | National | Breeding, Migration | Pond, River, Stream, Riverine Broadleaf Forest, Salt Marsh |
| Lesser Yellowlegs (<i>Tringa flavipes</i>) | USFWS; ebird; Griswold | None | Region 7 | National | Breeding | Pond, Coastal Barrens, Salt Marsh |
| Marbled Murrelet (<i>Brachyramphus marmoratus</i>) | USFWS; ebird | None | Region 7 | National | Year-round, Breeding | Riverine Broadleaf Forest, Riverine Tall Scrub, Salt Marsh, Lowland Tall Scrub |
| Kittlitz's Murrelet (<i>Brachyramphus brevirostris</i>) | USFWS; ebird | None | Region 7 | National | Breeding | River, Stream, Coastal Barrens |
| Aleutian Tern (<i>Onychoprion aleuticus</i>) | eBird | None | Region 7 | National | Breeding | Coastal Barrens |
| Caspian Tern (<i>Hydroprogne caspia</i>) | Griswold | Region 5 | None | | Breeding | Pond, River, Stream, Coastal Barrens |
| Arctic Tern (<i>Sterna paradisaea</i>) | Griswold; ebird | Region 5 | Region 7 | None | Breeding, Migrating | Pond, River, Stream, Coastal Barrens |
| Yellow-billed Loon (<i>Gavia adamsii</i>) | eBird | None | Region 7 | National | Wintering | Coastal Barrens (remains mostly in ocean waters and bays) |

¹Bird Conservation Region (BCR).



| Bird Species | Source | BCC Listing | | | Life Stage Present | Habitat Type |
|--|------------------------|------------------|--------------|------------|----------------------|--|
| | | BCR ¹ | USFWS Region | Nat'l. BCC | | |
| Red-faced Cormorant (<i>Phalacrocorax urile</i>) | eBird | None | Region 7 | None | Year-round, Breeding | Coastal Barrens (remains mostly in bays or sounds) |
| Pelagic Cormorant (<i>Phalacrocorax pelagicus pelagicus</i>) | USFWS; ebird | None | Region 7 | None | Year-round, Breeding | Coastal Barrens (remains mostly in open water of bays or sounds) |
| Bald Eagle (<i>Haliaeetus leucocephalus</i>) | USFWS; ebird; Griswold | Region 5 | None | National | Year-round, Breeding | Pond, River, Stream, Riverine Broadleaf Forest, Salt Marsh |
| Northern Goshawk (<i>Accipiter gentilis</i>) | Griswold | Region 5 | Region 7 | None | Year-round, Breeding | Riverine Broadleaf Forest |
| Short-eared Owl (<i>Asio flammeus</i>) | USFWS; ebird; Griswold | None | | National | Breeding | Salt Marsh, Lowland Sedge Meadow, Lowland Sedge-Shrub/Land Management Areas |
| Peregrine Falcon (<i>Falco peregrinus</i>) | Griswold | Regions 4, 5 | Region 7 | National | Year-round, Breeding | Pond, River, Stream, Riverbar, Riverine Broadleaf Forest, Tall Shrub Riverbar, Riverine Tall Scrub, Coastal Barrens, Salt Marsh, Lowland Sedge Meadow, Lowland Tall Scrub, Lowland Sedge-Shrub/Land Management Areas (generally near cliffs and water) |
| Olive-sided Flycatcher (<i>Contopus cooperi</i>) | USFWS | None | Region 7 | National | Breeding | Pond, Riverine Broadleaf Forest, Salt Marsh |
| Smith's Longspur (<i>Calcarius pictus</i>) | Griswold | Region 4 | Region 7 | National | Breeding | Riverine Broadleaf Forest, Lowland Sedge Meadow, Lowland Tall Scrub |
| McKay's Bunting (<i>Plectrophenax hyperboreus</i>) | Griswold; ebird | None | Region 7 | National | Wintering | Coastal Barrens |
| Rusty Blackbird (<i>Euphagus carolinus</i>) | Griswold; ebird | Region 4 | Region 7 | National | Year-round, Breeding | Pond, River, Stream, Riverbar, Riverine Broadleaf Forest, Tall Shrub Riverbar, Lowland Sedge Meadow |

Wetlands likely attract migratory birds to the proposed project area ([ADF&G 2015](#)). One hundred fifty-nine different bird species found in the area utilize wetlands, freshwater, and saltwater ponds and mud flat habitats ([eBird 2017](#)), and in 2016, 96 different bird species used the airport ponds ([DiMarzio 2016](#)). According to a representative from Alaska SeaLife Center, during migration (from mid-March to the end of May), bird species such as geese, shorebirds, and Sandhill Cranes rest at airport mud flats and ponds ([DiMarzio 2016](#)). Table 3 details the project area wetlands and the documented BCCs in the area that may use them.

The Seward Airport area is important habitat for migrating birds including Arctic Terns ([DiMarzio 2016](#); [Griswold 2017](#); [Olive 2017](#)). Seward resident birders and USFWS document an Arctic Tern nesting colony about 3,688 ft southeast of RW 13-31 ([Griswold 2017](#); [DiMarzio 2016](#); [USFWS 2004](#)). The nesting colony reportedly contains one Arctic Tern breeding colony, comprised of about 100 pairs, approximately 1,056 ft south of RW 16-34 (60.12461, -149.4205) and two sub-colonies, each containing about ten pairs: Sub-colony 1 is located between RWs 16-34 and 13-31 (60.12425, -149.4121), and Sub-colony 2 is approximately 157 ft southeast of RW 13-31 (60.12433, -149.4077) ([DiMarzio 2017](#)). This Arctic Tern nesting colony is important because Arctic Terns migrate a distance of "...10,000 miles or more...", and they utilize this area for courtship, incubation, and raising young through fledge ([Griswold 2016](#)).



There are other Arctic Tern nesting colonies in Eastern Kenai Peninsula and western Prince William Sound areas. According to the USFWS Beringian Seabird dataset, within the eastern Kenai Peninsula and western Prince William Sound area, there are 22 Arctic Tern nesting colonies, with more mapped within the Kenai Peninsula and Prince William Sound ([USFWS 2004](#)). The three nearest nesting colonies are located on Tern Lake, approximately 28 miles north of Seward Airport (60.53, -149.55), and within Harris Bay, two of which are approximately 32 miles southwest of Seward Airport (59.73, -149.89 and 59.77, -150.04) ([USFWS 2004](#)).

Table 3 – Project Area Wetlands and Documented BCCs That May Use Them

| Wetland Type ¹ | Documented Migratory Birds Likely Using the Areas |
|--|---|
| Pond (PUBH) | Hudsonian Godwit, Marbled Godwit, Dunlin, Short-billed Dowitcher, Solitary Sandpiper, Lesser Yellowlegs, Caspian Tern, Arctic Tern, Bald Eagle, Peregrine Falcon, Olive-sided Flycatcher, Rusty Blackbird |
| River (R2UBH) | Solitary Sandpiper, Kittlitz's Murrelet, Caspian Tern, Arctic Tern, Bald Eagle, Peregrine Falcon, Rusty Blackbird |
| Stream (R2UB3H) | Solitary Sandpiper, Kittlitz's Murrelet, Caspian Tern, Arctic Tern, Bald Eagle, Peregrine Falcon, Rusty Blackbird |
| Riverbar (R2US5A, R2USA) | Peregrine Falcon, Rusty Blackbird |
| Riverine Broadleaf Forest (PF01/SS1A) | Hudsonian Godwit, Short-billed Dowitcher, Solitary Sandpiper, Marbled Murrelet, Bald Eagle, Northern Goshawk, Peregrine Falcon, Olive-sided Flycatcher, Smith's Longspur |
| Tall Shrub Riverbar (PEM1/SS1A, PSS1/EM1A, PSS1A) | Rufous Hummingbird, Peregrine Falcon, Rusty Blackbird |
| Riverine Tall Scrub (PSS1C) | Rufous Hummingbird, Marbled Murrelet, Peregrine Falcon |
| Coastal Barrens (E1UBL, E2US2N, E2US3N, R1SB7R) | Black Oystercatcher, Whimbrel, Bar-tailed Godwit, Marbled Godwit, Red Knot, Dunlin, Rock Sandpiper, Semipalmated Sandpiper, Lesser Yellowlegs, Kittlitz's Murrelet, Aleutian Tern, Caspian Tern, Arctic Tern, Yellow-billed Loon, Red-faced Cormorant, Pelagic Cormorant, Peregrine Falcon, McKay's Bunting |
| Salt Marsh (E2EM1N, E2EM1P) | Bar-tailed Godwit, Marbled Godwit, Red Knot, Dunlin, Semipalmated Sandpiper, Short-billed Dowitcher, Solitary Sandpiper, Lesser Yellowlegs, Marbled Murrelet, Bald Eagle, Short-eared Owl, Peregrine Falcon, Olive-sided Flycatcher |
| Lowland Sedge Meadow (PEM1H) | Whimbrel, Bar-tailed Godwit, Dunlin, Semipalmated Sandpiper, Short-eared Owl, Peregrine Falcon, Smith's Longspur, Rusty Blackbird |
| Lowland Tall Scrub (PSS1B) | Rufous Hummingbird, Marbled Murrelet, Peregrine Falcon, Smith's Longspur |
| Lowland Sedge-Shrub/Land Management Areas (PEM1/SS1B, PSS1/EM1B, PEM1B) | Upland Sandpiper, Short-eared Owl, Peregrine Falcon |

See Figure 7 for a depiction of these wetland types in the proposed project area.

There are six bald eagle nests near the proposed project area ([UAS 2017](#)):

- ✈ Nest No. 5/Object ID 1865 is located within the airport property and is about 365 ft northeast of RW 13-31 and 535 ft east of the shifted RW 16-34 (60.1333, -149.4167)
- ✈ Nest No. 14/Object ID 1873 is approximately 370 ft east of the airport boundary, about 790 ft northeast of RW 13-31, and approximately 710 ft east of the new RW 16-34 (60.1349, -149.416)
- ✈ Nest No. 6/Object ID 1657 is approximately 700 ft northeast of the airport property boundary, about 1,125 ft northeast of RW 13-31 (60.1321, -149.41)
- ✈ Nest No. 11/Object ID 1661 is approximately 900 ft north of the airport boundary and about 1,620 ft north of RW 13-31 (60.1396, -149.4234)
- ✈ Nest No. 9/Object ID 1869 is approximately 1,500 ft northeast and across the Resurrection River from the airport boundary (60.1324, -149.4052)
- ✈ Nest No. 1/Object ID 1863 is approximately 350 ft east and across the Resurrection River from the airport and about 1,200 ft northeast of RW 13-31 (60.1287, -149.4048)



5.2.1.4 Invasive Species

Eight non-native plants have been recorded within or near the proposed project area: splitlip hempnettle (*Galeopsis bifida* Boenn.), fall dandelion (*Leontodon autumnalis* L.), bigleaf lupine (*Lupinus polyphyllus* Lindl. ssp. *Polyphyllus*), white deadnettle (*Lamium album* L.) bluejoint grass (*Calamagrostis canadensis*), polar grass (*Arctagrostis latifolia*), tufted hair grass (*Deschampsia caespitosa*), and glaucous bluegrass (*Poa glauca*) (UAA 2017; Davis and Pullman 2005).

5.2.2 Environmental Consequences of Alternatives

Significance Thresholds from FAA Order 1050.1F: *The U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat. The FAA has not established a significance threshold for non-listed species.*

Factors to Consider from FAA Order 1050.1F: *The action would have the potential for:*

- ✈ *A long-term or permanent loss of unlisted plant or wildlife species, i.e., extirpation of the species from a large project area (e.g., a new commercial service airport);*
- ✈ *Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) or their habitats;*
- ✈ *Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or*
- ✈ *Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance.*

5.2.2.1 Essential Fish Habitat

Removal of TW A will require instream work in an unnamed stream (AWC Code 231-30-10075) between RWs 16-34 and 13-31, potentially impacting EFH-containing spawning habitat for pink salmon. No HAPC or EFH Areas Protected from Fishing have been documented within the proposed project area, and thus none would be impacted.

5.2.2.2 Endangered Species and Critical Habitat

No ESA-listed or Critical Habitat occurs within the project; therefore, no adverse impacts to ESA-listed species and their habitats would occur.

5.2.2.3 Migratory Birds and Eagles

Thirty BCCs may be impacted by the Proposed Action due to impacts to habitat. A wetland functional assessment conducted at the airport in 2005 (Davis and Pullman 2005) and updated in 2016 (DOT&PF 2016) aggregated the 21 National Wetland Inventory (NWI) wetland types into 12 wetland habitats. (See Section 5.9.1 for details regarding these habitats.) Birds using Coastal Barrens, Salt Marsh, and Riverine Broadleaf wetland functional groups, which rank high for providing wildlife habitat, and Lowland Tall Scrub habitat, a wetland functional group which ranks moderate for providing wildlife habitat, would be impacted. The largest geographic area of BCC habitat that would be impacted is Lowland Sedge-Shrub/Land Management Areas, which ranks low for providing wildlife habitat. Impacts to these habitats and associated wildlife are detailed below. See Section 5.9.1.2 for details regarding wetland impact areas.



High-ranking BCC habitats would be impacted:

- ✈ BCCs using Coastal Barrens habitat would be impacted by the approximately 2.6 acres of wetland fill associated with the Proposed Action. Birds using the area as a migratory stopover (Whimbrel, Bar-tailed Godwit, Red Knot, Semipalmated Sandpiper, and Arctic Tern) would have a smaller area available for resting before continued travel. Species using the area for breeding (Black Oystercatcher, Lesser Yellowlegs, Kittlitz's Murrelet, Aleutian Tern, Caspian Tern, Red-faced Cormorant, Pelagic Cormorant, and Peregrine Falcon) would have less territory for courtship, pair bonding, and mating. Marbled Godwits would have less nesting habitat, and birds that use the area for wintering (Dunlin, Rock Sandpiper, Rock Sandpiper, and McKay's Bunting) would have less area available during colder weather. However, because the Proposed Action would result in filling only 0.015% of the approximately 17,900 acres of Coastal Barrens that exist at the head of Resurrection Bay, impacts to birds using this habitat would be minimal. Birds would be expected to move to the ample adjacent Coastal Barrens at the head of the bay.
- ✈ BCCs using Salt Marsh habitats would be impacted by approximately 0.7 acres of fill associated with the Proposed Action. Birds using the area for a migratory stopover (Bar-tailed Godwit, Red Knot, Semipalmated Sandpiper, and Solitary Sandpiper), would have less area to rest. Breeding birds (Short-billed Dowitcher, Lesser Yellowlegs, Marbled Murrelet, Bald Eagle, Short-eared Owl, Peregrine Falcon, and Olive-sided Flycatcher) would have less area for courtship activities. Species using the area for nesting and wintering, respectively, (Marbled Godwit and Dunlin) would have less available habitat. However, the impacts to BCCs would be minimal since only approximately 0.4% of the 196 acres would be filled.

Low-ranking BCC habitats would be impacted:

- ✈ The Proposed Action would impact approximately 21.5 acres of Lowland Sedge-Shrub/Land Management Area wetlands (a disturbed environment wetland), which rank low for wildlife habitat; therefore, birds using the area for breeding (Upland Sandpipers, Short-eared Owls, and Peregrine Falcons) could be impacted by the project. However, according to the airport wetlands functional analysis ([Davis and Pullman 2005](#)), Lowland Sedge-Shrub/Land Management Areas do not provide important wildlife habitat because vegetation is regularly cleared for airport maintenance and because the area is adjacent to active airport operations. The head of Resurrection Bay does not include other Lowland Sedge-Shrub/Land Management Areas because it is a wetland type that occurs as a function of airport maintenance activities. Impacts to birds using Lowland Sedge-Shrub/Land Management Area habitat would be minimal since these birds would be expected to move to other wetland habitats available at the head of the bay.

Small areas (0.133 acres or less) of low-, moderate-, and high-ranking habitats would be impacted:

- ✈ Ten species of breeding BCCs, two species of migrating BCCs, and one species of wintering BCCs would be impacted by 0.08 acres of fill in Pond habitat, which ranks low for wildlife habitat; however, about 17 acres of this habitat would remain open to these birds at the head of Resurrection Bay.
- ✈ Filling about 0.023 acres of Lowland Tall Scrub, which ranks moderate for wildlife habitat, would impact four species of BCCs using the area to breed. These BCCs would move to other habitats that they use, including Tall Shrub Riverbar and Riverine Broadleaf Forest.



- ✈ Nine species of breeding BCCs would be impacted by 0.013 acres of fill in Riverine Broadleaf Forest, which ranks high for wildlife habitat. However, this impact would be small compared to the approximately 385 acres of habitat available at the head of the bay where the birds are expected to move.

The Proposed Action is not expected to impact the Arctic Tern nesting colony located southeast of the airport, because it will follow USFWS construction timing guidelines and avoid work directly in this area. Given the available wetlands habitat that Arctic Terns use for breeding and migrating in this area, including 17 acres of Ponds, 752 acres of Rivers, and 17,904 acres of Coastal Barrens available in the Resurrection Bay area, these birds are expected to continue to use the area.

There are six bald eagle nests near the airport (see Figure 3). Nest #5 is within 660 ft of the RW 16-34 relocation and has the potential to be impacted by construction noise. Nests #14 and #5 are within 660 ft of possible tree clearing needed to ensure that safe approach distances are not obstructed by tall trees. Under the Bald and Golden Eagle Protection Act (Eagle Act), it is illegal to disturb a bald eagle or its nest. DOT&PF will conduct a field investigation prior to construction, and if any active nests are found, DOT&PF will consult with USFWS prior to construction. If work cannot be avoided within the 660-foot buffer area of an active nest during nesting season (February through mid-September) as required by the Eagle Act, an Eagle Nest Take permit may be required ([USFWS 2008](#)).

Of the 19,569.02 acres of bird habitats present at the head of Resurrection Bay, the proposed project is expected to impact 0.099% (25 acres) of them. Only about 3.5 acres of fill would occur within areas that provide high-quality wildlife habitat for birds and other wildlife. Given the volume of habitat present in the Seward Airport bay area, the Proposed Action would cause only a minor loss of bird habitat relative to the surrounding habitat available. No adverse impacts to wildlife population trends (reproduction and mortality rates) are expected. Impacts are not expected to occur to biological resources that have not been documented within the proposed project area. Under the No Action Alternative, there would be no change made to the main runway. Continued airport maintenance to repair and protect against flooding would continue in adjacent areas, which may result in continued disturbance to areas that are important to biological resources.

Table 4 – Environmental Consequences: Biological Resources

| Impact Category | Proposed Action | No Action |
|-----------------------------|---|---|
| Biological Resources | <p>The proposed project could impact habitat of 30 BCCs; however, habitat is not limited at the head of Resurrection Bay and birds are expected to move to other nearby locations. Minor impacts to EFH are expected where instream work occurs.</p> <p>The proposed project is anticipated to cause only minor loss to plants or wildlife, and it is not expected to impact ESA-listed species, their habitats, or wildlife population trends.</p> | <p>The No Action Alternative would not result in a change from current conditions.</p> <p>Continued flooding would result in continued airport maintenance activities in adjacent habitats.</p> |



5.2.3 Minimization and Mitigation

Careful consideration would be taken during design, project construction, and project maintenance to minimize and avoid impacts to the environment and wildlife. The following measures will be taken to minimize impacts to wildlife.

- ✈ The proposed project will avoid vegetative clearing, excavation, and placement of fill on or over functional bird habitat, including the Arctic Tern nesting colony, between May 1 and July 15, the USFWS Region 7 recommended time for land disturbance and vegetative clearing avoidance in southcentral Alaska ([USFWS 2017a](#)).²
- ✈ The proposed project will mitigate impacts to EFH through Best Management Practices, including 20-foot vegetated buffers around constructed embankments that reduce sedimentation in streams.

5.2.4 Consultation, Permits, and Other Approvals

The proposed project will comply with the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, ESA, Fish and Wildlife Coordination Act, Magnuson-Stevens Fishery and Conservation Management Act, MMPA, Alaska Fishway Act, and relevant Executive Orders. Consultations were conducted with federal, state, and local agencies with expertise and jurisdiction over biological resources potentially impacted by this project.

During the March 2, 2017, agency scoping meeting, ADF&G emphasized that fish entrapment issues should be considered during project design. ADF&G also stated that the Proposed Action was much more desirable than other alternatives from a fish habitat perspective. USFWS noted the need to identify active eagle nests in the environmental document and emphasized the importance of considering impacts of the project on nests. Meeting notes can be found in Appendix A.

ADF&G and USFWS provided written scoping comments regarding biological resources. ADF&G stated that it did not have wildlife concerns with the proposed project. USFWS commented that the project is following the recommended time period for avoiding land disturbance and vegetative clearing for nesting migratory species and is coordinating with USFWS for bald eagle nests, thus requiring no further comment. Detailed scoping comments for agencies are found in Appendix A.

A USFWS Eagle Nest Take permit may be required for this project. An ADF&G Fish Habitat Permit will be required for work within streams at the airport.

² The USFWS Region 7 recommended time for land disturbance and vegetative clearing avoidance in southcentral Alaska for eagles is March 1 through August 31 (USFWS 2017a); however, no eagle nests would be impacted directly within the project area.



5.3 Hazardous Materials, Solid Waste, and Pollution Prevention

5.3.1 Affected Environment

5.3.1.1 Hazardous Materials

Three sources of information were reviewed to assess the likelihood of encountering hazardous materials during construction of the Proposed Action. These included the Alaska Department of Conservation's Contaminated Sites Database, various Environmental Protection Agency (EPA) listings, and the Phase I Environmental Site Assessment performed previously for the Seward Airport property.

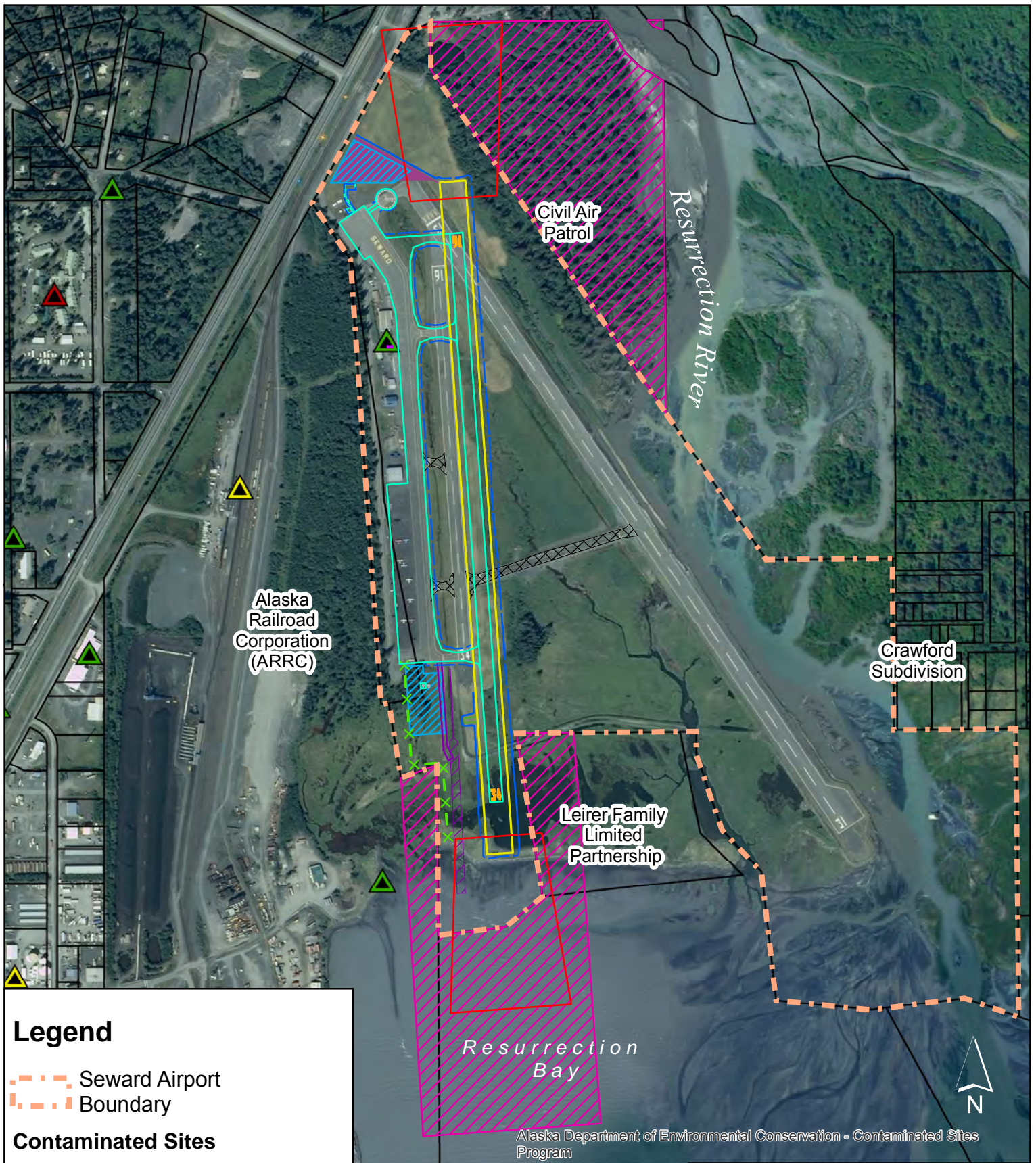
The ADEC Contaminated Sites database, accessed on December 16, 2015, showed 1 Active contaminated site located 1,700 ft west of Airport Road and off of airport property (Figure 4). There are three sites listed as Cleanup Complete near the airport and one listed as Cleanup Complete-Institutional Controls. Table 5 identifies these five sites. Only one of these, the Harbor Air Service site, is located on Airport property. Fifteen cubic yards of soil were removed near the hangar at the Harbor Air Service site in 1994 along with seven leaking fuel storage drums.

A review of the EPA's NPL and Resource Conservation and Recovery Act (RCRA) Corrective Actions Sites shows no sites located within or near the project area.

A Phase I Assessment of the airport property was performed in 2005 as part of the Seward Airport Master Plan EA. The report recommended no further action at the time but did also recommend that no subsurface activities occur around the FS Air building. This is the same site listed by ADEC as the Harbor Air Service site. Excavation near the septic system and abandoned fuel dispenser island has the potential to encounter contamination. No new spills have been documented by ADEC since that assessment.

Table 5 – Contaminated Sites in and Adjacent to the Project Area

| Site Name | File Number | Contamination Type | Approximate Location | Activity Status |
|---|-------------|--|--|---|
| Seward Military Resort | 2102.26.069 | Contaminated soil and groundwater at the site from a broken underground storage tank supply line | 1,700 ft west of Airport Road | Active |
| ARRC Seward Rail Yard | 2332.38.002 | Diesel range organic contamination from leaky heating oil underground storage tank | 880 ft west from the airport and 1,166 ft west of RW 16/34 | Cleanup Complete - Institutional Controls |
| ARRC Henderlong Building Seward | 2332.38.033 | Benzene and toluene were found in soil | 600 ft southwest of the airport and 1,265 ft from RW 16/34 | Cleanup Complete |
| Harbor Air Service | 2332.38.005 | Soil contamination from abandoned 55-gallon drums | 270 ft west of RW 16/34 | Cleanup Complete |
| City of Seward - Sewer Lift Station #4 | 2332.26.014 | Diesel range organic contamination from leaky underground storage tank | 2,000 ft northwest of Airport Road | Cleanup Complete |



Legend

--- Seward Airport
Boundary

Contaminated Sites

- ▲ Active
- ▲ Cleanup Complete
- ▲ Cleanup Complete - Institutional Controls
- ▲ Informational

0 375 750 1,500
Feet Feet

Seward, Alaska

Date: 11/2/2018

Figure: 4

State of Alaska
Department of Transportation and Public Facilities
Central Region



Seward Airport Improvements
Environmental Assessment
Contaminated Sites



5.3.1.2 Solid Waste

The Kenai Peninsula Borough operates a landfill in Seward as well as a Transfer Facility at the same location. The Seward Monofill/Landfill (SMF) serves 5,000 year-round residents from Seward to Moose Pass, accepts an estimated 3,100 CY annually and has a projected life of 25 more years. The site accepts municipal solid waste, appliances, scrap metal, junk vehicles, construction and demolition debris and some landscaping and wood. Construction/demolition debris is limited to 250 CY per job. If larger quantities are anticipated, written notification of the types and quantity of waste should be submitted to the Borough for determination of the disposal location. Disposal may be directed to the Central Peninsula Landfill in Soldotna. The cost for disposing of commercial waste at the SMF is \$360 per vehicle for 30-40 CY. The site also accepts recyclable materials including aluminum cans, corrugated cardboard, glass, mixed paper and newspaper.

5.3.1.3 Pollution Prevention

The Seward Airport does not currently use deicing chemicals or other compounds.

5.3.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention.*

Factors to Consider from FAA Order 1050.1F: *The action would have the potential to:*

- ✈ *Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;*
- ✈ *Involve a contaminated site (including but not limited to a site listed on the National Priorities List). Contaminated sites may encompass relatively large areas. However, not all of the grounds within the boundaries of a contaminated site are contaminated, which leaves space for siting a facility on non-contaminated land within the boundaries of a contaminated site. An EIS is not necessarily required. Paragraph 6-2.3.a of this Order allows for mitigating impacts below significant levels (e.g., modifying an action to site it on non-contaminated grounds within a contaminated site). Therefore, if appropriately mitigated, actions within the boundaries of a contaminated site would not have significant impacts;*
- ✈ *Produce an appreciably different quantity or type of hazardous waste;*
- ✈ *Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or*
- ✈ *Adversely affect human health and the environment.*

5.3.2.1 Hazardous Materials

The Proposed Action does not involve any property listed in the ADEC Contaminated Sites database or the NPL. Demolition of TWs A, D, and E will be accomplished by excavating down to existing disturbed ground, not below, thereby limiting the potential to encounter any residual contamination from the Harbor Air Service site. The float plane channel will require dredging. This dredging will occur approximately 400 ft east of the ARRC Henderlong Building site. The likelihood of encountering residual contamination from this site is expected to be very low.



5.3.2.2 Solid Waste

The Proposed Action should not result in any burden on the local landfill. Construction is expected to result in minimal waste, being largely limited to packing materials for lighting fixtures. Asphalt excavated from the existing RW 16-34 and TWs will be salvaged and utilized elsewhere on the project or be made available by DOT&PF for other projects.

5.3.2.3 Pollution Prevention

The project is not anticipated to produce potential pollutants. Construction of the proposed project may result in the temporary generation of sediment which can become airborne or be transported via surface water after rain events.

Table 6 – Environmental Consequences: Hazardous Materials, Solid Waste, and Pollution Prevention

| Impact Category | Proposed Action | No Action |
|---|--|---|
| Hazardous Materials, Solid Waste, and Pollution Prevention | The Proposed Action does not involve a property on the NPL and hazardous waste generation is not anticipated. Construction generated solid waste is not expected to exceed available landfill capacities. | The No Action Alternative would not result in a change from current conditions. |

5.3.3 Minimization and Mitigation

5.3.3.1 Hazardous Waste

The contractor will be required to develop a Hazardous Material Control Plan (HMCP) prior to construction which will identify procedures to follow should hazardous material be generated or encountered. If any contaminated materials are encountered, all work in the vicinity will be stopped until ADEC is contacted and a corrective action plan is approved.

5.3.3.2 Pollution Prevention

The contractor is required to develop a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. This plan will identify appropriate stockpile locations that adhere to local, State and Federal regulations as well as appropriate BMP's to ensure that sediment-laden water does not exit the project areas.

5.3.4 Consultation, Permits, and Other Approvals

Coverage under the APDES Construction General Permit for stormwater discharges will be secured before construction begins. Direct consultation with ADEC will be necessary if contamination is encountered during construction. Fees may apply for the disposal of construction debris.



5.4 Historical, Architectural, Archaeological, and Cultural Resources

5.4.1 Affected Environment

Based on a Cultural Resources Survey conducted in 2004 by Northern Land Use Research for the Seward Airport Master Plan effort, and presented in the 2008 Finding of No Significant Impact, the following sites are in the vicinity of the airport property:

- ✈ Site No. SEW-00148, associated with the Seward Moose Pass Trail (previously Iditarod National Historic Trail), runs discontinuously adjacent to the railroad; portions of this trail fell into disuse after the completion of the Alaska Railroad in 1923.
- ✈ Site No. SEW-00007 is associated with the Russian Trail dating back from the Russian Period; the exact location of this site has not been identified.
- ✈ Site No. SEW-00835, the Naval Radio Station, is located on the eastern bank of Resurrection River, east of the project area.

The SHPO determined these resources to be ineligible for the National Register of Historic Places. SHPO concurred with the finding that no historic properties would be affected by the proposed improvements in the Seward Airport Master Plan. This concurrence was received on March 7, 2007.

Figure 5 shows the Area of Potential Effect (APE) for the 2008 master plan as well as the new APE proposed for this project. The new APE includes property acquisitions at the northern and southern edge of the airport property to accommodate the new RPZ for the expanded RW 16-34. The entire Civil Air Patrol parcel to the north is being acquired so as not to leave the Civil Air Patrol with an inaccessible remnant parcel.

5.4.2 Environmental Consequences of the Alternatives

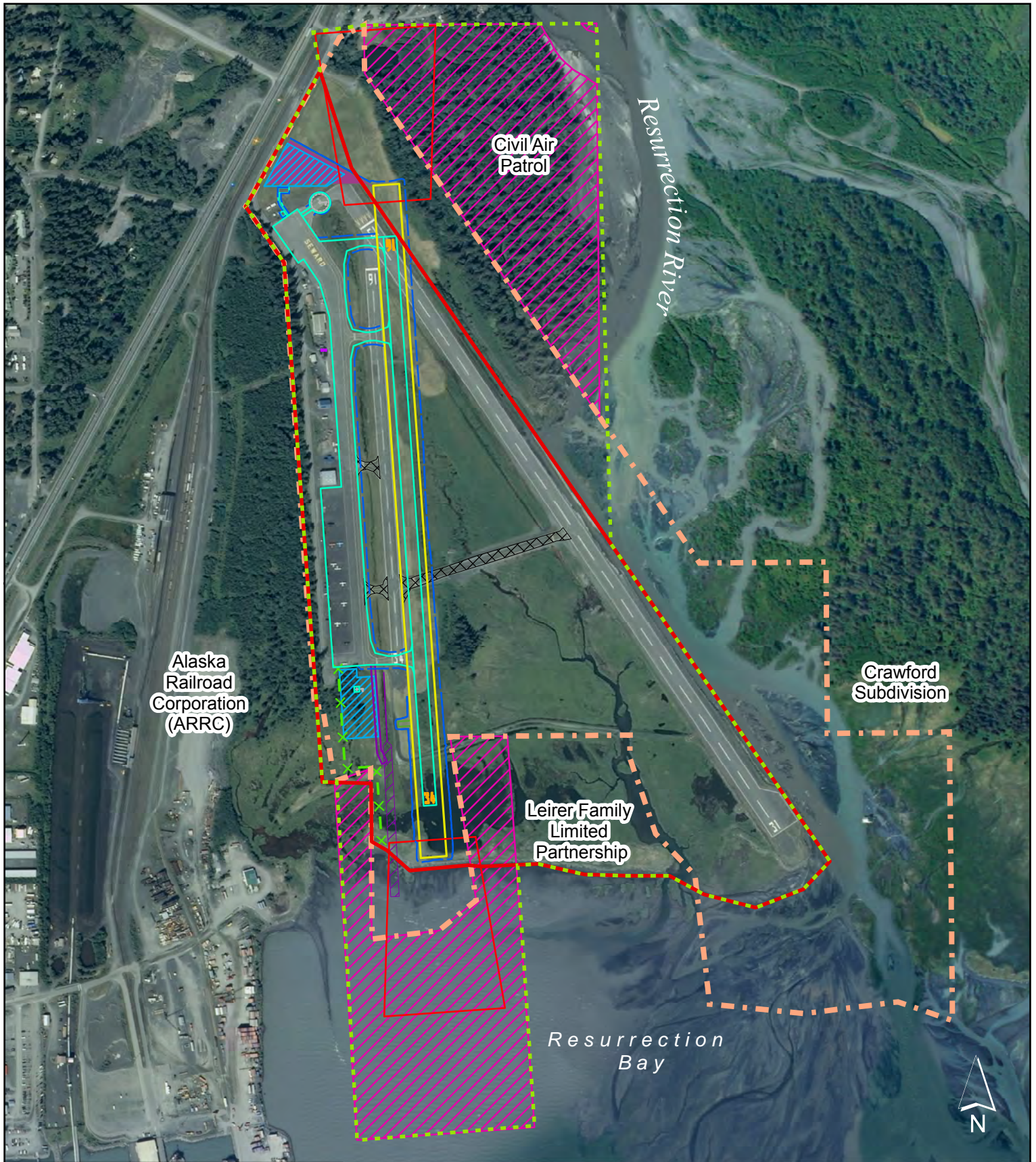
Significance Thresholds from FAA Order 1050.1F: *The FAA has not established a significance threshold for Historical, Architectural, Archeological, and Cultural Resources.*

Factors to Consider from FAA Order 1050.1F: *The action would result in a finding of Adverse Effect through the Section 106 process. However, an adverse effect finding does not automatically trigger preparation of an EIS (i.e., a significant impact).*

The APE includes the area to be acquired to accommodate the expanded RPZs for RW 16-34. Tree clearing will be required within this area to eliminate airspace obstructions. The project is not expected to impact SEW-00148.

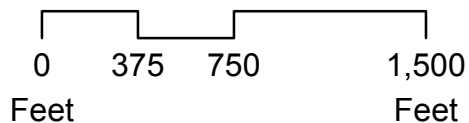
The Alaska Heritage Resources Survey (AHRS) card for Site No. SEW-00007 confirms that cultural resource surveys performed in 2005 and 2013 surveys did not find any trace of the trail where located on the Alaska Department of Natural Resources, Office of History and Archaeology (OHA) map. The 2005 survey performed by Northern Land Use Research of Alaska, LLC (NLURA) determined that it was unlikely the remnants of an old road at the southern end of the property were related to SEW-00007. This survey also looked into the reports that the homestead of one of Seward's first recorded families was located on airport property. It was confirmed that the homestead had been located on a portion of the airport property but that the 1964 Alaska earthquake and the resulting tidal waves and subsidence had eliminated any physical traces of the homestead.

The remnants of SEW-00835 are located outside the APE and will not be impacted by the proposed project.



Legend

- 2018 Preliminary APE
- 2008 APE
- Seward Airport Boundary



Seward, Alaska

Date: 11/2/2018

Figure: 5

State of Alaska
Department of Transportation and Public Facilities
Central Region



Seward Airport Improvements
Environmental Assessment
Area of Potential Effect



**Table 7 – Environmental Consequences:
Historical, Architectural, Archaeological, and Cultural Resources**

| Impact Category | Proposed Action | No Action |
|--|---|-----------|
| Historical, Architectural, Archaeological, and Cultural Resources | A finding of “no historic properties affected” was submitted to SHPO on June 5, 2018. Concurrence was received June 14, 2018. | No effect |

5.4.1 Minimization and Mitigation

If any cultural, archaeological, or paleontological resources are found during construction, the Contractor shall cease operations in the area and SHPO will be notified. No artifacts or specimens shall be disturbed or removed and no further operations performed in the area until directed by DOT&PF.

5.4.2 Consultation, Permits, and Other Approvals

DOT&PF has initiated consultation with the following parties: SHPO, City of Seward, Chugachmiut, Inc., Resurrection Bay Historical Society, and Qutekcak Native Tribe. SHPO provided concurrence with DOT&PF’s finding of no historic properties affected on June 14, 2018. No comments have been received from other consulting parties.

5.5 Land Use

5.5.1 Affected Environment

The Seward Airport’s existing property is located in the northeast section of the City of Seward within the city limits. DOT&PF owns the Seward Airport property with the exception of a triangular section on the west side of the airport property which is leased from the Alaska Railroad Corporation (ARRC). This property contains tie-down areas and a portion of the lease lots. Properties adjacent to the existing airport boundary consist of industrial, resource management, and mostly undeveloped parcels across Seward Highway. The tideland areas to the south of the airport are owned by the City of Seward. The following chart summarizes land uses adjacent to the Seward Airport.

Table 8 – Seward Airport, Adjacent Land Uses

| Direction | Owner | Land Use |
|---------------------------------|---|--|
| West/Southwest | Alaska Railroad Corporation | Industrial: Railroad |
| Northwest/North | Across Seward Highway: • City of Seward • Private, various | • Institutional: undeveloped • Auto Commercial: undeveloped |
| Northeast/East/Southeast | • Civil Air Patrol (Federal) • Private, various • City of Seward | <i>*All parcels in this area are within the Resurrection River floodplain</i> • Resource management: undeveloped • Resource management: multiple residential parcels, undeveloped • Industrial: undeveloped |
| South | • Leirer Family Limited Partnership, private • City of Seward • DNR | • Industrial: undeveloped • Tidelands |



In 2014, ARRC developed a master plan for its Seward port facilities. The current Site Plan, last updated in the summer of 2017, proposes the use of a storage pad for the area just west of the Seward Airport boundary. In addition, just south of the Airport boundary, there is a plan to build a new freight dock into Resurrection Bay.

A southern parcel privately owned by Leirer Family Limited Partnership is a popular birding area and considered important habitat for many bird species (see Section 5.2 for more details). This parcel is zoned Industrial, which the Municipal Code defines as: *Established as a district in which the principal use of land is for business, manufacturing, processing, fabricating, repair, assembly, storage, wholesaling and distributing operations, which may create some nuisance and which are not properly associated nor compatible with residential land uses. It is intended to provide environmental safeguards for people employed in or visiting the district. Some visual amenity is expected in this district to make it compatible with adjoining residential or business districts.*

This parcel represents a potential wildlife hazard given its proximity to the airport. A search of the FAA Wildlife Strike Database found only one recorded bird strike since 1980. The incident occurred in 1995 and while no damage was reported, the pilot documented striking 2 to 10 birds out of 11 to 100 seen.

The Seward Transfer Facility and Monofill/Landfill are located approximately 7,600 ft northwest of the airport. The Lowell Point Wastewater Treatment Facility, including sewage lagoon, is located over 3.5 miles southwest of the airport. There are no designated refuges, critical habitat areas or sanctuaries within or adjacent to the proposed project area. The Chugach National Forest is about 1 mile from the proposed project area. Kenai Fjords National Park is approximately 4 miles from the proposed project area, and Caines Head State Recreation Area is about 7 miles from the proposed project area. DOT&PF does not anticipate the proposed project would result in any adverse impacts to these parks, forests, or recreational areas.

5.5.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The FAA has not established a significance threshold for Land Use.*

Factors to Consider from FAA Order 1050.1F: *There are no specific independent factors to consider for Land Use. The determination that significant impacts exist in the Land Use impact category is normally dependent on the significance of other impacts.*

As of the writing of this document, ARRC has drafted a Site Plan for its rail-port facilities, which include development of a new freight dock on an ARRC-owned parcel adjacent to the airport. Through the public involvement process, ARRC voiced concern that development of the Proposed Action would result in airspace restrictions that could affect proposed freight development. At their request, DOT&PF has provided ARRC with contoured airspace maps detailing the height restrictions that would accompany development of the Proposed Action. These restrictions are limited to the placement of structures such as very tall light poles, cranes, etc., which could penetrate the restricted airspace heights.



The Proposed Action would result in the acquisition of property north and south of the airport boundary to accommodate the Transitional Surfaces as well as the RPZ. See Figure 6 for locations. These acquisitions do not conflict with current zoning and future land use as adopted in the 2030 Seward Comprehensive Plan. The southern parcel, privately owned by Leirer Family Limited Partnership, is adequately zoned (i.e., “industrial”) for airport facility use. DOT&PF would acquire 6.28 acres in fee (fee simple). The adjacent ARRC property is similarly zoned. DOT&PF would enter into a long-term lease with ARRC for an additional 5.88 acres to account for the new area to the south as well as extend the existing lease for the apron. The northern property is owned by Civil Air Patrol and is zoned for Resource Management which is defined in the Municipal Code as: *Lands which are generally undeveloped and cannot be precisely zoned due to inadequate information on the extension of public services and utilities; the suitability of the land to support commercial, residential, industrial or public uses; and other possible environmental consideration.* DOT&PF would acquire the entire 39-acre parcel in fee (fee simple). The remainder of the parcel is within the Resurrection River floodway and would be of diminished value to the owner now that access to the highway is cutoff. The full parcel acquisition will allow direct access to the river in the future should additional flood mitigation be needed, and the purchase will ensure that trees are not cut down thereby adding to the prevention of streambank erosion near the airport. 10.94 acres of tidelands owned by the City of Seward will also be acquired in fee (fee simple).

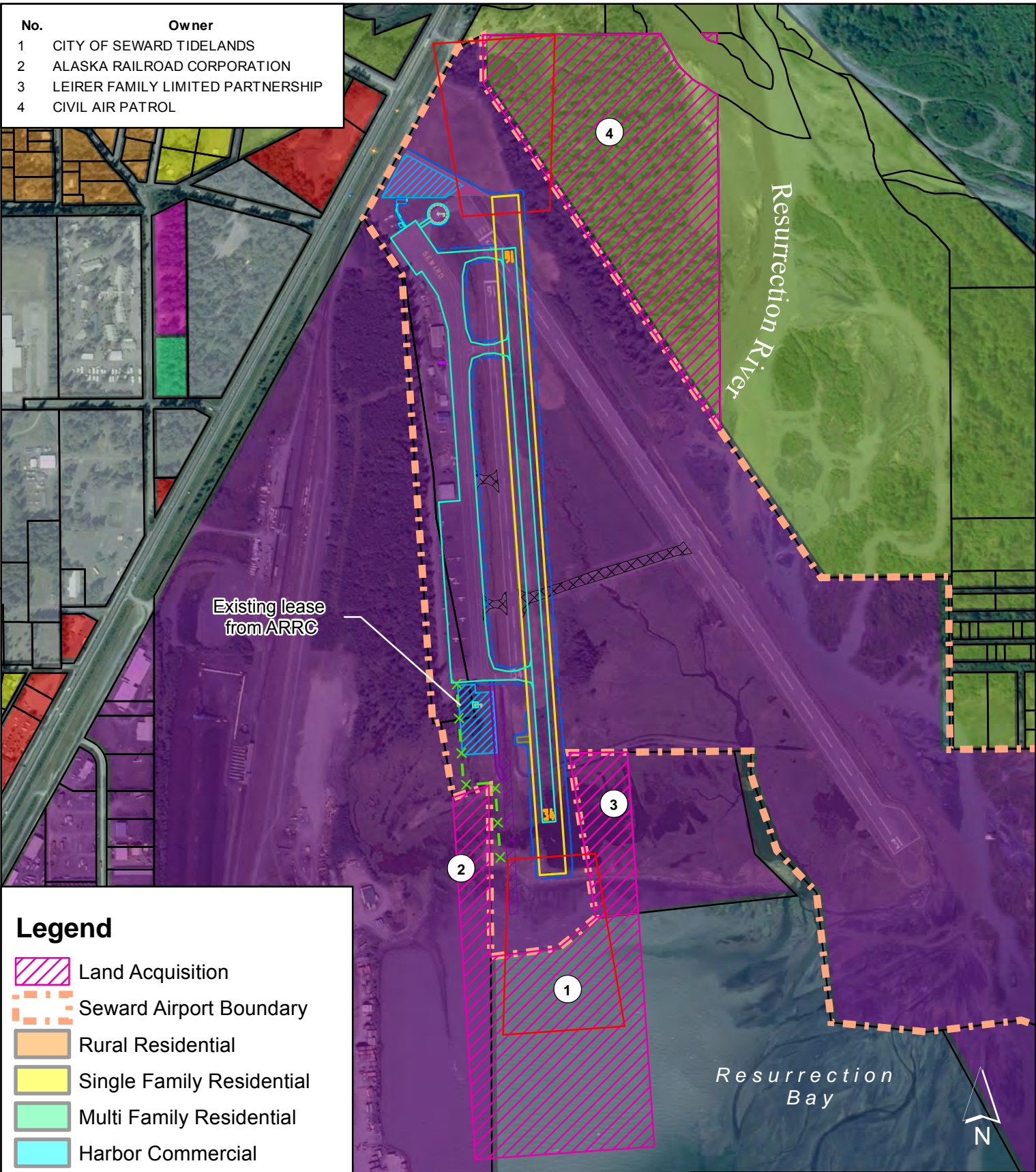
Noise-compatible land uses surround the airport boundary, including Industrial (i.e., rail-port), Resource Management (i.e., Resurrection River), and Auto-Commercial land uses. See Section 5.7 for further discussion of Noise and Noise-Compatible Land use.

Extension of RW 16-34 and the RW Protection Zone into airport-owned land to the south will require asphalt, base material, and riprap fill into wetlands, which may harm existing ground-nesting avian communities in the area. It will also cut off access by local birders to popular bird-watching area located on the parcel owned by the Leirer Family Limited Partnership. The current practice of crossing near the end of RW 16-34 to access this property represents a safety concern as it currently involves crossing an active RW. Fencing to deter this activity will have a potential positive impact on safety but will likely be considered a negative impact to bird watchers looking to access this area. The practice of crossing an active RW also violates FAA Land Use Compliance regulations, jeopardizing future FAA funding for this airport if not corrected. See Section 5.2 for a discussion of impacts to biological resources and Section 5.8 for a discussion of socioeconomic impacts.

The Proposed Action will not decrease the distance from the airport to the municipal landfill to the northwest. The Proposed Action would decrease the distance between the airport and the sewage lagoons to the southeast however the distance remains well beyond the 10,000-foot separation guideline established by FAA.

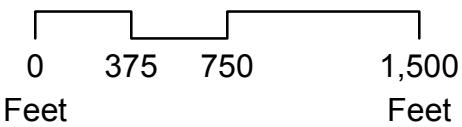
There is no identified inconsistency with approved state and/or local plans and laws.

| No. | Owner |
|-----|-----------------------------------|
| 1 | CITY OF SEWARD TIDELANDS |
| 2 | ALASKA RAILROAD CORPORATION |
| 3 | LEIRER FAMILY LIMITED PARTNERSHIP |
| 4 | CIVIL AIR PATROL |



Legend

- Land Acquisition
- Seward Airport Boundary
- Rural Residential
- Single Family Residential
- Multi Family Residential
- Harbor Commercial
- Auto Commercial
- Industrial
- Institutional
- Park
- Resource Management



Seward, Alaska

Date: 11/2/2018 Figure: 6

State of Alaska
Department of Transportation and Public Facilities
Central Region



Seward Airport Improvements
Environmental Assessment

Land Use Map



Table 9 – Environmental Consequences: Land Use

| Impact Category | Proposed Action | No Action |
|-----------------|---|---|
| Land Use | The Proposed Action is consistent with local zoning codes. Noise impacts on adjacent land uses are not expected to change from current conditions. Separation distances from the nearest sewage lagoon will continue to meet the 10,000-foot separation guidelines. The local landfill will remain approximately 7,600 ft northwest of the airport. The project will increase safety by deterring bird watchers from crossing the active air operations area. | The No Action Alternative would not result in a change from current conditions. |

5.5.3 Minimization and Mitigation

No minimization or mitigation requirements have been identified for the Proposed Action. No major changes in compatible land use are anticipated.

5.5.4 Consultation, Permits, and Other Approvals

A tidelands survey has been completed for the southern portion of the airport including the area to be acquired as part of the project. The determination of the tideland boundary will identify whether a property is needed from the City of Seward. DOT&PF will negotiate with the ARRC, Civil Air Patrol, the Leirer Family Limited Partnership, and the City of Seward for the acquisition of the area needed to secure the new RPZ and airspace protection. All non-aeronautical uses of airport property, including accessing bird watching sites which requires crossing airport property, must be permitted by the department. Otherwise they are considered non-compliant.

5.6 Natural Resources and Energy Supply

5.6.1 Affected Environment

Electricity is provided to Seward Airport by the City of Seward's electric system. The system purchases power from Chugach Electric and maintains high-capacity generators to provide backup power as needed. Electricity is available to all lease lots at the airport as well as to the electrical equipment building, which houses the regulator and controls for the medium-intensity RW and TW edge lighting system.

The City of Seward operates a public drinking water system and a public sewage system, although neither service is available at the airport. Solid waste is collected at the airport by Seward Disposal Service and transported to the Seward Monofill/Landfill.

The primary fuel supplier in Seward is Shoreside Petroleum, which has six fuel tanks with a capacity of 120,000 gallons each. The City of Seward has an additional 40,000 gallons of fuel capacity, and there are 68,000 gallons of storage capacity available elsewhere in the community. A local fixed-base operator, Seward Air, maintains 5,000 gallons of Jet A and 5,000 gallons of 100LL fuel for purchase at the airport.

Material sources near Seward Airport include a commercial operation run by Metco, Inc., located less than a mile north of the airport on an island in the Resurrection River, and the Seward Rock Quarry, administered by the KPB Land Management Division and located approximately 1.8 miles northwest of the airport and adjacent to the Resurrection River. The



Metco operation extracts gravel from the Resurrection River floodplain. The river recharges the excavated quantities, thereby providing a nearly unlimited supply. The Seward Rock Quarry is a 30-acre parcel owned by the KPB that contains an existing quarry into an exposure of sandstone rock. Testing confirms that rock from the quarry is suitable for ([HDL 2009](#)):

- ✈ Riprap class I, II, III, and IV
- ✈ Ditch lining
- ✈ Aggregates
- ✈ Shore protection rock products
- ✈ Crushed aggregate surface course

5.6.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The FAA has not established a significance threshold for Natural Resources and Energy Supply.*

Factors to Consider from FAA Order 1050.1F: *The action would have the potential to cause demand to exceed available or future supplies of these resources.*

The change from the existing 4,500-foot RW and 2,289-foot RW to the single 3,300-foot RW in the Proposed Action will reduce the number of edge lights. Upgrades in lighting technology in the new lights as compared to the existing fixtures will further reduce electricity needs. Therefore, the Proposed Action would not cause an increase in demand to the Seward electric system supply.

The Proposed Action will need approximately 140,000 CY of fill material. Fill material is not in short supply in Seward, and potential material sources are close to the airport. Existing material within the project may be re-used, and any excavated material not utilized as part of the Proposed Action will be made available for future projects.

The Proposed Action will result in closing RW 13-31, which has a longer taxiing distance to reach the apron. An increase in airport traffic is also not expected as a result of the project. As a result of taxi time reduction and the Proposed Action not contributing to an increase in air operations, no increase in fuel consumption is expected and no impact on the availability of fuel supplies at the airport is anticipated.

Table 10 – Environmental Consequences: Natural Resources and Energy Supply

| Impact Category | Proposed Action | No Action |
|-------------------------------------|---|---|
| Natural Resources and Energy Supply | No impact to the Seward electric system's supply is anticipated as a result of new airport lighting generating an increase in demand. Fill material in nearby commercial operations is sufficient for the project and is not expected to require new operator permits or expand existing material site boundaries. Fuel demand at the airport is not anticipated to increase. | The No Action Alternative would not result in a change to current energy consumption levels or fill material needs. |

5.6.3 Minimization and Mitigation

A phasing plan is currently being developed to prioritize utilization of excavated material from portions of the Proposed Action as fill for the relocated RW as much as possible. This will reduce the amount of new material needed.



5.6.4 Consultation, Permits, and Other Approvals

The Contractor will be responsible for all necessary permits and clearances to secure material from the commercially available sources. No other consultations, permits or approvals are anticipated at this time.

5.7 Noise and Noise-Compatible Land Use

5.7.1 Affected Environment

Noise-compatible land uses surround the airport boundary, including Industrial (Alaska Railroad Corporation), Resource Management (Resurrection River floodplain), and Auto Commercial (highway-oriented commercial activities) zoning districts. Residential land uses exist within 1,500 ft of the airport boundary but are not directly adjacent to the airport being separated by one of the zoning districts mentioned above. See Figure 6 for adjacent land uses.

5.7.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The action would increase noise by Day-Night Average Sound Level (DNL) 1.5 decibel (dB) or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.*

Factors to Consider from FAA Order 1050.1F: *Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) where the land use compatibility guidelines in 14 CFR part 150 are not relevant to the value, significance, and enjoyment of the area in question. For example, the DNL 65 dB threshold does not adequately address the impacts of noise on visitors to areas within a national park or national wildlife and waterfowl refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute.*

According to the FAA 1050.1F Desk Reference ([FAA Office of Environment and Energy 2015](#)), no noise analysis is required for projects involving Design Group I and II airplanes in Approach Categories A through D operating at airports whose forecast operations in the period covered by the National Environmental Policy Act (NEPA) document do not exceed 90,000 propeller operations or 700 jet operations. Seward Airport is currently classified as a Design Group II facility with Approach Category B. Forecast operations for the airport total 12,856 operations over 15 years. Reports by the airport manager indicate that up to 20 small jet operations occurred annually until 2012, when weight restrictions placed on the main RW reduced that number to zero. Future potential demand does not warrant a longer RW, and thus small jet operations are anticipated to remain at zero. For more details on the forecast, see the Scoping Report (available at <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>). The projected operations for Seward Airport do not approach the above-stated operational thresholds. The Proposed Action will also not increase the Design Group or Approach Category designation of the airport. Therefore, no noise analysis will be prepared.



The low level of activity at the airport and an absence of noise complaints by residents indicate that noise has not been an issue in the area. A review of state and federal agency protected areas in Alaska and the City of Seward park locations found that the project area and adjacent lands do not include any public parks, recreation areas, or wildlife and waterfowl refuges of national or state significance or land from a historic site of national, state, or local significance. The property owned by the Leirer Family Limited Partnership at the southern edge of the airport property is a popular bird-watching area of local significance. See the Land Use section (5.5) and the Biological Resources section (5.2) for more details about the significance of this area. Given its current proximity to the airport, this bird-watching area has always been subject to airport noise and therefore would be hard to categorize as an area where noise is very low and a quiet setting is recognized as a purpose and attribute. The Proposed Action will move RW 16-34 approximately 800 ft closer to this bird-watching area.

Table 11 – Environmental Consequences: Noise and Noise-Compatible Land Use

| Impact Category | Proposed Action | No Action |
|-------------------------------------|---|---|
| Noise and Noise-Compatible Land Use | The Proposed Action would result in short-term increases in noise associated with construction activities. Long-term noise increases are not anticipated, as the Proposed Action will not result in more frequent aircraft operations or a significant change in aircraft type. Noise levels may increase at the bird-watching area at the southern edge of the airport property, but this effect is not anticipated to exceed the threshold of significance. | The No Action Alternative would not result in a change from current conditions. |

5.7.3 Minimization and Mitigation

The Proposed Action is not anticipated to cause an overall increase in noise limits, and therefore no mitigation or minimization is proposed. Construction will likely result in increased noise levels at the airport, but this is not expected to affect adjacent properties.

5.7.4 Consultation, Permits, and Other Approvals

No further consultation, permits, or approvals associated with noise impacts are expected.

5.8 Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks

5.8.1 Socioeconomics

5.8.1.1 Affected Environment

Seward is located at the head of Resurrection Bay at the mouth of the Resurrection River. It is located on the east coast of the Kenai Peninsula and lies at the foot of Mount Marathon. Seward is 125 miles south of Anchorage, to which it is connected via the Seward Highway and the ARRC. Seward is also home to a 900-foot-deep port that serves cruise ships, cargo barges and ocean freighters.

The city was founded in 1903 as the port terminus for the railroad that linked the coast to Interior Alaska. The town grew rapidly as a military post during World War II. The population fell substantially after the 1964 Great Alaska Earthquake. Seward saw another influx of



residents in the 1970s and 1980s in response to the construction of the Alyeska Trans-Alaska Oil Pipeline. The population in 2015 was estimated at 2,740 people ([PDC Engineers 2017](#)). The city's racial composition is similar to Alaska's statewide racial composition. Seward's racial composition is impacted by the presence of the Spring Creek Correctional Center, which opened in 1988 and can house 412 inmates. The median age of Seward's population is 38, with 62% of the population being male. Excluding the all-male inmates at the Spring Creek Correctional Center, the male population is 52.5%, which matches the state's average of 52%.

As a rail and port terminal, Seward connects passengers and cargo with the rest of Alaska. The related trade and transportation services are supported by the Alaska Vocational Technical Center and the Seward Marine Industrial Center. The local scenery and proximity to popular tourist destinations contribute to a growing tourism sector. State and federal lands that serve as tourist destinations employ state and federal employees. The Alaska SeaLife Center and the Institute of Marine Science provide a connection to the University of Alaska and help bring state and federal research funds to the community.

5.8.1.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The FAA has not established a significance threshold for Socioeconomics.*

Factors to Consider from FAA Order 1050.1F: *The action would have the potential to:*

- ✈ *Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);*
- ✈ *Disrupt or divide the physical arrangement of an established community;*
- ✈ *Cause extensive relocation when sufficient replacement housing is unavailable;*
- ✈ *Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;*
- ✈ *Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; or*
- ✈ *Produce a substantial change in the community tax base.*

The Proposed Action includes property acquisition north and south of the airport boundary, neither of which would affect socioeconomic considerations. The existing main RW (RW 13-31) is under a weight restriction due to flood damage, and RW 16-34, at approximately 2,300 ft, is shorter than the 3,300-foot minimum RW length to accommodate current aircraft needs. The Proposed Action will provide a RW that satisfies the current and forecast future needs of the airport, including medevac operations. This will relieve the current restrictions for use at the Seward Airport.

During the public involvement process, the City of Seward voiced concerns about potential limitations on economic growth, especially to the tourism and industrial sectors, if a 4,500-foot RW was not available for small jet operations. The Proposed Action consists of a 3,300-foot RW, but will also include the necessary property acquisition and planning for a potential future RW extension to 4,000 ft.

During construction, the airport would remain open for public use. Flight schedules and number of aircraft operations are expected to remain the same. Vehicular traffic would not be re-routed. The Proposed Action would keep the airport at the same location it has occupied since at least 1962, when the current RWs were paved.



This project is in alignment with the Airport Master Plan (2008) and the Seward 2030 Comprehensive Plan (2017), both of which had a significant public process consisting of multiple public meetings where comments were gathered. No disruption to the physical arrangement of the community will occur. Neither alternative would displace residents, result in residential or business relocation, or cause loss of employment.

Table 12 – Environmental Consequences: Socioeconomics

| Impact Category | Proposed Action | No Action |
|-----------------------|--|-----------|
| Socioeconomics | The Proposed Action is not anticipated to adversely affect socioeconomic considerations, including economic growth, physical arrangement of the community, relocation of residents and businesses, local traffic patterns, and the community tax base. | No effect |

5.8.1.3 Minimization and Mitigation

No adverse socioeconomic impact is anticipated from the proposed project; therefore, mitigation is not prescribed.

5.8.1.4 Consultation, Permits, and Other Approvals

No consultations, permits, or other approvals are anticipated for the proposed project.

5.8.2 Environmental Justice

5.8.2.1 Affected Environment

As mentioned previously, the city of Seward has a racial composition similar to Alaska's statewide racial composition. A majority of the population (69%) is white, with American Indian/Alaska Native as the second largest racial group (17%), and 8% of the population comprised of two or more races.

Per capita income in 2014 was \$30,076; the median household income was \$49,432; and median family income was \$69,158. The largest percent of household and family incomes are within the \$50,000 to \$74,999 income. The median household income for Alaska in 2014 was estimated as \$68,562, while per capita income was \$33,100. An estimated 5.5% of the population in Seward is below the poverty level.

5.8.2.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The FAA has not established a significance threshold for Environmental Justice.*

Factors to Consider from FAA Order 1050.1F: *The action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population, due to:*

- ✈ Significant impacts in other environmental impact categories; or
- ✈ Impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population.



The Proposed Action would not affect distinct low-income or minority populations. There are not significant numbers of these environmental justice populations in or near the project area. Further, implementation of the Proposed Action does not include any impacts that would affect nearby neighborhoods. Refer to the Land Use Map (Figure 6) for a representation of land uses surrounding the Project Area. Both the proposed and no-action alternatives are consistent with Executive Order 12898, requiring federal actions to address environmental justice in minority and low-income populations.

Table 13 – Environmental Consequences: Environmental Justice

| Impact Category | Proposed Action | No Action |
|------------------------------|---|-----------|
| Environmental Justice | The Proposed Action will not disproportionately affect environmental justice populations. | No effect |

5.8.2.3 Minimization and Mitigation

No adverse impacts to environmental justice populations are anticipated from the proposed project; therefore, mitigation will not be required.

5.8.2.4 Consultation, Permits, and Other Approvals

No consultations, permits, and other approvals are anticipated from the proposed project.

5.8.3 Children's Environmental Health and Safety Risks

5.8.3.1 Affected Environment

Seward schools are part of the Kenai Peninsula Borough School District. The city is home to the Seward Elementary, Middle, and High schools. Slightly less than 10% of Seward's population is comprised of school age children or younger (under 18). The Providence Seward Medical Center is the only hospital in Seward and provides emergency services. The city is also served by the Seward Community Health Center, which provides urgent care, family medicine, and minor office procedures. Air transportation of patients between Seward and Anchorage is fairly common. The local volunteer ambulance service in Seward does not have enough staff to transport patients to Anchorage. Fixed-wing aircraft and helicopters are typically used for medevac transport. However, should the airport not be available for medevac aircraft, an ambulance can be dispatched from Anchorage using the Seward Highway. Not all medevac transport is associated with emergency situations. Many medevacs involve medically-appropriate hospital-to-hospital transports on a scheduled basis (see Scoping Report, available at <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>).

5.8.3.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The FAA has not established a significance threshold for Children's Environmental Health and Safety Risks.*

Factors to Consider from FAA Order 1050.1F: *The action would have the potential to lead to a disproportionate health or safety risk to children.*

The community relies on the airport for medevac operations. Three medevac operators currently provide service to Seward: LifeFlight, LifeMed, and Guardian. LifeMed and Guardian are the most common medevac operators at the Seward Airport, with approximately 300 annual operations. The Proposed Action will provide a RW capable of supporting the King Air 200, which is the aircraft commonly utilized by these medical evacuations.



Table 14 – Environmental Consequences: Children’s Health and Safety Risks

| Impact Category | Proposed Action | No Action |
|------------------------------------|--|--|
| Children’s Health and Safety Risks | The Proposed Action will maintain the airport’s ability to support medevac operations utilized by the community, including children. | Continued flood impacts at the airport may result in a diminished capacity to support the larger aircraft utilized by medevac operators. |

5.8.3.3 Minimization and Mitigation

No adverse impact to children’s health and safety is anticipated from the proposed project; therefore, mitigation will not be required.

5.8.3.4 Consultation, Permits, and Other Approvals

No consultations, permits, or other approvals are anticipated for the proposed project.

5.9 Water Resources

5.9.1 Wetlands

5.9.1.1 Affected Environment

A wetlands delineation and functional assessment conducted at the airport by ABR, Inc. in 2005 and updated in 2016 by DOT&PF (see Appendix E) indicates that 69% (approximately 234 acres) of the 340-acre airport is composed of wetlands ([DOT&PF 2016](#); [Davis and Pullman 2005](#)). A total of 21 NWI wetland types are found at the airport, which can be aggregated into 12 wetland habitats based on shared similar vegetation and wetland functions. The most common wetland habitat is Lowland Sedge-Shrub/Land Management Areas (approximately 108 acres), followed by Coastal Barrens (approximately 38 acres) and Salt Marsh (approximately 29 acres). The Resurrection River and river bars make up about 21 acres and 14 acres, respectively. Other wetlands make up the remaining area of wetlands at the airport (about 26 acres).

Lowland Sedge-Shrub/Land Management Areas are areas where the former undisturbed habitat has been cleared or filled for the airport. This habitat class is composed of two shrubby wetland types (PSS1/EM1B and PEM1/SS1B) and one emergent vegetation class (PEM1B). Common emergent vegetation consists of invasive graminoid species and shrubs of low height because of repeated clearing for airport maintenance. Coastal Barrens include sand or gravel beaches (E2US2N), mud tidal flats (E2US3N), subtidal flooded ponds (E1UBL), and salt-killed meadows bordering tidal streams (R1SB7R). These wetland types generally consist of unconsolidated mud, silts, sands, or gravels or occasionally salt-killed emergent vegetation, such as sedges and sea grasses. Salt Marshes occur adjacent to the mud tidal flats. They support emergent vegetation, and the hydrologic regime is both regularly or irregularly flooded (E2EM1N and E2EM1P, respectively) due to tides. The remainder of the habitats include four unvegetated types (Rivers, Streams, Ponds, and Riverbars) and five undisturbed types (Riverine Broadleaf Forest, Riverine Tall Scrub, Tall Shrub Riverbar, Lowland Sedge Meadow, and Lowland Tall Scrub) ([Davis and Pullman 2005](#)).



Rivers and streams in the project area have moderate to high value for the aquatic habitat function associated with the Resurrection River Coho and sockeye salmon rearing and spawning habitat and chum and pink salmon use of two small streams within the airport property. Coastal Barrens and Salt Marsh provide high value wildlife habitat for shorebirds, waterfowl, bald eagles, and moose. Riverine wetland habitats also function in groundwater discharge, erosion control/flow regulation, and sediment/toxicant retention ([Davis and Pullman 2005](#)). Vegetated wetlands, Riverine Tall Scrub, and Riverine Broadleaf Forest provide high value erosion control due to their ability to absorb flood waters and create functional drag.

5.9.1.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The action would:*

- ✈ *Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;*
- ✈ *Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;*
- ✈ *Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);*
- ✈ *Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;*
- ✈ *Promote development of secondary activities or services that would cause the circumstances listed above to occur; or*
- ✈ *Be inconsistent with applicable state wetland strategies.*

The proposed project would permanently place 138,581 CY of fill (including pavement, base and subbase course, reclaimed asphalt pavement [RAP], riprap, and borrow from unclassified excavation) into approximately 25 acres of wetlands that would be impacted by the Proposed Action (see Figure 7). Most of the wetlands impacted would be Lowland Sedge-Shrub/Land Management Areas (21.51 acres), Coastal Barrens (2.6 acres), and Salt Marsh (0.7 acres). There would be minor impacts to pond areas (0.08 acres), Riverine Broadleaf Forest wetlands (0.03 acres), and Lowland Tall Scrub wetlands (0.02 acres). There would be no permanent impacts to rivers, streams, riverbars, Tall Shrub Riverbar wetlands, Riverine Tall Scrub wetlands, or Lowland Sedge Meadow wetlands. Approximately 42,101 CY of material would be removed from wetlands and waters of the U.S. to develop a new float plane channel and access road and install riprap along the new runway. This material would be reused on project components. A summary of the proposed wetland impacts are presented in Tables 15 and 16. Temporary impacts include a uniform 20-foot buffer around the perimeter of the constructed area was included in the calculations as a stormwater vegetation buffer to account for temporary impacts that may result from sedimentation at the toe of the embankment as well as use by construction equipment.



Table 15 – Wetland Area Impacts by Project Component

| Project Component | RW | | TW | | Float Plane Access | | Misc.* | | Total | |
|---|--------------|-------------|-------------|-------------|--------------------|------------|------------|------------|--------------|-------------|
| Wetland Type | Perm | Temp | Perm | Temp | Perm | Temp | Perm | Temp | Perm | Temp |
| Pond | 0 | 0 | 0.03 | 0.03 | 0.05 | 0 | 0 | 0 | 0.08 | 0.03 |
| River | 00 | 0 | 0 | 0.02 | 0 | 0 | 0 | 0 | 0 | 0.02 |
| Riverine Broadleaf Forest | 0.03 | 0.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0.03 | 0.08 |
| Coastal Barrens | 2.0 | 0.3 | 0 | 0 | 0.3 | 0.4 | 0.3 | 0 | 2.6 | 0.70 |
| Salt Marsh | 0.5 | 0.2 | 0 | 0 | 0.2 | 0.1 | 0 | 0 | 0.7 | 0.30 |
| Lowland Tall Scrub | 0.02 | 0.01 | 0 | 0 | 0 | 0 | 0 | 0 | 0.02 | 0.01 |
| Lowland Sedge-Shrub/Land Management Areas | 15.2 | 1.7 | 1.5 | 1.7 | 1.1 | 0.9 | 3.7 | 0.9 | 21.5 | 5.2 |
| Total | 17.75 | 2.29 | 1.53 | 1.75 | 1.65 | 1.4 | 4.0 | 0.9 | 24.93 | 6.34 |

*Miscellaneous project components include navigational aids and material disposal areas.

Table 16 - Wetland Fill Quantities by Fill Type

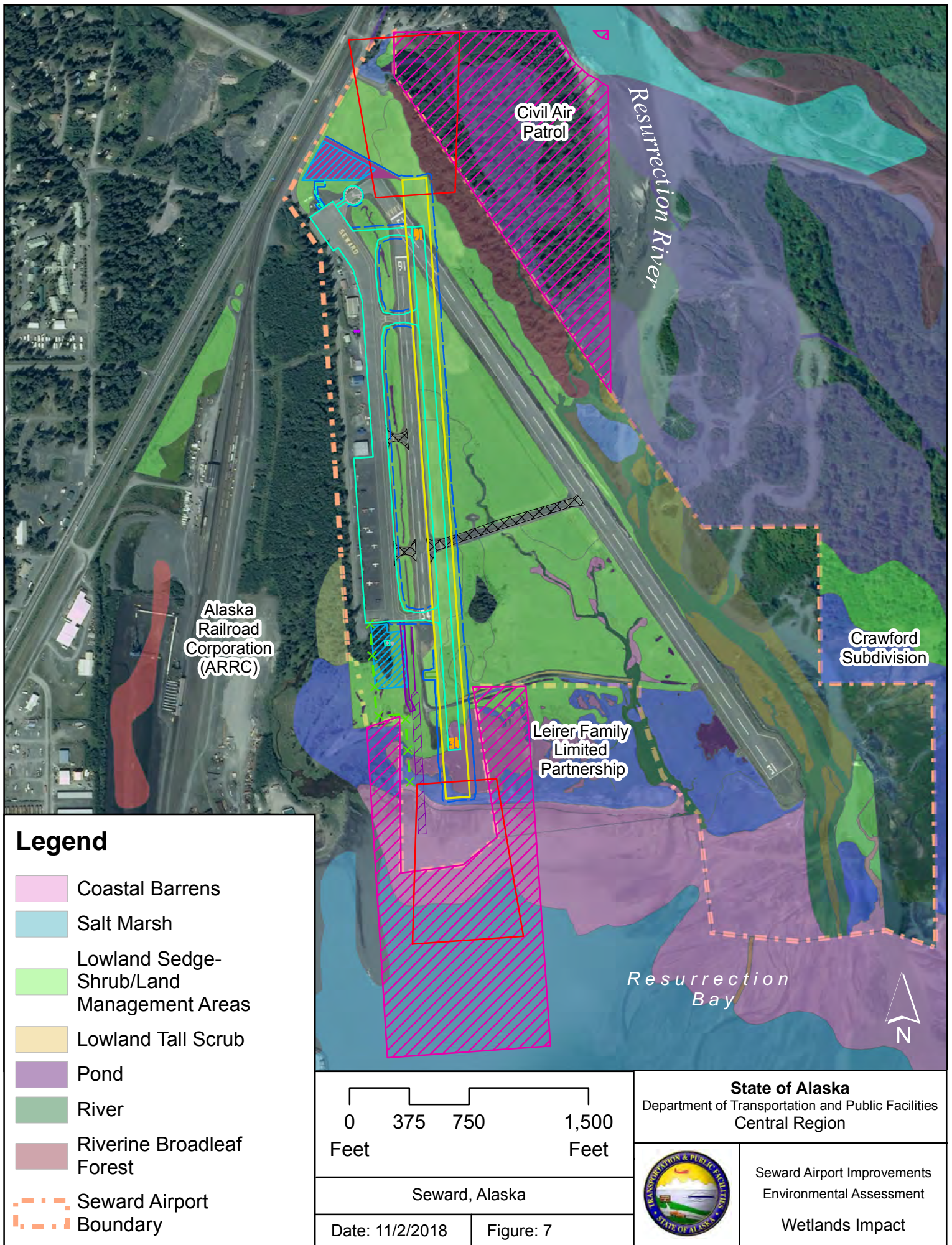
| Project Component | RW | | TW | | Misc.* | | Total | |
|-------------------------|----------------|--------------|--------------|--------------|--------------|---------------|----------------|---------------|
| Fill Type | CY Fill | CY Dredge | CY Fill | CY Dredge | CY Fill | CY Dredge | CY Fill | CY Dredge |
| Pavement | 2,527 | 0 | 165 | 0 | 0 | 0 | 2,692 | 0 |
| Base | 4,626 | 0 | 255 | 0 | 0 | 0 | 4,881 | 0 |
| Subbase | 53,842 | 0 | 3,079 | 0 | 279 | 0 | 57,200 | 0 |
| RAP | 2,596 | 0 | 160 | 0 | 207 | 0 | 2,963 | 0 |
| Riprap | 20,824 | 0 | 0 | 0 | 5,384 | 0 | 26,208 | 0 |
| Borrow | 40,690 | 0 | 2,597 | 0 | 1,350 | 0 | 44,637 | 0 |
| Unclassified Excavation | 0 | 6,708 | 0 | 6,445 | 0 | 28,948 | 0 | 42,101 |
| Total | 125,105 | 6,708 | 6,256 | 6,445 | 7,220 | 28,948 | 138,581 | 42,101 |

*Miscellaneous project components include float plane channel, navigational aids and material disposal areas.

The Proposed Action, which includes the removal of TW A, may alter wetland hydrology for the unnamed stream between RWs 16-34 and 13-31. The Proposed Action's RW construction and float plane channel would not alter hydrology to wetlands on site. The area would continue to be inundated by flood waters from Resurrection River and Resurrection Bay, and the functions and values for wetlands adjacent to fill areas would be sustained.

The Proposed Action would not substantially reduce the ability to retain floodwater or stormwater runoff, because the three wetland types that would be most impacted do not rank high for this function. Of the five wetland types that function to control and regulate flow (Pond, Riverine Broadleaf Forest, Tall Shrub Riverbar, Riverine Tall Scrub, and Lowland Sedge Meadow), only 0.08 acres of Pond and 0.03 acres of Riverine Broadleaf Forest would be impacted by the RW fill.

Most of the wetlands (approximately 21.5 acres of the 25 acres impacted) that would be impacted by the Proposed Action would be Lowland Sedge-Shrub/Land Management Areas. These wetlands are continually impacted by airport maintenance activities, including vegetation clearing, and rank low for performing all wetland functions, including wildlife habitat ([Davis and Pullman 2005](#)). Further, these wetlands do not provide economically important timber, food, or fiber resources.





Approximately 3.33 acres of wetlands that have a high functional ranking for providing wildlife habitat would be impacted. These Coastal Barrens, Salt Marsh, and Riverine Broadleaf Forest wetlands would be impacted by filling and dredging activities. Due to the abundance of these wetland types adjacent to the airport at the head of Resurrection Bay (18,483.5 total acres), the impact of the loss of these wetlands is expected to be minor. The Proposed Action would not promote secondary activities or services that would add to the footprint within or impacts to airport wetlands. Further, the goals of ADEC's *Alaska Wetland Program Plan's Wetland Assessment* include establishing baseline environmental data for Alaska's wetlands; developing criteria for assessing wetland condition and ranking in Alaska; and developing Alaska wetland monitoring and assessments ([ADEC 2015](#)). The Proposed Action is consistent with these strategies since the project has been designed considering a detailed wetland assessment and functional analysis completed at the airport ([Davis and Pullman 2005](#)).

Under the No Action Alternative, there would be no change made to the main RW. It would remain in a state of continued degradation from flood events that requires it to be stabilized and secured. Continued airport maintenance activities to protect against and repair flooding damage would continue activity in adjacent wetlands, including placing fill. Stabilizing and securing the RW against flooding may require a USACE individual permit for wetland fill.

Table 17 – Environmental Consequences: Wetlands

| Impact Category | Proposed Action | No Action |
|-----------------|---|--|
| Wetlands | <p>The Proposed Action would have approximately 25 acres of unavoidable impacts to wetlands. A summary of the proposed wetland impacts are presented in Tables 15 and 16.</p> <p>The Proposed Action would not adversely impact municipal water source protections or substantially reduce the natural systems' ability to retain floodwater or storm water runoff. The project impacts 3.33 acres of wetlands that have a high functional ranking for providing wildlife habitat; no other important wildlife habitats would be impacted, and no secondary activities that increase impacts to airport or surrounding wetlands would occur. The Proposed Action is consistent with the State's wetland strategies.</p> | <p>The No Action Alternative would not result in a change from current conditions. Continued flooding would result in continued airport maintenance activities in adjacent wetlands.</p> |

5.9.1.3 Minimization and Mitigation

Avoiding wetlands is not possible for the Proposed Action. Virtually the entire area is made up of wetlands, with the exception of existing infrastructure.

The total area of fill may be minimized by steepening the side slopes; however, this will be evaluated further as the design process proceeds.

Currently all flow north of TW A is diverted through a single culvert at the location of the unnamed stream. Removing TW A could allow the original hydrologic connectivity between wetlands on either side of this barrier to reestablish itself. After TW A is removed, natural wetland functions are expected to return to the approximately 0.9-acre area. Once TW D and E are removed, approximately 0.3 acres will be regraded to provide an connectivity to



an infield drainage ditch important for water quality protection and, in the future, which could become jurisdictional wetland areas. Further, an additional 11.2 acres of wetlands north of TW A would be improved through better connectivity and hydrological functions, since the taxiway would no longer impede the flow of water into or out of the area. Removing the taxiway would relieve stress on the adjacent floodplains and enhance water quality and ecologic functions of wetlands at the head of Resurrection Bay.

Avoidance and minimization measures that have been incorporated into the design of this project include:

- ✈ Vegetated buffers would remain at least 20 ft outside constructed embankments. While wetlands in the buffer area would not be directly filled, adverse wetland impacts are anticipated from incidental track walking on embankment slopes and installation of other best management practices (BMPs) for temporary erosion and sediment control. Approximately 6.34 acres would be permitted for the 20-foot buffer area, which is included in the total wetlands impacts in Table 16 above.
- ✈ Material stockpiles would be located in uplands.
- ✈ Construction specifications would include a provision requiring the contractor to re-vegetate or stabilize side slopes during the first growing season after the embankment is placed to protect against erosion.

Compensation for unavoidable impacts to approximately 25 acres of wetlands will be provided in accordance with USACE Regulatory Guidance Letter (RGL) ID No. 09-01, which requires a mitigation plan based on the functions and values of the affected wetlands, and compensatory mitigation for federally-funded projects. A compensatory mitigation plan will be established during the permitting process and may include an in-lieu fee.

5.9.1.4 Consultation, Permits, and Other Approvals

The proposed project will comply with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act and executive and federal orders relevant to wetlands. Consultations were conducted with federal, state, and local agencies with expertise and jurisdiction over wetlands. On January 24, 2017, DOT&PF sent an agency scoping letter to ADEC, City of Seward, KPB, and USACE. The City of Seward, KPB Seward/Bear Creek Flood Service Area (SBCFSA), and USACE provided scoping responses.

An agency scoping meeting that included the KPB and USACE occurred on March 2, 2017. The ADEC Division of Water, Wastewater Discharge Authorization, Stormwater and Wetlands was invited but was unable to attend. Related to wetlands, the USACE commented on the need for a USACE permit and for the project to consider avoidance and minimizing unavoidable wetland impacts. ADF&G was interested in whether riparian habitat would be improved by the project. Meeting notes can be found in Appendix A.

On May 26, 2016, a teleconference was held with the USACE to discuss project impacts specific to wetlands. During the meeting, USACE confirmed its responsibility to permit the least environmentally-damaging practicable alternative and advised DOT&PF to submit a USACE permit application. Correspondence regarding wetlands can be found in Appendix A. A USACE individual permit will be obtained for wetland fill. Concurrent with the Section 404 process, an ADEC Section 401 Water Quality Certification will also be obtained.



5.9.2 Floodplains

5.9.2.1 Affected Environment

The Seward Airport is adjacent to the Resurrection River delta. The river itself is a braided river where multiple channels intertwine as channels aggrade and degrade over time. This process of aggradation and degradation occurs as the large sediment load from the glacial headwaters is deposited in some channels and not others and then high flows pick up sediment in one location only to be deposited elsewhere when flow velocities slow. This is a dynamic process that results in a landscape within the floodplain comprised of old and new channels. When the Seward Airport was built, the main channel of the Resurrection River was much farther to the east. Over time the channel has migrated westward and resulted in the now increasing frequency of flood events at the airport.

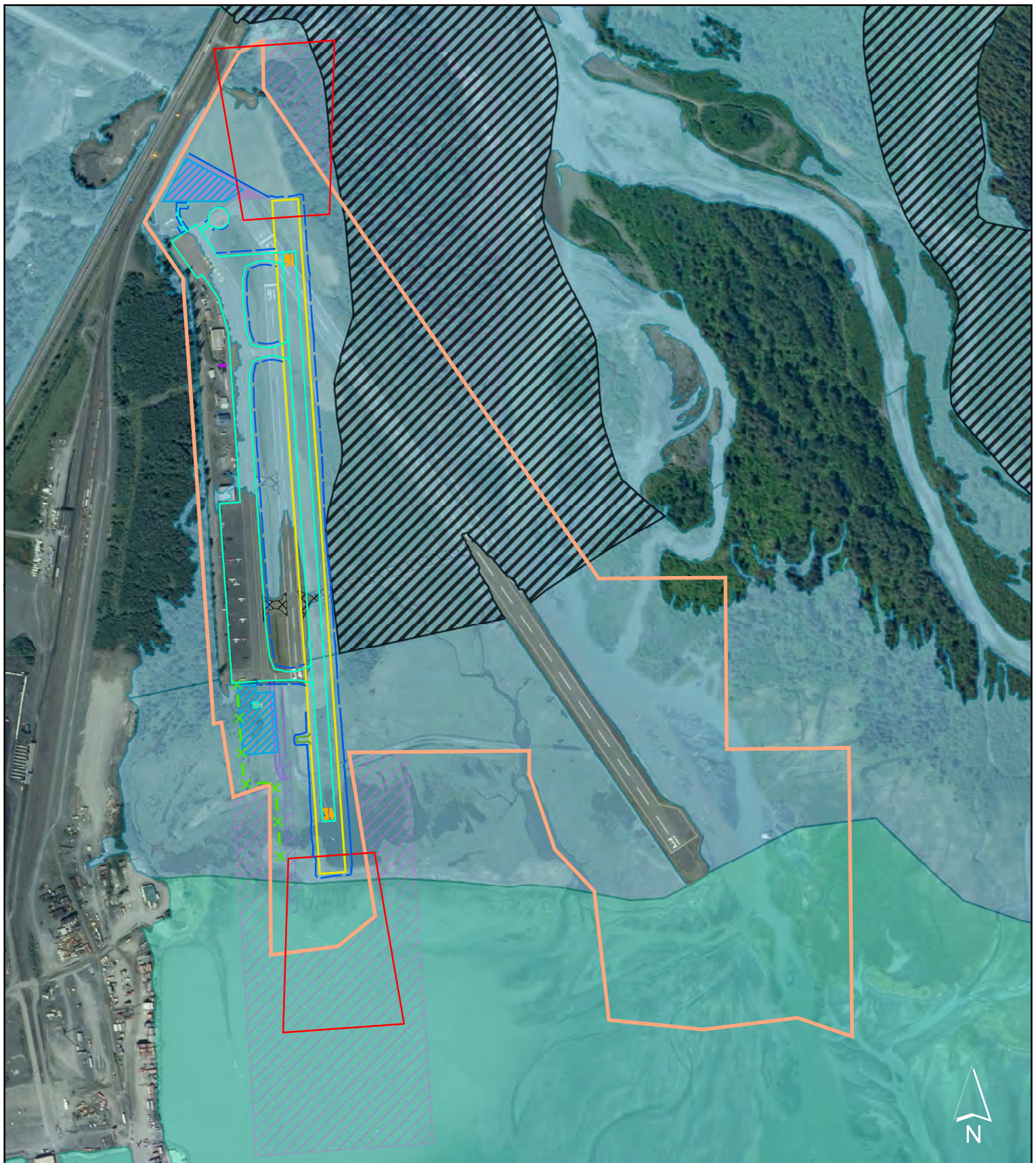
The City of Seward participates in the National Flood Insurance Program and manages its floodplain program. In 2003, the Kenai Peninsula Borough formed the Seward-Bear Creek Flood Service Area to provide flood protection, response, and recovery services to the Seward-Bear Creek community. The Seward Airport is located near the center of this service area. The FIRMs were last updated in 2016 as part of the Kenai Peninsula Borough Risk MAP Study (Preliminary: October 20, 2016). Most of the Seward Airport is located within the floodplain of the Resurrection River while portions of RW 13-31 and TW A are located in the regulatory floodway. This regulatory floodway is defined as: *the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.*

DOT&PF completed a flood study for the proposed project, which was made available for agency review. This study is available at <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>.

5.9.2.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, Floodplain Management and Protection.*

Fill for the Proposed Action would fall within the floodplain, but outside the regulatory floodway. The Proposed Action would result in a BFE increase between 0.01 and 0.41 feet with the majority of increase less than 0.10 feet. Therefore, the FIRM and Floodway map would not need to be modified for this action. Figure 8 shows the proposed project components in relation to the Special Flood Hazard Area (SFHA), the land covered by the floodwaters of the base flood, and the regulatory floodway. DOT Order 5650.2, paragraph 4.k, states that the natural and beneficial floodplain values include, but are not limited to: natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, and forestry. The Proposed Action would have only minor impacts to the natural and beneficial floodplain values.



Legend

 Regulatory Floodway

2016 Effective FIRM SFHAs

 Zone AE

 Zone VE

0 375 750 1,500
Feet

Seward, Alaska

Date: 11/2/2018

Figure: 8

State of Alaska
Department of Transportation and Public Facilities
Central Region



Seward Airport Improvements
Environmental Assessment

Floodplain Map



Consideration is also given to whether the Proposed Action would cause flow alterations that would result in unacceptable upstream or downstream flooding. The Proposed Action does not qualify as a significant floodplain encroachment and by allowing RW 13-31 to eventually breach, will restore part of the original floodplain.

Table 18 - Environmental Consequences: Floodplains

| Impact Category | Proposed Action | No Action |
|--------------------|--|--|
| Floodplains | The Proposed Action would cause a change to the BFE of less than 0.41 feet. No development would occur within the regulatory floodway. | The No Action Alternative would not result in a change from current conditions and flooding of the RW would continue to damage RW 13-31. |

5.9.2.3 Minimization and Mitigation

The Proposed Action will allow RW 13-31 to overtop and eventually be breached by the river. This will restore part of the original floodplain and possibly reduce flooding to adjacent properties. Recent flood studies indicate that construction of the Proposed Action may result in a rise in the BFE of less than 0.41 feet. At present, the amount of flooding associated with the proposed alternative is considerably lower than the dropped Alternative 1.1 (see Section 3.2.1).

5.9.2.4 Consultation, Permits, and Other Approvals

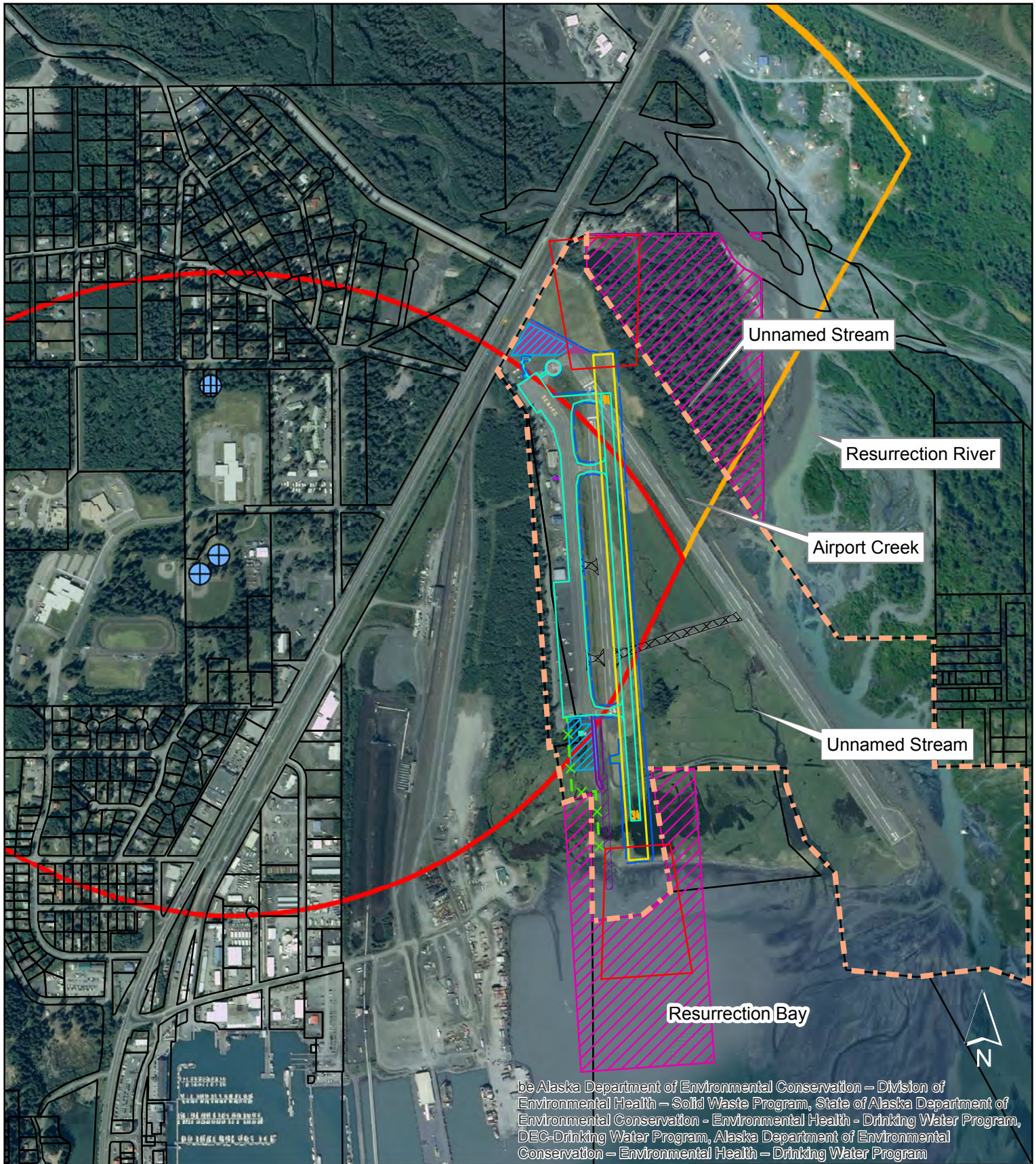
A Floodplain Development Permit will be required from the Kenai Peninsula Borough prior to the start of construction for the Proposed Action. A scoping letter was sent to the Seward-Bear Creek Flood Service Area and the Kenai Peninsula Borough Floodplain Program on January 24, 2017. A scoping meeting was held on March 2, 2017, and was attended by a representative from both groups. A record of the scoping letter responses and meeting notes can be found in Appendix A.


5.9.3 Surface Waters

5.9.3.1 Affected Environment

Drinking water for the City of Seward comes from deep water wells in the Fort Raymond area which are fed from the Japanese Creek aquifer. Portions of the airport are within the several-month and 2-year travel time zones delineated by the Alaska Department of Environmental Conservation (see Figure 9). These zones delineate drinking water protection areas for the City's drinking water wells.

Potential receiving water bodies for the proposed project include Resurrection Bay, Resurrection River, Airport Creek, and two unnamed anadromous fish streams located on airport property (see Figure 9 for locations). The lands adjacent to these water bodies are predominantly wetlands. The Resurrection River is listed as a navigable water by ADNR but not by the USACE.



| | | |
|---|---|---|
| <p>Legend</p> <p>Active Public Water System Source Locations Layer</p> <ul style="list-style-type: none"> Community Water System (C) Non-Transient Non-Community Water System (NTNC) Non-Community Water System (NC) <p>Zone A (GW-Several Months Time of Travel or SW 1000 ft buffer)</p> <ul style="list-style-type: none"> Zone A (GW-Several Months Time of Travel or SW 1000 ft buffer) Zone B (GW-2 Yr Time of Travel or SW-1 mile buffer) | <p>0 500 1,000 2,000 Feet Feet</p> <p>Seward, Alaska</p> <p>Date: 11/2/2018 Figure: 9</p> | <p>State of Alaska Department of Transportation and Public Facilities Central Region</p> <div>  <p>Seward Airport Improvements Environmental Assessment</p> <p>Surface Water</p> </div> |
|---|---|---|



The Seward Airport does not currently operate under a Multi-Sector General Permit for stormwater discharges. A conversation with the airport manager in December 2017 confirmed that the airport does not have a deicing program due to the lack of facilities for storage and distribution of deicing material and equipment.

5.9.3.2 Environmental Consequences of the Alternatives

Significance Thresholds from FAA Order 1050.1F: *The action would:*

- ✈ *Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or*
- ✈ *Contaminate public drinking water supply such that public health may be adversely affected*

Factors to Consider from FAA Order 1050.1F: *The action would have the potential to:*

- ✈ *Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values;*
- ✈ *Adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or*
- ✈ *Present difficulties based on water quality impacts when obtaining a permit or authorization.*

Dredging for the float plane channel will result in an impact to 1.65 acres of wetlands adjacent to Resurrection Bay. Dredging for the channel is anticipated to be 8 ft deep and 100 feet wide. The Proposed Action will result in fill in approximately 25 acres of wetlands across the project area. These wetlands drain into Resurrection Bay and the unnamed stream between RWs 13-31 and 16-34. No direct impacts to Resurrection Bay is anticipated. A culvert connecting the unnamed stream below TW A will be removed and the natural channel restored. See Section 5.9.1 for a discussion of the wetland impacts associated with the Proposed Action.

Table 19 – Environmental Consequences: Surface Waters

| Impact Category | Proposed Action | No Action |
|-----------------|--|--|
| Surface Waters | The Proposed Action is not expected to impact water quality or contaminate public drinking water. The Proposed Action would cause only minor impacts to the natural and beneficial water resource values of the adjacent water bodies. | The No Action Alternative would result in no change from current conditions. |

5.9.3.3 Minimization and Mitigation

Although the Proposed Action would impact 25 acres of wetlands, approximately 62 acres of wetlands will remain intact within the airport property. These remaining areas will serve to preserve the beneficial values such as sediment removal and flood reduction which the wetlands provide. The Proposed Action will result in the removal of TW A, which will improve the hydraulic connectivity of the wetlands north of the TW to those to the south, as well as restore the unnamed stream to a more natural state. The Proposed Action will allow RW 13-31 to breach, thereby eliminating a current obstacle and restoring some of the natural floodplain functions of the Resurrection River. See Section 5.9.2 for further discussion of this function. The elimination of RW 13-31 will also remove a RW whose runoff had direct access to the Resurrection River without the benefit of first flowing through a vegetated buffer. The contractor will be required to develop a SWPPP for this project which will detail specific erosion and sediment control BMPs to protect the surrounding water bodies from impacts during construction.



5.9.3.4 Consultation, Permits, and Other Approvals

A DEC 401 Water Quality Certification will be applied for along with the USACE Section 404 wetland permit. Coverage under the APDES Construction General Permit (CGP) for stormwater discharges will be obtained prior to construction of this project. A tidelands survey has been completed, and a DNR land use permit will not be needed for work associated with the float plane channel. A USACE permit will be needed; further design will determine whether the float plane channel will require a Section 10 or a Section 404 permit.

5.10 Cumulative Impacts

This section considers the cumulative impacts of the proposed project. Council of Environmental Quality (CEQ) regulations for implementing NEPA define cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR §1508.7). NEPA requires that cumulative effects be evaluated along with direct and indirect effects of the Alternatives. The level of analysis and scope of cumulative effect assessment are typically commensurate with the potential impacts, resources affected, project scale, and other factors. As with direct and indirect effects, the No Action Alternative serves as the baseline against which to evaluate cumulative effects.

Past, present, and reasonably foreseeable future actions are discussed within this section, and the focus of the cumulative impact analysis will be on those resources that are either directly or indirectly impacted by the proposed project.

5.10.1 Affected Environment

5.10.1.1 Past, Present and Reasonably Foreseeable Future Actions

For purposes of the proposed project, the review of past actions follows the FAA 1050.1F Desk Reference ([FAA Office of Environment and Energy 2015](#)). “Present impacts of past actions that are relevant and useful are those that may have a significant cause-and-effect relationship with the direct and indirect impacts of the Proposed Action and alternative(s).” Present actions (i.e., actions that are in progress for which effects have begun) are those that are occurring in the same general time frame as this project that could have cumulative impacts. Reasonably foreseeable future actions include those that are not remote or speculative (generally meaning they are included in planning documents reviewed for this project). The timeframe for the cumulative impact analysis considers 10 years into the past (approximately 2007 through 2017) and 20 years into the future (through approximately 2037). For this project, generally, the geographic scope includes the head of Resurrection Bay area that is characterized primarily by commercial and industrial activities.³

³Past, present, and foreseeable future actions were identified with review of the following sources: ARRC 2017, City of Seward 2016, City of Seward 2018, City of Seward 2018a, DOT&PF 2018, DOWL 2008, DCCED 2018, PDC Engineers 2017.



Past actions include the following:

- ✈ Seward Airport flooding maintenance and repairs
- ✈ Seward Port Avenue Railroad Depot with ARRC passenger train service and parking/staging plan implementation
- ✈ ARRC freight dock improvements (concrete foundation, electrical, and water upgrades for fish unloading operations)
- ✈ ARRC laydown area Phase I construction
- ✈ Seward Marine Industrial Center (SMIC) development, including the new breakwater

Present actions include the following:

- ✈ ARRC Seward Cruise Ship Terminal
- ✈ City of Seward, Seward Small Boat Harbor and Launch
- ✈ Continued SMIC operations (including a private and City-owned boat lift and a new dock system)
- ✈ Seward Railroad Depot ARRC passenger facilities (including the Coastal Classic Route service) and freight facilities (including the freight dock and loading facility and laydown area development)

Reasonably foreseeable future actions may include the following:

- ✈ Seward Airport airfield, helipad, and access improvements
- ✈ SMIC expansion and Seward Uplands Development Plan implementation including waterfront development, boat harbor improvements, leasable lands, and Vigor Industrial area growth
- ✈ ARRC capital expansion including rail-port facilities freight dock development
- ✈ ARRC laydown area Phase II construction
- ✈ Seward Highway improvements including the Seward Highway MP 0-8 Pavement Preservation
- ✈ Spring Creek Correctional Center expansion and leasable lands

5.10.1.2 Resources and Actions Considered

In addition to the Categories of Non-Issue, several resource categories would have no impact and therefore would have no potential for cumulative impacts. The Categories of Non-Issue listed in Section 5.1 include:

- | | |
|---------------------|--------------------------|
| ✈ Air Quality | ✈ Farmlands |
| ✈ Climate | ✈ Visual Effects |
| ✈ Coastal Resources | ✈ Groundwater |
| ✈ DOT Section 4(f) | ✈ Wild and Scenic Rivers |

The categories that are excluded from further discussion in this section are:

- ✈ Noise and Noise-Compatible Land Use - Excluded because the Proposed Action would cause only short-term increases in noise associated with construction activities. Long-term noise increases are not anticipated, as the Proposed Action will not result in more frequent aircraft operations or a significant change in aircraft type. Noise levels may increase at the bird-watching area at the southern edge of the airport property, but this effect is not anticipated to exceed the threshold of significance. See Section 5.7 for more detailed analysis.



- ✈ Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
 - Socioeconomics - Excluded because the Proposed Action is not anticipated to adversely affect socioeconomic considerations, including economic growth, physical arrangement of the community, relocation of residents and businesses, local traffic patterns, and the community tax base. See Section 5.8.1 for more detailed analysis
 - Environmental Justice - Excluded because the proposed project would not affect distinct low-income or minority populations. There are not significant numbers of these environmental justice populations in or near the project area. Further, implementation of the Proposed Action does not include any impacts that would affect nearby neighborhoods. See Section 5.8.2 for more detailed analysis.
 - Children's Environmental Health and Safety Risks – Excluded because the Proposed Action would maintain the airport's ability to support medevac operations utilized by the community, including children. See Section 5.8.3 for more detailed analysis.

Other resource categories are considered in the section below.

5.10.2 Environmental Consequences

The cumulative effects analysis necessarily involves assumptions, uncertainties, and data sets that may be incomplete. When considering the significance of the cumulative effects, the same thresholds of significance used in identifying significant project-related effects are used, and such thresholds of significance are defined in FAA Order 1050.1F. Where FAA Order 1050.1F has not established significance thresholds, determining levels beyond which cumulative effects significantly degrade a resource can be problematic. Local, state, and federal standards for some resources would still apply, and other goals or objectives from land use management plans and other guiding programs may be helpful. The analyses contained in this EA identify any defined thresholds known to exist. Where numerical thresholds are not available or cannot be determined, impacts are typically described in relative terms of magnitude.

5.10.2.1 Biological Resources

Cumulative impacts of the proposed project to EFH and fish streams when added to other past, present, and reasonably foreseeable future actions may be decreased fish populations and fewer species in the Resurrection River and creeks at the head of the bay. Impacts to fish streams and EFH would be minimized and mitigated, since projects would be subject to the regulations outlined in Section 404 of the Clean Water Act and the State's Anadromous Fish and Fishway Acts and would be subject to permits and stipulations from USACE, ADF&G, and other agencies.

If development continues within the head of Resurrection Bay area, habitat that supports migratory birds, including eagles and BCCs, may shrink. These birds may also be dissuaded from nesting or using the head of Resurrection Bay as a "stopover" during migration. However, cumulative impacts are expected to be minor considering the expanse of undevelopable land (due to flooding and lack of easy access) in the area. In addition, impacts to birds and their habitat would be mitigated by following USFWS timing guidelines to limit clearing and vegetative disturbance during nesting season and by continuing to monitor and maintain distance buffers between development and active eagle nests.



Invasive species establishment could continue. Using only certified seed mixes on projects and BMPs for cleaning construction equipment prior to transport to project sites could mitigate establishment of invasive species.

5.10.2.2 Hazardous Materials, Solid Waste, and Pollution Prevention

Solid waste generation is anticipated to continue, and construction waste could be generated and would be disposed of in the Seward Monofill/Landfill or Soldotna Central Peninsula Landfill. The Proposed Action is not anticipated to result in cumulative impacts to existing ADEC Contaminated Sites or create new contaminated sites or pollution, since the contractor will have a SWPPP and any soil or groundwater contamination encountered during construction would be managed under an ADEC-approved Work Plan.

5.10.2.3 Land Use

Land development is expected to continue in a pattern similar to present development. Accordingly, land uses are anticipated to support noise-compatible activities. The City of Seward and its residents will continue land use regulation to maintain established and desired land uses. Cumulative impacts to land use will be minor.

5.10.2.4 Natural Resources and Energy Supply

A continued demand of the City of Seward's utilities and natural resources (electric system and fuel and rock quarry sources) are expected to be maintained. Natural resources and energy supply are not limited in the area and no cumulative impacts are anticipated.

5.10.2.5 Water Resources

Cumulative impacts of the proposed project and reasonably foreseeable future actions may result in construction and placement of fill within and adjacent to Waters of the U.S. including wetlands. As wetlands are developed, their associated functions and values become more limited. Fill and dredging of wetlands would be required to comply with the Clean Water Act. Therefore, wetlands would need to be avoided, and impacts would be minimized as practicable. Because of the large area of wetlands in the head of the Resurrection Bay area, compensatory mitigation may provide a means to mitigate future impacts when avoidance is not possible.

The Resurrection River's braided river floodplain is expected to change over time, and flooding in the head of Resurrection Bay area is expected to continue. Consistent with the behavior of braided rivers, the river is expected to move with time, without warning and in a direction that cannot be anticipated. Any development in the floodplain/floodway has the potential to impact the BFE. Flood studies for this project showed that the proposed project may have a minor impact on the floodplain with BFE increases averaging 0.1 feet, or 1.2 inches. This project will be permitted through the City of Seward as required by FEMA and the National Flood Insurance Program as would any other development within the floodplain of the Resurrection River.

Compliance with environmental regulations and adhering to well-planned land use and maintaining development within existing commercial and industrial areas could result in fewer impacts to wetland, floodplain, and surface water resources.



5.10.2.6 Conclusion

Based on the analyses described above, the proposed project would not contribute to impacts that would be cumulatively significant.

Table 20 – Environmental Consequences: Cumulative Impacts

| Impact Category | Proposed Action | No Action |
|---------------------------|--|--|
| Cumulative Impacts | <p>The proposed project could cumulatively impact the following resource categories at the head of Resurrection Bay area:</p> <ul style="list-style-type: none">• Biological Resources (fish, EFH, bird habitat, invasive species)• Climate (greenhouse gas emissions)• Hazardous Materials, Solid Waste, & Pollution Prevention (solid and construction waste)• Land Use (land development)• Natural Resources & Energy Supply (utilities and natural resources)• Water Resources (Waters of the U.S. and the Resurrection River floodplain) <p>Cumulative impacts resulting from past, present, and reasonably foreseeable future actions that include commercial and industrial activities and the proposed project at the head of Resurrection Bay are not expected to be cumulatively significant.</p> | <p>The No Action Alternative would not result in a change from current conditions.</p> <p>Cumulative impacts resulting from past, present, and reasonably foreseeable future actions that include commercial and industrial activities at the head of Resurrection Bay would continue.</p> |

6 COORDINATION

Agency coordination and public involvement for the Seward Airport Improvements project has been ongoing since 2014. Communications have included public meetings, stakeholder working group meetings and consultations with local, state, and federal agencies. These activities are described in more detail below. Copies of meeting notes, sign-in sheets, public and agency comments, and correspondence related to development of the EA, in accordance with the NEPA, are presented in Appendix A. Meetings held before the initiation of the NEPA process in March 2017 are included in the Scoping Report, which is available at <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>.

6.1 Public Correspondence

Public involvement for this project has been ongoing since 2014. Prior to the initiation of the formal NEPA process, communications included two public meetings; a meeting with the City of Seward; establishing and holding three stakeholder working group (SWG) meetings; telephone and email correspondence, including project status update emails; online public notices; a project website; and informational mailers via postal mail. Pre-NEPA public involvement activities are summarized in Appendix C of the Scoping Report (available at <http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>).

NEPA public scoping activities conducted for the EA included project status emails sent out to the project's electronic mailing list on March 1 and October 4, 2017. The purpose of the first email was to announce the initiation of the NEPA process. The second email announced the selection of the Proposed Action. Public comments were received via email following each status update. NEPA public scoping activities are included in Appendix A.



6.1.1 Stakeholder Working Group Meetings

A SWG was established that included aircraft and airport user representatives (ARRC, Alaska Wing Civil Air Patrol, DOT&PF Maintenance, Kenai Peninsula Borough Seward/Bear Creek Flood Service Area, and a general aviation lease holder) and local, borough, and state representatives (City of Seward, DOT&PF, FAA Alaskan Airports Division, and Seward City Council). The fourth SWG meeting occurred on October 2, 2017, via teleconference. The purpose of the meeting was to present alternatives analysis and provide justification for the Proposed Action. SWG Meeting #4 notes are presented in Appendix A. Summaries of SWG meetings 1, 2, and 3 are included in Appendix C of the Scoping Report (<http://www.dot.alaska.gov/creg/sewardairport/documents.shtml>).

6.2 Agency Correspondence

Agency scoping activities conducted for this EA are described below.

6.2.1 Agency Meeting Correspondence

On January 24, 2017, DOT&PF, in coordination with FAA, sent an agency scoping letter that identified the project's purpose and need, described project alternatives, detailed site conditions, identified preliminary environmental research, and solicited comments on the Proposed Action, Alternative 2.2, and Alternative 1.1. The letter was distributed to ADF&G; ADNR; ADNR, Division of Parks & Outdoor Recreation (DPOR); ARRC; ADEC; Alaska Department of Commerce, Community, & Economic Development; NMFS; USACE; USFWS; Kenai River Center; the City of Seward; and the KPB. An agency scoping meeting was held on March 2, 2017, at the Kenai Peninsula College in Soldotna to initiate the NEPA process and gather comments. ADF&G, Division of Habitat; KPB; and USFWS attended the meeting. Invited agencies that were unable to attend included ADEC; ADNR; DPOR; ADF&G, Division of Wildlife Conservation; and NMFS. The scoping letter, agency meeting materials and notes, and agency comments and responses are attached in Appendix A.



7 LIST OF PREPARERS

The people primarily responsible for development or review of this EA are listed below in Table 3.

Table 21 - Project Team

| CONTRACTING AGENCY | | |
|--|---|--|
| DOT&PF 4111 Aviation Dr. Anchorage, AK 99502 | | |
| | | Phone: (907) 269-0617 |
| Barbara Beaton | Project Manager | barbara.beaton@alaska.gov |
| Joy Vaughn | Consultant Coordinator | joy.vaughn@alaska.gov |
| Mark Boydston | Environmental Analyst | mark.boydston@alaska.gov |
| Paul Janke | Hydrologist | paul.janke@alaska.gov |
| CONSULTANT TEAM | | |
| PDC Inc. Engineers 1028 Aurora Dr. Fairbanks, AK 99709 | | |
| | | Phone: (907) 452-1414 Fax: (907) 456-2707 |
| Royce Conlon | Consultant Project Manager | royceconlon@pdceng.com |
| Ken Risse | Lead Civil Engineer | |
| Angela Smith | Civil Engineer | |
| Erica Betts | Environmental Analyst | |
| Patrick Cotter | Planner | |
| Craig Ranson | Surveyor | |
| Dennis Bogren | Survey Coordinator | |
| Solstice Alaska Consulting, Inc. 2607 Fairbanks St., Suite B Anchorage, AK 99503 | | |
| | | Phone: (907) 929-5960 |
| Robin Reich | Public Involvement / Environmental Coordinator | robin@solsticeak.com |
| Hydraulic Mapping and Modeling 1091 W. Chena Hills Dr. Fairbanks, AK 99709 | | |
| | | Hydrology/Hydraulic Analysis |
| Ken Karle | Hydrologist/Hydraulic Engineer | |
| Shannon & Wilson, Inc. 5430 Fairbanks St., Suite 3 Anchorage, AK 99518 | | |
| | | Geotechnical Engineering |
| Kyle Brennan | Geotechnical Engineer | |
| Quantum Spatial, Inc. 2014 Merrill Field Dr. Anchorage, AK 99501 | | |
| | | Aerial Mapping |



8 REFERENCES

- Alaska Department of Commerce, Community, and Economic Development (DCCED). 2018. Community and Regional Affairs, Community: Seward website. Accessed at <www.commerce.alaska.gov/dcra/DCRAExternal/community/Details/326d957a-dc0c-4e28-9406-fc2c89a68cef> on January 11, 2018.
- Alaska Department of Fish & Game (ADF&G). 2017. Fish Resource Monitor. Accessed at <www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.interactive> on September 11, 2017.
- ADF&G. 2015. *2015 Alaska Wildlife Action Plan*. [Online version available at <www.adfg.alaska.gov/static/species/wildlife_action_plan/2015_alaska_wildlife_action_plan.pdf>.]
- ADF&G. 2010. Fish Passage Site 20200945. September 2010. Accessed at <www.adfg.alaska.gov/sf/reports/FishPassage/rptSite.cfm?site=20200945> on December 4, 2017.
- Alaska Department of Environmental Conservation (ADEC). 2015. *Alaska Wetland Program Plan*. ADEC Wetlands Program. June 29, 2015. [Online version available at <https://dec.alaska.gov/water/wwdp/pdfs/Alaska_Wetland_Program_Plan_20150629.pdf>.]
- Alaska Department of Transportation and Public Facilities (DOT&PF). 2018. Status of Active Statewide Projects website. Accessed at <<http://dot.alaska.gov/projects-status>> on January 11, 2018.
- DOT&PF. 2017. Seward Airport Improvements: Selection of the Design Alternative. Position paper available online at <<http://www.dot.state.ak.us/creg/sewardairport/documents/Position-Paper.pdf>>
- DOT&PF. 2016. Field Trip Report: 2004 Wetlands delineation field check update and report. September 30, 2016.
- Alaska Railroad Corporation (ARRC). 2017. Seward Marine Terminal Expansion Planning Master Plan. August 2017. [Online version available at <www.railportseward.com/sites/default/files/Railport%20Seward%20Files/MASTER_PLAN.pdf>.]
- City of Seward. 2018. Seward Marine Industrial Center (SMIC) website. Accessed at <www.cityofseward.us/index.aspx?NID=940> on January 17, 2018.
- City of Seward. 2018a. Economic Development website. Accessed at <www.cityofseward.us/index.aspx?NID=704> on January 11, 2018.
- City of Seward. 2016. SMIC Strategic Work Session Summary. January 2016. [Online version available at <www.cityofseward.us/DocumentCenter/View/3156>.]
- Davis, W. and Pullman. 2005. Preliminary Wetlands Assessment for Proposed Seward Airport Improvements. ABR, Inc. 2005.
- DiMarzio, T. 2017. "Re: Re: Seward Airport Improvements project." Message to Mark Boydston, Alaska Department of Transportation and Public Facilities. October 2017. E-mail.
- DiMarzio, T. 2016. "Re: Seward Airport Improvements Project: birds" Message to Carla SlatonBarker, Solstice Alaska Consulting, Inc. June 2016. E-mail.
- DOWL, Inc. 2008. Seward Airport Master Plan, State Project No. 56525. Prepared by DOWL Engineers for the State of Alaska Department of Transportation and Public Facilities. July 2008.
- eBird. 2017. National Audubon Society and the Cornell Lab of Ornithology. Bird Observations. Seward – Airport Mudflats, Jan-Dec, 1900-2017. Accessed at <<http://ebird.org/ebird/barchart?byr=1900&eyr=2017&bmo=1&emo=12&r=L586881>> on October 24, 2017.



- eBird. 2017a. National Audubon Society and the Cornell Lab of Ornithology. Seward Airport Mudflats High Counts, 1900 – 2017. Accessed at http://ebird.org/ebird/sightings?listType=high_count&locInfo.regionType=hotspot&locInfo.regionCode=L586881&yr=all&locInfo.parentCode=US-AK&sortBy=taxon_order&o=asc on October 24, 2017.
- Federal Aviation Administration (FAA) Office of Environment and Energy. 2015. 1050.1F Desk Reference. July 2015. [Online version available at www.faa.gov/about/office_org/headquarters_offices/apl/enviro_policy_guidance/policy/faa_nepa_order/desk_ref/media/desk-ref.pdf.]
- Federal Emergency Management Agency (FEMA). 2014. Kenai Peninsula Borough, Alaska and Incorporated Areas, Flood Insurance Study Number 02122CV001B. Preliminary: June 13, 2014.
- Griswold, C. 2017. "Re: 2017 Seward Airport Bird List V 1.1." Message to Solstice Alaska Consulting, Inc., May 2017. E-mail.
- Griswold, C. 2016. "Re: Seward Airport high tide photos." Message to Carla SlatonBarker, Solstice Alaska Consulting, Inc. June 2016. E-mail.
- HDL. 2009. Seward Quarry, Mine Engineering & Management Plan, Phase I. Seward, Alaska.
- Hydraulic Mapping and Modeling. 2016. Final Hydrologic and Hydraulic Report: Seward Airport Improvements Project. July 2016. Available online at <http://www.dot.state.ak.us/creg/sewardairport/documents.shtml>.
- National Marine Fisheries Service (NMFS). 2017. Endangered Species Act, Marine Mammal Protection Act Species Distribution Mapper. Accessed at <https://alaskafisheries.noaa.gov/portal/apps/webappviewer/index.html?id=0c4a81f75310491d9010c17b6c081c81> on September 22, 2017.
- NMFS. 2017a. Essential Fish Habitat Mapper. Accessed at www.habitat.noaa.gov/protection/efh/efhmapper/index.html on September 8, 2017.
- Olive, J. 2017. "Re: Seward Airport Improvements feedback." Message to Solstice Alaska Consulting, Inc. October 2017. E-mail.
- PDC Engineers. 2017. City of Seward 2030 Comprehensive Plan Update. Adopted May 30, 2017.
- U.S. Fish & Wildlife Service (USFWS). 2017. Information for Planning and Consultation (IPaC) Resources Report. Accessed at <https://ecos.fws.gov/ipac/location/E7QS665UWRBBFHDYKIXL7JFMZA/resources#endangered-species> on September 8, 2017.
- USFWS. 2017a. Region 7 Timing Recommendations for Land Disturbance & Vegetation Clearing. June 2017.
- USFWS. 2008. Birds of Conservation Concern 2008. United States Department of Interior, USFWS, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. [Online version available at www.fws.gov/migratorybirds/pdf/management/BCC2008.pdf.]
- USFWS. 2004. Ocean Biogeographic Information System Spatial Ecological Analysis of Megavertebrate Populations (OBIS SEAMAP) Mapper, USFWS Division of Migratory Bird Management Beringian Seabird 2004 Dataset. Accessed at <http://seamap.env.duke.edu/dataset/270> on December 4, 2017.
- University of Alaska Anchorage (UAA). 2017. Center for Conservation Science. Alaska Natural Heritage Program AKEPIC Data Portal. Accessed at <http://aknhp.uaa.alaska.edu/apps/akepic/> on September 11, 2017.
- University of Alaska Southeast (UAS), USFWS, et al. 2017. Wetland Ecosystems Protocol for Southeast Alaska Mapper. Accessed at <http://seakgis.alaska.edu/flex/wetlands/> on December 4, 2017.