

1.0 PURPOSE AND NEED

1.1 PROJECT INTRODUCTION

The Village of Tuluksak is located along the lower Kuskokwim River, 350 miles west of Anchorage, and 35 miles northeast of Bethel, Alaska (Figure 1-1) in Section 27, Township 12 North, Range 66 West, Seward Meridian. The community is not connected to the state road or rail system. Residents depend on the village’s airport as a year round means of transportation, air cargo, mail, and medical services. The Kuskokwim River is used as an alternative mode of transportation (travel by boat, dog sled, or snow machine) to other communities during the summer and winter. Although there are no docking facilities, heavy freight and cargo is delivered by barge during the summer. This Environmental Assessment (EA) documents the environmental resources and potential effects of constructing a new airport near Tuluksak.

1.2 PURPOSE OF ACTION

The purpose of this project is to provide Tuluksak with an airport that meets Federal Aviation Administration (FAA) standards and Alaska Aviation System Plan (AASP) for community airports. Aviation forecasts indicate existing airport conditions do not adequately serve current and forecasted aircraft types serving Tuluksak (ALP Appendix J). Due to adjacent development, it is not practical to upgrade the existing airport to current standards. Also, the separation distance between the existing landfill and the existing runway, does not conform to FAA Order 5200.5(A) “Waste Disposal Sites On or Near Airports,” which states that a waste disposal sites “will be considered incompatible . . . located within 5,000 feet of any runway end used only by piston powered aircraft.” (Figure 1-2). A comparison of the existing airport conditions and AASP standards is provided in Table 1-1. A more complete analysis of the existing airport conditions and proposed airport improvements may be found in Appendix J, Airport Layout Plans and Narrative Report. Airport improvements at Tuluksak will provide the community airport facilities meeting long term aviation needs that conform to FAA standards. The airport improvements at Tuluksak are programmed to begin in 2008 and will take two years to complete.

Table 1-1 Comparison of FAA/AASP Standards to Existing Airport Conditions

Category	B-I Standard	Existing Condition
Runway Length	3,300 feet	2,460 feet
Runway Width	60 feet	30 feet
Safety Area Length	3,780 feet	2,770 feet
Safety Area Width	120 feet	100 feet
Runway Surface	Unpaved	Unpaved
Taxiway Type	Exit taxiway, 25 feet wide	None
Apron Size	60,000 square feet	8,721 square feet
Lighting	Medium Intensity Runway Lighting	None
Service Access	Secondary Road	Secondary Road

1.3 FEDERAL ACTION REQUESTED

The federal actions requested of the FAA by the Alaska Department of Transportation and Public Facilities (DOT&PF) are: approval of the Airport Layout Plan (ALP) and participation in funding of the proposed project described herein through the Airport Improvement Program.

2.0 ALTERNATIVES

The alternatives considered for this project include the Proposed Action and No Action. Three alternatives to reconstruct the existing airport were considered, but eliminated from further consideration (see Section 2.4). Elements of the Proposed Action that were evaluated (Figure 2-2) include:

- Airport Location;
- Two airport apron and equipment storage building sites;
- Four access road routes: Inland River, River, Village Land, and Landfill;
- Three barge landing sites: 1) Existing site near the current airport, 2) Runway Protection Zone (RPZ), and 3) Fuel Loading;
- Five material site alternatives: Material Site Alternatives 1 through 5; and
- Three temporary material haul routes: Inland, River Route A, and River Route B.

2.1 ALTERNATIVE 1 – PROPOSED ACTION

The relocation of the airport one mile east of Tuluksak, the construction of the Inland River Access Road, use of the existing barge landing site, and transporting borrow material from MS-5 by one of two temporary haul routes is the Proposed Action. This is the only reasonable and practicable alternative that meets the purpose and need, and avoids fill in wetlands and impacts to Essential Fish Habitat (EFH). This alternative is consistent with the Airport Layout Plan (ALP – Appendix J).

2.1.1 Description of the Action

Airport Location – A new Community Class airport will be constructed one mile east of Tuluksak (Figure 2-1) and include the following:

- A runway 3,300 feet long by 60 feet wide;
- A runway safety area 120 feet wide by 3,780 feet long;
- A runway object free area at least 400 feet wide and extending a minimum of 240 feet beyond the ends of the runway;
- Pads for FAA maintained Precision Approach Path Indicators (PAPI's), Runway End Indicator Lights (REIL's) and an Automatic Weather Observing Station (AWOS).
- Runway protection zones (RPZ) at each end of the runway by clearing beyond the embankments. The RPZ is trapezoidal in shape, measuring 500 feet at the inner width and 700 feet at the outer width and 1,000 feet long. The RPZ begins 200 feet from the ends of the runway;
- A taxiway 40 feet wide by 300 feet long connected to an apron and aviation support area;

- An apron, 200 feet by 300 feet, to provide for commercial aircraft loading and unloading areas for five aircraft tie downs;
- A 100 foot by 300 foot aviation support area including a 100 foot by 100 foot maintenance and operation reserve,
- A two bay Snow Removal Equipment Building;
- Radio-controlled medium intensity runway lighting, reflective cones, threshold markers, a rotating beacon, and a lighted wind cone in a segmented circle;
- An overhead electrical extension from the community to the airport within the access road right-of-way;
- Purchase of approximately 170 acres of land for the access road and airport; and
- Clearing of approximately 137 acres for airport and access road construction.

Two airport apron location options have been identified: one at the north end of the runway (Runway End Alternative) and the other, in the middle of the runway (Midfield Alternative). Both options would include an airport apron and an equipment storage building.

The new airport will meet FAA Airport Reference Code (ARC) B-I standards. To accommodate the occasional Casa 212 aircraft the taxiway safety area will be constructed to ARC B-II standards with a gravel surfaced width of 40 feet.

Access Road – The Inland River Access Route measures 5,500 feet long by 20 feet wide. The roadway embankment will be approximately 4 to 5 feet above the original ground and will require approximately 16,500 cubic yards of fill. This alternative originates at the east end of the Tuluksak River Subdivision, turns south for approximately 800 feet, and then turns back east/southeast (Figure 2-2). Of the four access road alternatives, this one has the shortest length and avoids wetlands, but requires coordination with the property owners other than the Village Corporation. The Inland River Alternative will require the least maintenance and is supported by the community as the preferred route to the airport. Overhead power lines will also be installed along right-of-way (ROW) to provide electric power to the new airport.

Advantages of the Inland River Alternative:

- Avoids wetlands;
- Shortest of the access road alternatives; and
- Will require the least maintenance of the access road alternatives.

Disadvantages of the Inland River Alternative:

- All traffic accessing the airport must pass through the Tuluksak River Subdivision;
- Requires the highest number of ROW acquisitions; and
- Impacts a short segment of an existing all-terrain vehicle (ATV) trail.

MS-5 – A new, 52-acre borrow site will be developed. This site is located on a sparsely vegetated sandbar at the confluence of the Tuluksak and Kuskokwim rivers southwest of the community and approximately 2.0 miles from the airport property (Figure 2-2). Vegetation consists of small willows and unidentified grasses. Material will be excavated during the winter to at least 3 feet below existing grade. This elevation is below ordinary high water (OHW). Gravel for surfacing the runway will be transported to Tuluksak by barge from commercial sources in western Alaska.

The surface estate and subsurface estate is owned by the State of Alaska, Department of Natural Resources (ADNR). The State claims ownership of the sandbar above and below the OHW as they consider the sandbar an accretion to submerged land within the river channel, and not an accretion to lands owned by Calista Native Corporation. The sandbar is separated from the Calista Native Corporation property by an active river channel of the Kuskokwim River. The sandbar does not appear on the Master Title Plats for lands conveyed to the Native Corporation (ADNR 2006).

Barge Landing Site – All equipment, supplies, and imported gravel for constructing the airport and access road will be brought to the community by barge and transferred to staging areas at the existing barge landing site near the current airport (Figure 2-2). The existing barge site will be used in the winter as part of the temporary haul route between the MS-5 and the project. Equipment and borrow material could be stockpiled at an upland location within the existing airport property boundaries near the barge landing site, but far enough away from the runway and apron to avoid conflicts with controlled airspaces and aircraft parking areas.

To minimize impacts to the riverbank and fish habitat, snow and ice ramps will be constructed at river access points.

Material Haul Routes – Three possible material haul routes have been evaluated in this EA: an Inland Haul Route and two River Haul Routes (A and B) (Figure 2-2). The selection of the haul route will depend on winter conditions and will be determined by the contractor. The three alternatives evaluated include:

- ***Inland Haul Route (1.93 Miles)***. Under this alternative, material from the borrow site will be transported on 1.29 miles of the existing road system and 0.64 mile on temporary ice road. Vehicles will be routed from MS-5 on the frozen river to the existing barge landing site. From the barge landing site, the haul road will cross the existing runway and follow the existing road to the new landfill. A temporary ice road will be constructed from the landfill through a conifer/hardwood forest, crossing Palustrine Scrub-Shrub Needle-Leaved Evergreen wetland and three small Palustrine Emergent wetlands, and follow an ATV trail to the Inland River Access Road.
- ***River Haul Route A (2.25 Miles)***. The haul road under this alternative will run approximately 2.1 miles on the frozen Tuluksak River from the MS-5 to the north RPZ. A temporary ice road 0.17 mile in length will be constructed from the Tuluksak River to the north RPZ. A snow ramp will be constructed from the river over the riverbank to minimize impacts to the riverbank.

- ***River Haul Route B (2.25 Miles)***. The haul road under this alternative will run approximately 1.9 miles on the frozen Tuluksak River from MS-5 to the abandoned fuel barge loading site east of the Tuluksak River Subdivision. A snow ramp will be constructed from the river over the riverbank to minimize impacts to the riverbank.

2.2 FUNCTIONAL ASSESSMENT

Alternative 1 fully meets the purpose and need defined for this project for the following reasons:

- The Alaska Aviation System Plan that has established minimum requirements (runway length, width, airspace etc.) for a Community Class Airport will be met;
- Relocating the airport will provide compliance with FAA Order 5200.5A (Waste Disposal Sites on or Near Airports) by locating the runway more than 5,000 feet from the landfill and wastewater treatment lagoon. Landfills and lagoons are bird attractants; potential for aircraft bird strikes decrease as distance increases from these types of facilities. The existing runway is within 1,000 feet of the solid waste landfill and 2,200 feet from a wastewater treatment lagoon;
- Relocating the airport will improve airspace clearance. There is a 30-foot power transmission line crossing through the Runway 20 RPZ just below the 20:1 approach surface (Figure 1-2);
- Relocating the airport will minimize the potential for flooding. The new runway will be located at a higher elevation than the existing airport;
- Relocating the airport will eliminate the need to remove buildings and trees on the existing airport within the Building Restriction lines for air navigation or aircraft ground maneuvering purposes;
- Relocating the airport will offer better control of vehicle and pedestrian access through better separation from local surface circulation patterns. Current use of the existing airport includes vehicles and pedestrians crossing between the end of Runway 20 and the RPZ. This will be eliminated with construction of the new airport;
- Construction of the preferred access road (Inland River Alternative) avoids impacts to wetlands;
- Material sources excavated from MS-5 during the winter avoids impacts to EFH;
- Use of the existing barge landing site reduces the construction costs associated with the development of a new barge landing site; and
- Construction of temporary haul roads: Inland Haul Route, River Haul Route A, and/or River Haul Route B avoids impacts to wetlands and EFH.

2.2.1 Summary of Environmental Consequences

The Proposed Action is expected to have only localized impact confined largely within the boundaries of the new airport property or its immediate surroundings. The duration of most impact categories will be temporary, only occurring during the construction of the airport.

After construction activities, many resource conditions will return to pre-activity conditions. The intensity of most impact categories will be negligible or minor with no measurable change or barely perceptible change to condition or appearance.

Construction of the airport and access road, and the periodic clearing of shrubs and trees in the RPZ, safety areas and runway approaches will have long-term impacts on vegetation. The impact of about 137 acres of unavoidable clearing will be confined to the airport, the access road and the immediate surroundings. There will be a noticeable change in the condition and appearance of the forest vegetation, but the integrity of the forest resources will remain intact.

The Proposed Action is expected to have temporary, negligible, or minor impact on the following resource categories: noise, land use, construction, air quality, water quality, wetlands, floodplains, hazardous waste, and solid waste. The Proposed Action is also anticipated to have a temporary and beneficial impact to the socioeconomic health of the community. A new airport would improve air transportation to the village resulting in economic benefits to community.

The environmental consequences of relocation, construction, and operation of the airport under the Proposed Action include:

- Except for the mechanized clearing of the areas adjacent to 2.3 acres of wetlands, impacts from the placement of fill in wetlands within the project area will be avoided, thus fulfilling Executive Order 11990, *Protection of Wetlands*. Construction of a new airport 1-mile east of the community in uplands essentially avoids all wetlands in the area. Activities associated with brush clearing the southern RPZ has a minor potential to minimally impact 2.3 acres of wetland on the eastern and western limits of the RPZ;
- A total of 52 acres of waters of the U.S. will be impacted by obtaining borrow material from Material Site 5 (MS-5);
- The intermittent energy need is expected to place a slight increase in demand on the Traditional Power Utility in Tuluksak, but within their power generation capacity;
- Construction of the runway will require surfacing gravel to be imported by barge from a commercial material site in western Alaska. Gravel is not available locally. Additional fuel will be required to transport material to the Tuluksak;
- A slight increase in fuel consumption for vehicles is anticipated because of the greater travel distance between the community and the airport; and
- Construction of the runway and apron will use water from the Tuluksak River for compaction of the embankment material. Water pumped from the Tuluksak River will pass through an intake screen to prevent fish entrainment. No measurable adverse impact to fishery resources or fresh water supplies is anticipated.

The environmental consequences of the Inland River Access Route include removal of forest vegetation along the ROW with minimal impact to the area's vegetation, and temporary additional use of fresh water for embankment material compaction.

The environmental consequences of using MS-5 include impacting 52 acres of sparsely vegetated sandbar below the OHW.

The existing barge landing site will be used for transporting equipment and materials. No modifications of the barge landing site or river channel are anticipated to be required to accommodate barge traffic; environmental consequences include minimal impacts on the biotic community are anticipated; any change will not be noticeable or measurable.

The environmental consequences of the three material haul routes under consideration are negligible with the exception of clearing of vegetation for the Inland Haul Route (1.93 Miles) ice road, which will result in long-term changes in the appearance of forest resources. The integrity of the conifer upland forest will remain intact.

2.2.2 Mitigation

Proposed design features and a mitigation plan have been developed for the Proposed Action to minimize harm to wetlands, other waters of the United States, wildlife, and fisheries. These include:

- The contractor will be required to provide effective control of erosion and surface water runoff into adjacent wetland and water bodies during construction. Sedimentation control devised will remain in place until fill and other exposed earthwork attributable to the project are stabilized and revegetated. Compliance with the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities will be a contract requirement;
- Construction vehicles and equipment will be prohibited outside project boundaries;
- All exposed earthwork attributable to the project will be stabilized at the earliest possible date to prevent erosion both during and after project completion. Where soil stabilization is required past the Contract allowable date for seeding, mulch with tackifier will be placed as a temporary measure until the following spring. Stabilization with vegetation, or seeding with native plants to avoid the introduction of non-native invasive plant material shall be completed as soon as possible;
- Equipment servicing and fueling operations will not occur within 100 feet of drainage channels or wetlands. Adequate sorbent material and spill response will be kept on site to be used immediately to contain and clean up any spill of petroleum products;
- To prevent impacts to nesting migratory birds, no vegetation clearing, fill placement, excavation, or other construction activities take place between May 5 and July 25, except at sites that have been sufficiently disturbed or altered (prior to May 5) so to eliminate suitable nesting habitat;
- Clearing adjacent to 2.3 acres of wetland associated with the southern RPZ will take place during winter months when the area is snow covered to prevent impact to the wetland areas;

- The contractor will develop a Spill Prevention, Control, and Countermeasure (SPCC) Plan for the aboveground storage of fuel;
- Excavation and transport of borrow material will occur during the winter; and
- The material site will be reclaimed at the conclusion of pit operations. The sandbar will be contoured to a convex shape to prevent ponding of water and fish entrapment.
- If historical, architectural, archaeological, or cultural resources are discovered during construction, all work would cease that would impact these sites and the State Historic Preservation Officer (SHPO) will be contacted.

2.2.3 Permits and Applicable Federal, State, and Local Laws and Regulations

The Proposed Action will require the following permits and/or clearances:

- U.S. Army Corps of Engineers (USACE) Section 404/10 Permit;
- EPA Spill Prevention Control and Countermeasures Plan;
- EPA National Pollutant Discharge Elimination System General Permit;
- U.S. Fish & Wildlife Service Right-of-Way Permit;
- Alaska Department of Environmental Conservation (ADEC) 401 Certification;
- Alaska Department of Natural Resources (ADNR) Fish Habitat Permit Title 41;
- ADNR Material Site Agreement;
- ADNR Material Site Reclamation Plan;
- ADNR Land Use Permit;
- ADNR Applicant Environmental Risk Questionnaire;
- ADNR Off Road Travel Supplemental Questionnaire;
- ADNR Temporary Water Use Permit;
- ADNR Cultural Resource Concurrence;
- ADNR Coastal Zone Consistency Determination;
- ADNR Interagency Land Management Assignment for Navigation Easement;
- CCRSA Concurrence with Coastal Zone Consistency Determination;
- Moravian Mission Right of Entry Permit;
- Moravian Mission Temporary Construction Easement; and
- IRA Council approval to use local landfill as discussed in Section 4.1.20.1.

Draft permit applications are presented in Appendix B.

2.2.4 Construction Costs

The estimated construction cost for the new airport is \$ 10.39 million. Construction is programmed to begin in 2008 and will take two years to complete.

2.3 NO ACTION ALTERNATIVE

2.3.1 Description of Action

No improvements will be made to the existing airport, and a new airport will not be constructed 1 mile east of Tuluksak.

2.3.2 Functional Assessment

The No Action Alternative does not meet the purpose and need defined for this project for the following reasons:

- The existing Runway 2-20 will remain 2,460 feet long and 30 feet wide and does not meet FAA design criteria or AASP recommendations for a Community Class Airport;
- The north RPZ does not meet current FAA airport design standards;
- Continued use of Runway 20 does not comply with FAA standards for controlling vehicle and pedestrian access to airport property. The pattern of use of vehicles and pedestrians crossing between the end of Runway 20 and the RPZ will continue;
- Continued use of Runway 20 does not comply with FAA standards for clearance. A power transmission line crosses Runway 20 RPZ just below the 20:1 approach surface;
- Continued use of Runway 20 does not comply with FAA Order 5200.5A. The airport is located within 5,000 feet of the landfill and sewage lagoon;
- Spring high flood events will continue to affect the existing airport with the potential of inundating approximately 1000 feet of the runway;
- Buildings within the building restriction line encompassing the RPZ and Runway Visibility Zone will remain;
- Encroachment within the Object Free Area by trees exceeding 25 feet in height will continue;
- Lack of medium intensity runway lighting continues under this alternative; and
- The addition of a taxiway and apron with adequate runway separation will not occur under this alternative.
- No mitigation costs or permits would be required under this alternative.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

2.4.1 Airport Location

Three plans for the existing airport were considered, but eliminated from further consideration because they did not fully meet the purpose and need for the project and were deemed impractical.

Alternative 3 (Extend Runway 2-20) – Under this alternative, the existing Runway 2-20 would have been extended 699 feet south for a total length of 3,200 feet and widened to 60 feet. To reduce flooding hazards, the runway surface would have been elevated above the current elevation. Nineteen buildings would have been removed. This alternative was rejected because it: 1) was not supported by the community, 2) resulted in unacceptable impacts to the village, 3) impacted a Native allotment, 4) conflicted with the Tuluksak Community Land Use Plan, and 5) continued to be within the 5,000-foot radius of the existing landfill.

Alternative 4 (Relocate Runway 20 Threshold) – Under this alternative, the Runway 2-20 threshold would have been relocated 843 feet south and the Runway 2 threshold relocated 1,542 feet south. The runway width would have been expanded to 60 feet, and the runway surface elevated. Five buildings would have been removed. This alternative was rejected for the same reasons as described for Alternative 3.

Alternative 5 (Reconstruct and Reorient Runway 2-20) – Under this alternative, Runway 2-20 would have been realigned as Runway 18-36, and reconstructed to a length of 3,200 feet and width of 60 feet, and elevated above the record flood elevation. This alternative was rejected because it is within the 5,000-foot radius of the existing landfill, conflicted with the local land use plan, required Native allotment acquisition, and was not supported by the community.

Environmental consequences of the eliminated alternatives include;

Compatible Land Use: All existing airport alternatives would have required property acquisitions from Native Allotment claims appearing on BLM status plats. Local residents and allotment claimants opposed further development of the existing airport. The existing airport is not compatible with adjacent residential development.

Biotic Communities: All existing airport alternatives involve clearing vegetation that is suitable for bird nesting, but the clearing would be a negligible fraction of the available habitat. Requiring that clearing activities are accomplished before or after the nesting season would avoid adverse impacts to birds.

Floodplains: Development at the existing airport above the flood of record would require elevating the runway 4 feet above the current elevation. Elevating the existing runway would block adjacent surface drainage and access to the barge landing.

Wetlands: Shallow ponds resulted when soil was excavated along the west side and at the southern end of the existing runway embankment. A field study categorized most of this area as palustrine saturated forest/scrub shrub wetlands. These wetlands would be cleared and filled to an extent that varies with each alternative. Clearing impacts would fall within the range of 44 to 51 acres, and fill impacts would be between 4 and 8 acres.

Solid Waste: All existing airport alternatives are closer to the existing landfill and wastewater lagoon than applicable separation standards. None of the alternatives would involve more than minimal, temporary impacts under this category.

Construction impacts: All existing airport alternatives would involve temporary increases to noise and would require ameliorative efforts to avoid raising dust during at least some of the construction interval. All existing airport alternatives would include long term dust and noise impacts to adjacent residences.

2.4.2 Access Roads

Three access road alternatives were considered, but eliminated from further consideration as discussed below.

2.4.2.1 Landfill Access Road

The Landfill Alternative measures 6,950 feet-long by 20 feet wide. Approximately 5 feet of fill would be placed to construct the road, requiring 25,741 cubic yards of fill. This alternative begins approximately 800 feet southeast of the generator building and approximately 200 feet west of the landfill and sewage lagoon lease lot. The alternative routes between the landfill parcel and a Native allotment (U.S.S. No. 4435) and avoids previous Village Selected land (Figure 2-2). This alternative was developed to avoid Village Selected land which has since been advanced to interim conveyed (IC) status.

This alternative was eliminated from further consideration because the length, wetland impacts, anticipated long-term maintenance problems at the wetland crossings, is no longer necessary because routing was originally developed to avoid the Village Selected land which is now in IC status.

Advantages of the Landfill Alternative:

- Avoids ROW impacts to private property, Native allotments, and previous Village Selected land.
- Provides direct access to the village power generator for airport lighting requirements.
- Avoids routing airport traffic through the Tuluksak River Subdivision.

Disadvantages of the Landfill Alternative:

- Longest of the four alternatives.
- Crosses six wetlands, impacting approximately 500 linear feet (1.91 acres).

- Village anticipates long-term maintenance problems because of the wetland crossings.

2.4.2.2 Village Land Access Road

The Village Land Alternative measures 6,600 feet long by 20 feet wide. Approximately 5 feet of fill would be placed to construct the road, requiring 4,444 cubic yards of fill. This alternative begins approximately 800 feet southeast of the generator building and approximately 200 feet west of the landfill and sewage lagoon lease lot. It is routed between the landfill parcel and Native allotment (U.S.S. No. 4435). It crosses the southeast corner of the previous Village Land and heads east, paralleling the southern boundary following the same alignment as the Landfill Alternative (Figure 2-2). This alternative was eliminated from further consideration because of wetland impacts, and anticipated long-term maintenance problems at the wetland crossings.

Advantages of the Village Land Alternative:

- Avoids ROW impacts to private property, pending property conveyances and Native allotments.
- Provides direct access to the village power generator for airport lighting requirements.
- Avoids routing airport traffic through the Tuluksak River Subdivision.

Disadvantages of the Village Land Alternative:

- Second longest of the four alternatives.
- Crosses five wetlands impacting 620 linear feet (2.24 acres).
- Village anticipates long-term maintenance problems because of the wetland crossings.

2.4.2.3 River Access Road

The River Alternative measures 5,700 feet long by 20 feet wide. Approximately 5 feet of fill would be placed to construct the road, requiring 16,667 cubic yards of fill. This alternative begins at the east end of the Tuluksak River Subdivision and parallels the Tuluksak River for approximately 2,400 feet before turning south, paralleling the runway centerline to the new apron (Figure 2-2). This alternative was eliminated from further consideration because concerns expressed by the community that the road will accelerate bank erosion.

Advantages of the River Alternative:

- Avoids wetlands.
- Second shortest of the road access alternatives.

Disadvantages of the River Alternative:

- All traffic accessing the airport must pass through the Tuluksak River Subdivision.
- Requires the second highest number of ROW acquisitions.

- Limits future development of private property along the river.
- Removes an existing ATV trail along the river.
- Not supported by the Village of Tuluksak. The community is concerned the road will accelerate riverbank erosion because of the proximity of the road to the river.

2.4.3 Material Site Alternatives

Four material sites were evaluated and eliminated from further consideration as material sources for the airport project (Figure 2-2). The aerial extent of the material site is based upon the need to extract approximately 253,000 cubic yards of material. OHW elevation is estimated at 18 feet. Sites identified as uplands are based on interpretation of aerial photography and general knowledge of the area developed during the wetlands delineation survey in 2005. Calista Regional Native Corporation (CRNC) owns the subsurface estate for Material Sites 1 through 4. Material Site 5 is owned by the State of Alaska, Department of Natural Resources (ADNR).

2.4.3.1 Material Site Alternatives 1 and 2 Uplands

A 78-acre parcel located in uplands northwest of the community and between the Kuskokwim and the Tuluksak rivers. Vegetation consists of willow (*Salix* sp.), alder (*Alnus* sp.); black spruce (*Picea marina*), paper birch (*Betula papyrifera*), common horsetail (*Equisetum arvense*), prickly rose (*Rosa acicularis*), and bluejoint reed grass (*Calamagrostis canadensis*).

The surface and subsurface estates for this alternative have been IC to the Tulkisarmute Village Corporation and CRNC, respectively.

Alternative 1 would excavate borrow material from a 35-acre parcel down to the OHW elevation (18 feet).

Advantages of Material Site 1:

- Upland Location.
- Relatively close to the existing barge landing site.
- Relatively short transit to airport construction site.

Disadvantages of Material Site 1:

- During high flow events, the borrow pit could flood and cause the Kuskokwim and Tuluksak rivers to be rerouted. Development of this material site could increase the potential for flood damage in Tuluksak.
- Would require the clearing of 35 acres of upland forest.

Alternative 2 would be excavate borrow material from the entire 78-acre parcel to 2 feet below existing grade, but above the OHW.

Advantages of Material Site 2:

- Upland Location.
- Relatively close to the existing barge landing site.
- Relatively short transit to airport construction site.

Disadvantages of Material Site 2:

- During high flow events, the borrow pit could flood and cause the Kuskokwim and Tuluksak rivers to be rerouted. Development of this material site could increase the potential for flood damage in Tuluksak.
- Requires the clearing of 78 acres of upland forest.

2.4.3.2 Material Site Alternatives 3 and 4 Uplands

A 92-acre parcel located on a vegetated island/peninsula complex west of the community near the confluence of the Tuluksak and Kuskokwim rivers. Vegetation consisted of willow, alder, common horsetail, bluejoint reed grass, and unidentified grasses (Gramineae family).

The surface and subsurface estates for this alternative have been IC to the Tulkisarmute Village Corporation and CRNC, respectively.

Alternative 3 would excavate borrow material from the entire 92-acre parcel, down to one foot above OHW elevation (19 feet).

Advantages of Material Site 3:

- Upland Location.

Disadvantages of Material Site 3:

- During high flow events, the borrow pit could flood and cause the Kuskokwim and Tuluksak rivers to be rerouted. Development of this material site could increase the potential for flood damage to property south of the existing airport.
- Requires the clearing of 92 acres of upland forest.
- Requires longer transient to airport construction site than Material Sites 1 or 2.

Alternative 4 would excavate borrow material from a 58-acre parcel down to OHW elevation (18 feet).

Advantages of Material Site 4:

- Upland Location.

Disadvantages of Material Site 4:

- During high flow events, the borrow pit could flood and cause the Kuskokwim and Tuluksak to be rerouted. Development of this material site could increase the potential for flood damage to property south of the existing airport.
- Requires the clearing of 58 acres of upland forest.
- Requires longer transit to airport construction site than alternatives.

2.4.4 Barge Landing Site Alternatives

Three barge landing sites have been identified for the Proposed Action: the existing barge site near the current airport; a new site on the Tuluksak River near the north RPZ of the proposed new airport; and an area near the abandoned fuel bunker near the old power station.

The existing barge landing site appears to be located on Moravian Mission property. Use of the existing barge landing site may require a right of entry permit. A temporary construction easement may also be needed to cross the property to connect to the public ROW for transporting embankment and gravel material to the new airport.

The development of a new barge landing near the abandoned fuel bunker and site near the north of RPZ would require excavation of a ramp in uplands down to the river (Figure 2-2). These alternatives were considered but eliminated because of concerns over bank erosion and potential impacts to EFH.

However, all three sites could be used as part of temporary winter haul routes. In that event, a snow ramp would be constructed from the river over the top of the riverbank.

3.0 AFFECTED ENVIRONMENT

3.1 RESOURCES NOT AFFECTED

The Proposed Action and the No Action alternatives would not affect: Bald Eagles (Appendix G-77); and Endangered, Threatened, Candidate Fish, Wildlife, and Plant Species (Appendix G-28, G-30) or Noise (Section 4.1).

3.2 LAND USE

The City of Tuluksak was designated as a Second Class City, incorporated in the State of Alaska in 1970. In 1986, the City Council resigned and the process was initiated to dissolve the City. In 1996, the dissolution was completed and the legal rights formally held by the City were transferred to the Indian Reauthorization Act (IRA) Council.

The Tuluksak airport was built by the federal government and later transferred to the State of Alaska. Land surrounding the existing airport boundary, not including the land on the north boundary of the airport, is owned by the Tulkisarmute Native Corporation. Land within U.S.S. 875, north of the existing airport boundary, is owned by the Moravian Church (Figure 3-1).

The State of Alaska retains land ownership of 175.7 acres of the Tuluksak Airport as shown in U.S.S. 3797. The state also owns a portion of land (LSH 43) identified in U.S.S. 875, which extends approximately 3,280 feet north of the U.S.S. 3797 northern boundary and 150 feet on either side of the runway centerline. Subsurface rights within the airport boundaries are owned by DOT&PF. The Moravian Mission owns the remainder of U.S.S. 875 (Reserve Plat No. 86-39).

The majority of the land is owned by the Tulkisarmute Native Corporation and by individuals with land conveyances. Lands to the south of the existing airport include seven claims under the Native Allotment Act of 1906, and are identified in U.S.S. 10260. Three of these overlay patented DOT&PF airport property. The northern edge of the first allotment, located approximately 2,460 feet south of the runway end, was ruled invalid. Final disposition of the remaining two allotments that overlay the airport have not been adjudicated.

Tuluksak is located within the boundaries of the Calista Regional Native Corporation (CRNC). CRNC holds the subsurface rights for all lands in the project area except Native Allotments and DOT&PF property. Excavation of subsurface materials from the uplands other than State-owned property will require an agreement with CRNC. Prior to acquisition of CRNC lands an appraisal will be required.

In March 2001 the Tuluksak Native Community commissioned a Tuluksak Community Plan. This plan addresses among other things, the need for a new airport, the plan also includes a resolution passed by the Tuluksak Native Community in support of relocating the airport. Therefore this project is consistent with the Tuluksak Community Plan.

3.2.1 Department of Transportation Act Section 4(f)

Tuluksak and the surrounding areas are within the Yukon Delta National Wildlife Refuge (YDNW Refuge). The YDNW Refuge was established in 1980 by the Alaska National Interests Lands Conservation Act (ANILCA). A 140 acre parcel in Sections 26 and 35, Township 12 North, Range 66 West, Seward Meridian is a village selection by the Tulkisarmute Inc. and gained Interim Conveyance (IC) status on January 1, 2006 (See Figure 3-1). When the land gained IC status, it was withdrawn from the YDNW Refuge.

3.2.2 Schools

The Village of Tuluksak has one school with grades K thru 12; there are 12 teachers and 140 students. The school is located in the Yupiit School District (YSD), operated by the Regional Educational Attendance Area.

3.3 SOCIOECONOMIC CONDITIONS

3.3.1 Population

Tuluksak is a traditional Yupik Eskimo village, consisting of 94.2 percent Alaska Native or part Native. The 1880 U.S. Census noted a population of 150 living in the village (Bering Sea News, 2005). Census data from the U.S. Census Bureau and the Alaska Community Database (ADCCED, 2005) show moderate growth in the population for the village of Tuluksak (Table 3-1). According to the State Demographer’s estimate, the population of Tuluksak in 2004 was 470 (R&M, 2005). Historic growth was 2.9 percent per year from 1970 to 1990. Since 1990, the community experienced a strong population growth, averaging 7.2 percent per year. The Tuluksak Community Plan uses a growth rate of 3.0 percent to project growth in the community population from 2000 to 2020. By 2020, the community population is projected to reach 849 residents, or more than double the current population (Nairne, 2001).

Table 3-1 Population of Tuluksak, Alaska, from 1960 to 2004

1960	1970	1980	1990	1995	2000	2004
137	195	236	357	391	428	470

3.3.2 Economy

Tuluksak residents almost entirely depend on the fish and wildlife resources in the lower Kuskokwim area for subsistence. Very few jobs exist in the community. The village has one store for frozen, dry, and canned goods. All mail and many goods and supplies reach Tuluksak by air. Barges supply dry goods and fuel during the open water periods.

Chum salmon is one of the more important subsistence fisheries used by the community. The springtime waterfowl harvest is also important to the community, because the fall and winter subsistence resources of fish, wildlife, and plants have been mostly consumed, and the

summer harvest has not yet begun. The fall migration brings a lesser amount of waterfowl through the area. The fall and winter bird harvests include grouse and ptarmigan.

3.3.3 Employment

The primary employment in Tuluksak is in the government sector (City, State, and Federal). Employment in education, health, and social services provides 80 of the 126 jobs in Tuluksak (ADCCED, 2005).

Some commercial fishing occurs; there are 29 residents holding commercial fishing permits. Other employment opportunities include work at the general store, the Alaska Department of Environmental Conservation (ADEC) Village Safe Water (VSW) program, fuel deliveries, road maintenance contracting, and janitorial services at the school and post office. U.S. Census data collected in 2000 showed 126 of 314 residents were employed, with a median income of \$31,563 and per capita income of \$7,132. Nearly 122 (28 percent) of the residents were living below the poverty level (ADCCED, 2005).

3.3.4 Local Projects

There are 11 capital projects planned or under construction in the Village of Tuluksak (Table 3-2). Tuluksak is in the process of installing a piped water and sewage system for the community. The proposed Tuluksak Piped Water and Sewage Project consists of seven phases. Once completed, the new system will provide better water quality and eliminate the need for a hauled sewage program (R&M, 2005).

Table 3-2 Capital Projects in Tuluksak, Alaska

Lead Agency	Fiscal Year	Project Description	Project Stage
HUD	2006	Indian Housing Block Grant - NAHASDA administration, operating and construction funds.	Preliminary
ADEC/VSW	2005	Sanitation Facilities, Phase 3.	Preliminary
ADEC/VSW	2004	Sanitation Facilities Construction Phase 2 – USDA-RD Iron Removal Plant and Maintenance Building.	Preliminary
HUD	2004	IHS Grant – NAHASDA administration, operation, and construction funds.	Construction
ADEC/VSW	2004	Sanitation Facilities Improvements – Lagoon.	Construction
ADEC/VSW	2003	Water and Sewer Project Phase 1 – USDA-RD Construct two wells, raw water line, lift station, force main to lagoon, lagoon access, and water plant design.	Preliminary
ADEC/VSW	2003	Water Storage –SDWA ANO3N30 Construct water storage tanks.	Preliminary
ADCCED	2003	Youth Multi-Purpose Center- Multi-Use Facilities Denali Commission.	Design
ANTHC	2002	Aerial Mapping – Water Project – IHS.	Design
EED	2003	Tuluksak School Improvement – Funded by State GO Bond.	Construction
ADEC/VSW	2002	Water and Sewer – Construct raw water line from wells to proposed WTP, and new honey bucket disposal lagoon, including access road and drill new well. Rehabilitate existing WTP and close sewage bunkers.	Preliminary

Notes: Source: Department of Commerce Community Economic Development

- ADCCED = Alaska Department of Commerce, Community and Economic Development
- ADEC = Department of Environmental Conservation
- ANTHC = Alaska Native Tribal Health Consortium
- EED = Alaska Department of Education and Early Development
- GO = General Obligation
- HUD = Department of Housing & Urban Development
- IHS = Indian Health Service
- NAHASDA = Native American Housing Assistance and Self Determination Act
- USDA = U.S. Department of Agriculture
- VSW = Village Safe Water
- WTP = water treatment plan

3.4 AIR QUALITY

Tuluksak is considered to be an attainment area with the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act; therefore it is not required to have a conformity analysis. Air quality monitoring for criteria pollutants has not been conducted in the area. Particulate matter (seasonal dust) from unpaved road surfaces in the village has been a

problem, according to some residents in Tuluksak. During dry periods in the summer, dust is produced from roads and unvegetated areas by wind, automobiles, ATVs, and activities disturbing the ground.

3.5 WATER QUALITY

The community of Tuluksak borders two major rivers, and is surrounded by numerous small ponds, wetlands, and oxbows, including Mishevik Slough. The proposed RPZ will extend to approximately 300 feet from Mishevik Slough, and the proposed runway end will be approximately 1,500 feet from Mishevik Slough. The ponds between the runway and Mishevik Slough are not EHF and not hydrologically connected. Normal runoff will not reach Mishevik Slough because of the river bank configuration with banks higher than the surrounding area.

No analytical data has been collected on water quality. No evidence of surface water contamination was observed during field surveys conducted by project consultants and DOT&PF in 2005. There are no Clean Water Act 303 (d) impaired water bodies in or near the project area (ADEC 2003).

Water Supply – The Village Council operates the water distribution, source, and treatment system. Tuluksak has a Class A public drinking water system using ground water (ADNR, 1988). Water from the 105-foot-deep community well is filtered, then chlorinated. Treated well water is hauled by residents on ATVs. One water source with a storage capacity of less than 7,000 gallons, serves most of the community, including the washeteria and clinic. The school has its own water source, and some homes have individual wells.

Wastewater – The Village Council operates the sewage collection system. Residents use a honey bucket collection service and a central honey bucket disposal facility – no homes are plumbed. New water treatment, water storage, and sewage lagoon facilities have been constructed, but most residents are not yet connected.

The Village's existing sewage system consists of a sewage lagoon located on the southern edge of the community and approximately 2,200 feet from the existing airport. The lagoon was constructed in the 1970s and is designed to allow wastewater to percolate (seepage lagoon) into the soil without chemical treatment. The seepage lagoon receives approximately 4,000 gallons of wastewater per day.

3.6 ENERGY SUPPLY

The Village Council owns and operates the local electric utility. A new power plant was completed in 2003 by the Alaska Energy Authority with funding from the Denali Commission.

Electricity in Tuluksak is provided by the Traditional Power Utility. The utility is operated by the Village Council. The power plant has a 300 kilowatt capacity and electricity is generated using diesel fuel. Rates are subsidized through the State of Alaska Power Cost Equalization Program.

During the summer, fuel is delivered by barging (Kuskokwim Lighterage and Trucking) from Bethel and by ice road during the winter.

Tuluksak has five separate bulk fuel facilities located throughout the community and owned by the YSD, Tulukisarmute Incorporated, Traditional Power Utility, and the Alaska Army National Guard (Table 3-3). Current bulk fuel storage capacity is inadequate to meet the needs of the power plant, requiring the trucking of fuel in late winter.

Table 3-3 Bulk Fuel Storage in Tuluksak, Alaska

Tank Farm Owner/ Operator	Total Storage Capacity
Yupit School District	120,811 gallons ¹
Tulukisarmute Incorporated	50,000 gallons ²
Traditional Power Utility	12,000 gallons
Alaska Army National Guard	6,500 gallons

Notes:

¹High School Tank Farm storage capacity = 50,500 gallons; Elementary School Tank Farm = 70,311 gallons.

²Deficiencies, as reported by the U.S. Coast Guard and Rural Fuel Service, preclude additional deliveries until the deficiencies are addressed.

3.7 HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The village name of Tuluksak was first published in 1861 as “Tul’yagmyut” an Eskimo word meaning “related to loon.” Before the early 1900s, Tuluksak was located north of its present location on the other side of the Tuluksak River. The present location has been inhabited for about 90 years, although several fish camps have occupied the old village site.

A search of the Alaska Heritage Resources Survey indicates one known historic property in the area: the old main village of Tuluksak (XRM-055) located on the north bank of the Tuluksak River mouth. Several negative cultural resource surveys have been conducted in and around Tuluksak. A proposed school site was tested in 1979, BIA archaeologist conducted surveys along the Tuluksak River near the proposed airport in 1984, and additional surveys were conducted in 1984.

In 2003, an archaeological survey was conducted as part of the Tuluksak Water and Sewer Project. The survey consisted of a physical inspection of the future sites of the new water treatment plant, sewage lagoon, and solid waste sites and approximately 3 miles of utility easements where the mainline water and sewer lines will be constructed. Although the work did not cover the proposed airport property, it indicates (in conjunction with the other surveys) that archaeological potential within the village of Tuluksak is relatively low.

On January 8, 2007 a finding of “No Historic Properties Affected” was received for the Proposed Action from the State Historic Preservation Officer. (Appendix G).

In compliance with Executive Order 13175 “Consultation and Coordination with Indian Tribal Governments and FAA’s Order 1210.20 “American Indian and Alaska Native Tribal Consultation Policy and Procedures” consultation with the Tuluksuk Native Community was initiated in a letter from the FAA to the President of the Tuluksak Native Community, Mr. John Napoka Sr. dated October 7, 2005. Initiation of Consultation and a Finding of No Historic Properties letters were also sent to the tribe on September 28 and December 7, 2006. To date, there has been no official response from the tribe. (Appendix G).

3.8 FISH, WILDLIFE, AND PLANTS

3.8.1 Vegetation

The area around the community of Tuluksak consists of an upland conifer/hardwood mixed forest of black spruce, paper birch, alder, and willow, and palustrine scrub-shrub needle-leaved evergreen and emergent persistent wetlands. Other species present include white spruce, Labrador tea, cranberry, dwarf birch, grasses, mosses, and sedges.

Large palustrine emergent persistent (PEM1), palustrine scrub-shrub needle-leaved evergreen (PSS2), and palustrine open water wetlands (POW) are common throughout the area. It appears most of these wetlands are remnant side sloughs, oxbows, or overflow channels of the Tuluksak and Kuskokwim rivers. Most of the larger wetlands appear to be permanently saturated or inundated year-round. Some of the palustrine emergent persistent wetlands also have large expanses of open water with emergent vegetation (*carex* sp.), dominating the shallows. These wetlands provide an important waterfowl and wildlife habitat, nutrient cycling, and water storage.

3.8.2 Fish

The Kuskokwim and Tuluksak rivers provide important spawning, rearing, and migration habitat for all five species of Pacific salmon in Alaska, as well as resident fish species. Both rivers, their side channels, sloughs, and tributaries are considered EFH by the National Marine Fisheries Service (NMFS). Over 16 species of anadromous and freshwater fish use the Kuskokwim and the Tuluksak Rivers for rearing, spawning, and/or migration including: coho salmon (*Oncorhynchus kisutch*), pink salmon (*O. gorbuscha*), sockeye salmon (*O. nerka*), chinook salmon (*O. tshawtscha*), chum salmon (*O. keta*), rainbow trout (*O. mykiss*), Dolly Varden (*Salvelinus malma*), Arctic char (*Salvelinus alpinus Linnaeus*), Arctic grayling (*Thymallus arcticus*), Northern pike (*Esox lucius*), Burbot (*Lota lota*), Alaska blackfish (*Dallia pectoralis*), Inconnu-Sheefish (*Stenodus leucichthys meyma*), rainbow smelt (*Osmerus mordax*), and whitefish (*Coregonus* sp.). Inconnu-Sheefish and whitefish are present in Mishevik Slough (ADF&G, 1985 and 2006).

3.8.3 Essential Fish Habitat

EFH is a federal designation under the Magnuson-Stevens Fishery Conservation Act of 1996 (M-S Act). The NMFS is responsible for implementing the EFH requirements under the M-S Act. Freshwater EFH for the salmon fisheries in Alaska includes all cataloged streams, lakes, ponds, and wetlands, and other water bodies currently or historically accessible to salmon in the State (NMFS, 1998).

The Tuluksak and Kuskokwim rivers, sloughs, and hydrologically connected wetlands are considered EFH. The M–S Act, Section 3(10) defines EFH as those waters and substrate necessary to fish for spawning, breeding, or growth for maturity. Waters that may be considered EFH include: migratory routes such as rivers to and from anadromous fish spawning areas, open waters, wetlands, and wetlands hydrologically connected to productive water bodies. Water quality is interpreted to be a component of this definition.

3.8.4 Wildlife

Sixty-two bird species, including migratory waterfowl, use the project area as a migratory corridor between nesting areas in the YDNW Refuge and elsewhere, and winter ranges in the lower 48 states. Black brant and Canada, snow, and white-fronted geese are known to be generally distributed throughout the lower Kuskokwim River area, including Tuluksak (ADF&G, 1985).

The wetlands near the project area likely provide important resting, feeding, and staging habitats for migratory water birds. These areas may also provide breeding habitats for some species. Waterfowl species include ducks, geese, whistling swans, and sand hill cranes. The Tuluksak area is an important spring and fall migration corridor in the region. The YDNW Refuge that surrounds Tuluksak supports one of the largest aggregations of water birds in the world (USFWS, Website). In the spring, millions of water birds return to the YDNW Refuge to nest.

The project area is within the range for a number of large mammals, including moose and black bear. Brown bear and caribou are not common to the Tuluksak area. The distribution and abundance of smaller mammals such as lynx, red fox, wolverine, river otter, marten, mink, shorttail weasel, beaver, muskrat, and snowshoe hare is not well documented.

3.8.5 Wetlands

The vegetation in the Tuluksak area is a mix of palustrine wetlands, consisting of expansive emergent wetlands in side channel/slough complexes, scrub-shrub wetlands along the margins of the emergent wetlands, and dense stands of black spruce and paper birch in the uplands (Figure 3-2).

The topography is relatively flat, with uplands areas running parallel to side channels and sloughs common throughout the area. The side channel/slough complexes are remnants of older overflow channels of the Kuskokwim River. The side channel/slough complexes appear to be well established wetland pond ecosystems. The side channels/ sloughs complexes met all three of the USACE criteria for wetlands – hydrology, hydrophytic vegetation, and hydric soils.

Most of the uplands consist of a thick vegetative mat. Beneath the vegetative mat, the mineral soils consist of gravels, sands, and loams with some organic material that appears to be well drained in most areas. Small pockets of hydrophytic vegetation were identified during the wetland delineation of the possible new airport location west of the community. These areas were classified as uplands because they did not exhibit the hydrology or hydric soil characteristics necessary to meet the USACE's wetland definition as described in the 1987

Wetland Delineation Manual. The Wetland Delineation Site Characterization is included as Appendix I.

3.9 COASTAL ZONE MANAGEMENT PROGRAM

In 1972, Congress passed the Coastal Zone Management Act (CZMA) to promote the orderly development and protection of the country's coastal resources. The CZMA resulted from concern over the increasing demands for development of the nation's coastal areas, population increases near the coast, and declining productivity of the coastal environment. The CZMA established a voluntary partnership among the federal government, coastal states, and local governments to develop individual state programs for managing coastal resources. The Alaska coastal zone can extend as far as 250 miles inland. Projects in the coastal zone require a determination from ADNR, Office of Project Management and Permitting that the project is consistent with the Alaska Coastal Management Program (ACMP).

The Tuluksak Airport Project is located within both the Alaska Coastal Zone and the Cenaliuriiit Coastal Resource Service Area. Existing enforceable policies of the Coastal Zone Management Plan include long-term airport maintenance costs, location, and drainage. Completion of an ACMP Coastal Project Questionnaire and Certification allows state resource agencies the opportunity to review the project and determine which permits are required (Appendix B).

3.10 FLOODPLAINS

Floodplain information is limited for the Tuluksak area and based on accounts provided by local residents (USACE, 2006). The 1970s flood of record elevation is 3.9 feet above OHW (30.22 feet NAVD88 [Alaska 1999]). The worst floods remembered by residents were those of the 1970s and caused by ice jams on the Kuskowkwim River. The flood of record was based on water marks on pilings. High Water Elevation (HWE) signs were placed at three locations in the community at the elevation of the water marks, with the sign's water symbol at the flood elevation. HWE #1 is on the piling under the generator building of the Henry Lott Memorial Elementary School. HWE #2 is on a corner piling of the old National Guard Armory. HWE #3 is on a utility pole approximately 50 feet downstream of the Tuluksak Library. Elevations at the proposed airport site vary between 23 and 30, or between 7 and 0 feet below the flood of record elevation.

3.11 NATURAL RESOURCES

Natural resources used for the project include:

- Fresh water for constructing the temporary ice haul roads.
- Gravel for surfacing the runway, apron, and access road; borrow material for the runway, apron, and access road construction; and fuel for operating construction equipment. There are no commercial borrow sources near Tuluksak.

Tuluksak is located within the Yukon-Kuskowkwim Delta on the south side of the Tuluksak River. Thousands of lakes interconnected by slow meandering sloughs, streams, and

marshlands, dominate the area. The Yukon-Kuskokwim Delta is underlain by unconsolidated Cenozoic gravel, sand, and silt deposits. Tuluksak is in an area of discontinuous permafrost where upper soil layers consist of peat over organic-rich silt. Beneath the silts are beds of poorly graded sands interbedded with silt.

3.12 LIGHT EMISSIONS

The existing airport is not marked and does not have runway lighting; the runway edges are identified with orange reflective cones. The main existing sources of community light emissions are from vehicle traffic, and lighting of residences and commercial buildings.

3.13 SOLID WASTE

The IRA Council owns and operates an unpermitted, Class III municipal solid waste landfill south of the community and approximately 2,100 feet east of the existing airport. The community is currently in the process of developing a new solid waste landfill and sewage lagoon site southeast of the community and approximately 3,800 feet east of the existing airport.

A Class III landfill may accept less than 5 tons of municipal solid waste per day (on an annual average) and can accept less than 1 ton of ash per day (on an annual basis) of incinerated municipal solids waste.

Hazardous waste such as those wastes regulated under Resource Conservation and Recovery Act and Title 18, Alaska Administrative Code, Part 62 (18AAC 62), such as acids, solvents, explosives, lead acid batteries, or used oil may not be disposed of at a Class III landfill (18 ACC 60.020(a)).

Polluted soil can be placed only in landfills that are lined and have a leachate collection system. Petroleum-contaminated soils that have been cleaned up to meet the Level A standards in 18 AAC 78 may be placed in a permitted solid waste landfill, if the permit issued allows it (18 ACC 60.025(ab)).

3.14 HAZARDOUS MATERIALS

There are no known contaminated sites or leaking underground storage tanks in the proposed project area (ADEC, 2005a and b). A Hazardous Contamination Assessment was conducted in September 2005 (Appendix C).

3.15 FAA FUTURE PROJECTS

No other airport improvement projects are planned. With the airport improvements FAA may install runway and indicator lights (REILs), precision approach path indicators (PAPIs) and an airport weather observation station (AWOS). The FAA Ten Year Plan does not include provisions for other navigational aids at Tuluksak.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 COMPARISON OF ALTERNATIVES

A comparison of the duration, extent, and the intensity the direct and indirect impacts of the issues affected by Alternative 1 (Proposed Action) and Alternative 2 (No Action Alternative) are presented in Table 4-1 and discussed in more detail the sections following the table.

Table 4-1 Comparison of Impacts on Resources by Alternatives

Resource Topic	Section	Alternative 1 (Proposed Action)	Alternative 2 (No Action)
Noise	4.1.1	Temporary duration, and local extent. The project is not expected to cause noise sensitive areas located at or above DNL 65 dB to experience a noise increase of at least DNL 1.5 dB.	No change in duration, extent of impact or intensity of impact at the existing airport. Adjacent residential development would continue to experience airport related noise.
Compatible Land Use	4.1.2	Long-term duration, localized extent, and moderate intensity of impact. Use is consistent with local community planning documentation. No noise impacts identified.	No changes will occur to local land use patterns under this alternative. Airport related noise and incompatibility with adjacent residential development would remain.
Socioeconomic	4.1.3	Temporary duration, localized extent, and beneficial to the local economy. No relocation associated with the Proposed Action; no change in tax base; minor change in local traffic patterns.	No adverse impact to socioeconomic conditions in the community.
Section 4(f)	4.1.3	No 4(f) properties would be affected.	No 4(f) properties would be affected.
Environmental Justice, and Children's Health and Safety Risks	4.1.5	No disproportionately high and adverse human health or environmental effects on minority and low-income populations. The Proposed Action will not cause disproportionate health and safety risks to children.	No impacts are anticipated
Air Quality	4.1.6	Temporary duration, localized extent, and minor impacts on air quality from road and airport construction. Long-term duration, localized extent, and negligible impact of airport operations. No exceedence of the NAAQS is expected.	No changes to local air quality. Dust levels from existing airport operations to nearby local residences would remain.

Table 4-1 Comparison of Impacts on Resources by Alternatives (continued)

Resource Topic	Section	Alternative 1 (Proposed Action)	Alternative 2 No Action
Water Quality	4.1.7	The Proposed Action will meet water quality standards and not supply, sole source aquifer, or waters of national significance	No change to water quality.
Historical, Architectural, Archaeological, & Cultural Resources	4.1.8	No adverse impact to Historical, Architectural, Archaeological, or cultural resources. Protected properties are not present within area of potential effect.	No adverse impact to Historical, Architectural, Archaeological, or cultural resources.
Fish, Wildlife, and Plants	4.1.9	The Proposed Action will neither jeopardize any listed species' continued existence nor destroy or adversely affect a species critical habitat. No adverse effect to EFH.	No change to the biotic community.
Wetlands	4.1.14	The Proposed Action will not adversely affect local wetlands or promote development that adversely affects wetlands. 52 acres of waters of the U.S. will be dredged. Minimal potential for negligible impacts to 2.3 acres of wetlands.	No impact to wetlands.
Floodplains	4.1.15	No notable impacts on natural and beneficial floodplain values would occur.	No change to floodplains.
Farmlands	4.1.18	There are no designated farmlands in Alaska, therefore this project would not adversely affect designated farmlands.	No farmlands would be affected.
Light Emissions & Visual Effects	4.1.19	No light emissions will create an annoyance or interfere with normal activities. No Federal, State, local agencies, tribes, or the public shows these effects contrast with existing environments.	No change to light emissions.
Solid Waste	4.1.20	Temporary duration, localized extent, and minor impact to the community. Airport generated solid waste will not exceed available landfill capacities or require extraordinary effort to keep up with solid waste permit conditions.	Not compatible with AC 150/5200-33 hazardous wildlife attractants on or near airports.

Table 4-1 Comparison of Impacts on Resources by Alternatives (continued)

Resource Topic	Section	Alternative 1 (Proposed Action)	Alternative 2 No Action
Hazardous Materials	4.1.20	This project does not involve a property on or eligible for the National Priorities List (NPL).	The current site has not been identified as eligible for the NPL.
Energy Supply and Natural Resources	4.1.21	Long-term duration, localized extent, and minor impacts to energy supply and natural resources.	No change to energy supply or natural resources.
Construction Impacts	4.2.1	Temporary duration, localized extent, and negligible intensity. Material Site: Temporary duration, localized impact, and no impact to EFH. Barge Landing Sites: Temporary duration, localized impact, and no impact to EFH.	Not applicable, no construction impacts under this alternative.

4.1.1 Noise

FAA Order 1050.1E, states that “no noise analysis is needed for airports whose forecast operations in the period covered by the environmental assessment do not exceed 90,000 annual adjusted propeller operations or 700 annual jet operations.” Following the construction of the airport, the number of annual propeller operations at Tuluksak is expected to be around 7,079 by year 2015. No jet operations are anticipated at Tuluksak.

4.1.1.1 Alternative 1 (Proposed Action)

Aircraft noise levels in the community will decline under the Proposed Action because of the increased distance between the community and the airport. There will be temporary, localized, and negligible noise impacts associated with the use of heavy equipment during construction of the new airport.

Noise impacts associated with the construction and use of the access road, development and excavation of borrow material, barge loading, and use of haul roads will be negligible and temporary.

4.1.1.2 Alternative 2 (No Action)

The frequency of noise events experienced by the community will likely increase since the growth projected in community activity is independent of airport improvements.

Under the No Action Alternative, there will be no increase in noise levels from airport construction activities within the community.

4.1.2 Compatible Land Use

4.1.2.1 Alternative 1 (Proposed Action)

The Proposed Action is consistent with local land use plans. According to the Tuluksak Native Community Plan adopted in 2001, residents suggested that the existing airport be moved away from the Village. The Tuluksak Native Community passed two resolutions supporting relocation. Resolution 00-12-47 supports relocation of the airport to somewhere southwest of the Village. Resolution 03-10-35 also supported relocation; however, this resolution was more specific and identified the location of the build alternatives on an aerial photograph attached to the resolution. Both resolutions are included in Appendix G.

4.1.2.2 Alternative 2 (No Action)

The No Action Alternative will not resolve:

- Potential wildlife hazards to aviation created by the landfill – The distance of the landfill to an active runway will remain unchanged and the continued use of piston-powered aircraft will remain incompatible with airport operations (FAA Order 5200.5A).
- The aircraft safety issues created by several buildings remaining within the RPZ and Building Restriction Line – The power line and the buildings will remain a hazard to flying aircraft and aircraft maneuvering on the ground.

4.1.3 Department of Transportation Act Section 4(f)

4.1.3.1 Alternative 1 (Proposed Action)

A portion of the Proposed Action (Inland River Access Road Alternative and Inland Haul Route) crosses former YDNW Refuge land and is now in Interim Conveyance (IC) status to Tulukisarmute Inc. Since this land is in IC status, no Section 4(f) lands would be affected by the Proposed Action. However, a ROW permit will be required from the USFWS until the lands are officially conveyed to Tulukisarmute Inc.

A ROW permit from the USFWS will be required for the construction of the Inland River Access Road between the community and the airport. The Proposed Action will not impact Section 4(f) lands.

4.1.3.2 Alternative 2 (No Action)

Section 4(f) lands will not be affected under the No Action Alternative.

4.1.4 Socioeconomic Impacts

4.1.4.1 Alternative 1 (Proposed Action)

This action will not cause:

- Relocation of homes or businesses;
- Extensive disruptions in traffic patterns. Traffic patterns within Tuluksak are likely to change since the new airport will be located to the east. The proposed Inland River Alternative road will be accessed through the Tuluksak River Subdivision, increasing traffic through this part of town.
- Any loss in community tax base. Temporary economic gain may occur during construction of the airport, the access road, the material site, and haul roads, and as a result, may benefit the community by providing local employment. CRNC may benefit from the sale of gravel for the new airport. If gravel comes from another location, outlying communities may benefit temporarily from the extraction, shipment, and sale of the gravel.

Improvements at the existing airport or construction of a new airport will improve air travel to and from the community. The addition of runway and navigation lights will improve the health and safety of the residents by facilitating medical evacuations at night or during marginal weather conditions. Improving or relocating the airport is not likely to change tourism, sport hunting, fishing, or subsistence activities in the area.

4.1.4.2 Alternative 2 (No Action)

Under the No Action Alternative, no changes are anticipated to the Village's economy, population, employment, and income. The existing barge landing site will continue to be used for offloading of supplies during the summer. Under this alternative, Medevac service would not be available during hours of darkness due to the lack of runway lighting.

4.1.5 Environmental Justice and Children's Health and Safety Risks

Executive Order 12898, dated February 11, 1994, requires federal agencies to identify and address any disproportionately high and adverse human health or environmental effects their proposed actions might have on minority communities or low-income communities. Federal agencies are required to use every feasible means to reach and communicate with these communities from the earliest stages of planning, through the decision to proceed with a proposed action. Agencies must specifically address, in the environmental analysis, how these communities may be affected by the Proposed Action.

4.1.5.1 Alternative 1 (Proposed Action)

The Proposed Action is not expected to cause any disproportionately high and adverse human-induced health or environmental effects on the village of Tuluksak. The Proposed Action would not adversely affect children's health and safety, either disproportionately, within the overall population, or otherwise. This project will not create risks to health or to safety that a child is likely to come into contact with or ingest.

The project is expected to be beneficial to the community as a whole, as well as the minority population, people with low incomes, and children. Air travel is the major form of transportation, and providing air cargo, mail, and medical services for the village of Tuluksak.

Improvements to the construction of a new airport will also allow Medevac services during hours of darkness.

4.1.5.2 Alternative 2 (No Action)

Under the No Action Alternative, no impacts to human-induced health or environmental effects will occur in the village of Tuluksak.

4.1.6 Air Quality

4.1.6.1 Alternative 1 (Proposed Action)

The Proposed Action will not create long-term impacts to air quality. The Proposed Action will have temporary and negligible impact on air quality in the Tuluksak area. Operation of construction equipment at the airport location will result in localized and temporary exhaust emissions. Construction activities, including the removal of overburden, and the movement of equipment and borrow material, is expected to temporarily increase the amounts of fugitive dust. To minimize windblown dust from the project site, DOT&PF will require construction contractors to implement Best Management Practices (BMPs), which may include the following:

- Use water to control dust at material sites prior to excavation,
- Application of a dust palliative such as calcium chloride,
- Phase development to minimize disturbed areas during construction,
- Use wind fencing or similar erosion control measures,
- Reduce vehicle speed on excavation site, and
- Cover and/or stabilize fill material stockpiles and material sources.

No measurable change in air quality is anticipated from activities associated with the construction or use of the access road, the material site, the haul roads, or use of the barge landing site.

4.1.6.2 Alternative 2 (No Action)

The No Action Alternative will not impact air quality in the Tuluksak area.

4.1.7 Water Quality

4.1.7.1 Alternative 1 (Proposed Action)

No de-icing materials will be used at this airport, so there are no long-term impacts to water quality from operation of the airport.

Construction of a new airport is expected to have negligible impacts on water quality. Construction activities could result in direct, short-term impacts on water quality because of erosion from the project construction and development activities. Water quality impacts will

be mitigated by implementing a *Storm Water Prevention and Pollution Plan (SWPPP)* as required under the EPA NPDES *Construction General Permit for Stormwater Discharges from Large and Small Construction Activities in Alaska*. All construction stormwater discharges will be performed under this permit, the SWPPP, and the Erosion and Sediment Control Plan. A comprehensive list and description of the BMP's are detailed in the DOT&PF SWPPP Guide (DOT&PF, 2005). Typical erosion and sediment control measures include: silt fences, straw bales, rolled matting, temporary sedimentation basins, temporary seeding, mulching, and stormwater conveyance channels.

Construction of the Inland River access road, development and operation of the material site, use of the existing barge landing site, and development and use of temporary haul roads are expected to have negligible impacts on water quality.

4.1.7.2 Alternative 2 (No Action)

Water quality will not be impacted under the No Action Alternative.

4.1.8 Historical, Architectural, Archaeological, and Cultural Resources

4.1.8.1 Alternative 1 (Proposed Action)

The proposed airport location, including the Inland River Access Road, material site, existing barge landing site, and temporary haul roads, do not appear to impact known historic, architectural, archaeological, or cultural resources in the project area, based on the Bureau of Indian Affairs archaeologist-conducted surveys near the proposed airport location in 1982 and found no sites (Hoff, 1982, Hoff and Dotter, 1982), and further surveys in the area in 1984 were also negative (Jespersion and Pittenger 1984). Another survey was conducted by Pipkin 2003 as part of the Tuluksak Water and Sewer Project. A finding of "No Historic Properties Affected" from SHPO was received on January 8, 2007, a copy of the finding can be found in Appendix G.

If historical, architectural, archaeological, or cultural resources are discovered during construction, all work would cease that would impact these sites and the SHPO will be contacted.

Initiation of Consultation and Finding of No Historic Properties letters were sent to the Tuluksak Native Community, Calista Corporation and Tulkisarmute, Inc. (Appendix G). Calista Corporation responded and did not identify any impacts from the Proposed Action. Mr. Moses Peter of the Tuluksak Native Community expressed concerns with the access road alternative adjacent to the Tuluksak River through a Native allotment, and material source alternatives within subsistence hunting areas. Both of Mr. Moses' concerns have been mitigated by routing the access road away from the river, and selecting a sandbar in the Kuskowkwim River for the material source where there is no hunting activity. No response was received from Mr. Alexie, President of Tulkisarmute, Inc.; however, Mr. Alexie as President of the Tuluksak Native Community in 2004 signed the resolution supporting the new airport location (Appendix G).

4.1.8.2 Alternative 2 (No Action)

Historic, architectural, archaeological, and cultural resources would not be impacted by the No Action Alternative.

4.1.9 Fish, Wildlife, and Plants

4.1.9.1 Vegetation – Alternative 1 (Proposed Action)

No significant impact to forest habitat in the Tuluksak area is expected under the Proposed Action, because of an abundance of this habitat type represented. A total of 137 acres will be removed as part of the Proposed Action.

One hundred nineteen (119) acres of upland conifer hardwood mixed forest of black spruce, paper birch, alder, and willow will be removed from the airport location for the runway, runway approaches, apron, and RPZ.

Sixteen (16) acres of black spruce, paper birch, alder, and willow will be removed for the construction of the Inland River Access Road. The construction of a River Haul Route following the Tuluksak River is not expected to impact vegetation. However, construction of the Inland Haul Route will require the clearing of 2.2 acres of upland forest. The development of the material site and off-loading equipment at the existing barge landing site are not expected to impact vegetation.

4.1.9.2 Alternative 2 (No Action)

Vegetation will not be impacted under the No Action Alternative.

4.1.10 Essential Fish Habitat

4.1.10.1 Alternative 1 (Proposed Action)

The construction of the airport, access road, and mechanized land clearing of wetlands in the south RPZ will have no adverse effect on EFH. This determination was made by the NMFS representative during the Agency Scoping meeting on January 30, 2006 (Appendix G-19) with subsequent follow up emails to confirm such from NMFS and ADNR-OPMP (Appendix G). No adverse effects to EFH are anticipated with the construction of the Inland River Access Road, use of the existing barge landing site, or the construction and use of temporary haul roads. These activities do not involve construction activities near, or the discharge of fill into, wetlands.

The excavation of borrow material from the sandbar (Alternative Material Site 5) during the winter is not expected to have any impact on EFH. The Kuskokwim River where MS-5, is located, is used by fish only as a migration corridor. Winter excavation will effectively eliminate any possibility of fish entrapment or stranding. To prevent fish entrapment at the completion of material excavation, the finish grade will be convex in shape, with a high point in the center and sloping to lower elevations on the edges. Excavation of the sandbar during the winter will reduce the impact of fines and sediments on resident and anadromous fish,

since fish are less abundant at this time of year than during spring or summer. A buffer will be retained between the borrow pit and the active river channel as mitigation to prevent erosion and protect water quality.

4.1.10.2 Alternative 2 (No Action)

EFH will not be adversely affected by the No Action Alternative.

4.1.11 Wildlife

4.1.11.1 Alternative 1 (Proposed Action)

There are minimal concentrations of large mammals, such as moose and black bear in the Tuluksak area (ADF&G/Division of Subsistence).

The Proposed Action will remove a total of 137 acres of habitat, however because of the abundance of habitat of this type; the reduction is expected to have a negligible impact on wildlife. Restricting the timing of clearing activities, fill placement, and other construction activities as stated in Section 2.2.2 Mitigation, will mitigate impacts on nesting birds.

4.1.11.2 Alternative 2 (No Action)

Wildlife will not be impacted under the No Action Alternative.

4.1.12 Bald Eagles

4.1.12.1 Alternative 1 (Proposed Action)

There are no expected impacts from the Proposed Action, on bald eagles or nest sites. No nest sites were observed during the bald eagle survey conducted in May 2006 (Appendix G).

In the event an active nest is discovered in the project area, no work will occur within 660 feet of the nest between March 1 and August 31, unless a trained observer is monitoring the nest.

4.1.12.2 Alternative 2 (No Action)

Bald eagles and nesting bald eagles will not be impacted under the No Action Alternative.

4.1.13 Endangered, Threatened, and Candidate Fish, Wildlife, and Plant Species

4.1.13.1 Alternative 1 (Proposed Action)

According to the USFWS (USFWS correspondence, Appendix G), there are no federally listed or proposed species and/or designated or proposed critical habitat within the project area. No further consultation under Section 7 of the Endangered Species Act is required, unless new information reveals project impacts to listed species or critical habitat in a manner not previously considered.

There are no Threatened and Endangered Species under NMFS responsibility located within the project area (NMFS correspondence, Appendix G).

The Proposed Action will not affect endangered, threatened, or candidate fish, wildlife, or plant species.

4.1.13.2 Alternative 2 (No Action)

The No Action Alternative will not affect endangered, threatened, or candidate fish, wildlife and plant species.

4.1.14 Wetlands

This project was developed in compliance with the FAA Memorandum of Agreement Regarding Impacts to Wetlands and Other Aquatic Resources, Mitigation, and Airport Improvement Projects and Executive Order 11990. The Wetlands Avoidance and Minimization Checklist are provided in Appendix D. Table 4-2 shows the impacts on wetlands and waters of the U.S. for the Proposed Action and the No Action alternatives.

Table 4-2 Comparison of Wetland Impacts for Proposed Action and No Action Alternatives

Proposed Action	Acres of Potential Impact	No Action	Acres of Potential Impact
Alternative 1 – Relocate Airport Runway, Aprons, and RPZ's	2.30*	Alternative 2 – No Action	0.00
Inland River Access Road Alternative	0.00		
Existing Barge Landing Site	0.00		
River Haul Route	0.00		
MS-5	52.0**		
Total	54.3	Total	0.00

Notes:

RPZ = runway protection zone

* = These wetland areas are adjacent to areas that will be mechanically cleared; there is no anticipated impact planned for these areas.

** = Waters of the United States; fill material dredged from the Tuluksak River

4.1.14.1 Alternative 1 (Proposed Action)

The Proposed Action was chosen to avoid wetland impacts. Land clearing and construction of the runway, aprons, and the north RPZ are confined entirely to uplands. The construction of the Inland River Access Road and the haul roads, and use of the existing barge landing site, will not impact wetlands. The eastern and western margins of the southern RPZ have been identified as wetlands (2.3 acres) (Figure 3-2); however, it is not anticipated that the clearing of woody vegetation within the center of the RPZ will affect the identified wetlands. The

proposed fill material source site, MS-5, is located within a navigable water of the U.S. and is subject to Section 404/10 of the Clean Water Act.

In an attempt to avoid impacts to waters of the U.S., a number of upland borrow sites were considered. Though not an upland source, MS-5 was determined to be the best site because it involves no organic overburden and offers material that is substantially lower in organics than other sites, and because of concerns about erosion expressed by the village. MS-5 was agreed upon as the proposed borrow site by resource agencies at a meeting (Appendix G, Agency Meeting Notes, January 30, 2006).

4.1.14.2 Alternative 2 (No Action)

Wetlands will not be impacted under the No Action Alternative.

4.1.15 Floodplains

4.1.15.1 Alternative 1 (Proposed Action)

Pursuant to Executive Order (E.O.) 11988 which directs Federal agencies to take action to reduce the risk of flood loss, minimize the impacts of floods on human safety, health and welfare and restore and preserve the natural and beneficial values served by floodplains this project; The new airport runway embankment will be constructed on existing ground that is below the elevation of the high water marker set by USACE. There is no practicable alternative to avoid floodplain encroachment. Approximately 253,000 cubic yards of construction fill material will be placed in floodplains for road and runway embankment construction. All of the construction fill material will be obtained from below the OHW mark within the Kuskokwim River. The floodplain is thousands of acres larger than the runway footprint, it is anticipated that embankment construction will have negligible effect on floodplains.

Construction of the airport access road, temporary haul roads, development of the material site, and use of the barge landing site are all located within the floodplain. Culverts will be placed within embankments at topographical low points to maintain drainage.

Since floods are caused by downstream river ice jams, and the proposed improvements are upstream of community development and in an area that will not increase the potential for ice jams, no significant impact to existing development is anticipated from the Proposed Action.

4.1.15.2 Alternative 2 (No Action)

Under the No Action Alternative, the existing airport will continue to be at risk to spring floods, which could interfere with aircraft operations and resulting community disruptions.

4.1.16 Coastal Zone Management Program

4.1.16.1 Alternative 1 (Proposed Action)

The Proposed Action appears to be consistent with the goals, standards, and policies of both the State and local ACMP. The draft Coastal Project Questionnaire and certification statement application and supporting documents and other state and federal draft permit applications are provided in Appendix B. There are no coastal barriers designated by the Coastal Barriers Act of 1982 within the State of Alaska.

4.1.16.2 Alternative 2 (No Action)

Under the No Action Alternative, the existing airport will continue to operate, and no Certification under the ACMP would be required.

4.1.17 Wild and Scenic Rivers

According to the Nationwide Rivers Inventory website, no wild, scenic, or recreational rivers exist in the Tuluksak area.

4.1.18 Farmland

According to the National Resources Conservation Service website, farmland does not occur within the affected environment in Tuluksak.

4.1.19 Light Emissions and Visual Impacts

4.1.19.1 Alternative 1 (Proposed Action)

Development of a new airport will result in light emissions from an area where none previously existed. New light sources will include medium intensity runway lighting, a rotating beacon, a lighted wind cone in a segmented circle, a FAA Precision Approach Path Indicator, and exterior lights for the DOT&PF equipment storage building. The runway lighting system will be pilot-activated and used only as necessary for aircraft operations.

Airport lighting will be designed for operational areas of the runway and will have no glare impacts to residential areas. All of the light sources are located at a level below treetop, which will prevent light emissions from reaching the community. Light emission problems are not expected to affect the Village of Tuluksak, because the airport will be located 1 mile east of the community and shielded by trees. Concerns about off-site light emissions have not been raised by residents of Tuluksak.

Light emissions from heavy equipment used at the material site, the barge landing site, and the haul roads are anticipated to be temporary in duration, and have no adverse impact on the community. No additional light emissions are anticipated with the construction of the Inland River Access Road.

4.1.19.2 Alternative 2 (No Action)

Light emissions in the Tuluksak area will remain unchanged under the No Action Alternative. Medical evacuation services would remain unavailable during hours of darkness.

4.1.20 Hazardous Materials, Pollution Prevention, and Solid Waste

All solid waste generated during construction and the operation of the airport will be handled and disposed of in accordance with ADEC solid waste management guidelines. Based on information provided by ADEC, and the results of a field survey conducted by DOT&PF and consultants in July 2005, the project site has a very low probability of becoming affected by hazardous materials, based on the current community land use (Appendix C).

4.1.20.1 Alternative 1 (Proposed Action)

The Proposed Action is expected to generate a minimal quantity of solid waste. Most of the solid waste will consist of trees and slash from the clearing of the airport runway and access road. Trees will be offered to the community as firewood, and the slash will be burned on site.

Non-hazardous debris from equipment maintenance activities and workers operations is also expected. The contractor will be responsible for the removal and/or disposal of all non-hazardous waste.

Non-hazardous waste from construction activities and solid waste generated from the operation of the airport will be disposed at the Tuluksak Class III Solid Waste Landfill. Approval from the IRA council will likely be required to use the landfill. The contractor will be responsible for providing on-site sanitary facilities, and all waste will be disposed of at the existing landfill in accordance with applicable local, state, and federal regulations.

Any petroleum-contaminated soils or hazardous materials, such as acids, solvents, explosives, lead acid batteries, or used oil generated by construction of the Proposed Action, will be transported from Tuluksak to an approved municipal solid waste landfill. There are no known contaminated or Leaking Underground Storage Tank sites in the Tuluksak area (ADEC, 2005b).

The Proposed Action would be in compliance with FAA Order 5200.5A, since it would move the airport to more than 5,000 feet from the landfill and sewage lagoon. The new airport would be located approximately 5,100 feet from the sewage lagoon and 6,000 feet from the existing landfill.

A Hazardous Contamination Assessment (Appendix C) performed for the Tuluksak Airport Relocation project stated that the project has a low potential for encountering petroleum or hazardous material contamination. The abandoned Tuluksak Power Plant was identified as a site with a potential to encounter surface and subsurface contamination if ground-disturbing activities were conducted. The abandoned Tuluksak Power Plant is located at the western terminus of the Inland River Access Route, which is the preferred alternative material haul route (Figure 2-1).

4.1.20.2 Alternative 2 (No Action)

The No Action Alternative will not increase solid waste or hazardous waste generation in the Tuluksak area. The landfill is located approximately 1,000 feet away from the current airport runway, and the sewage lagoon is located 2,000 feet away. The No Action Alternative will not be in compliance with FAA Order 5200.5A, since it will still be within 5,000 feet of the landfill and sewage lagoon.

4.1.21 Energy Supply and Natural Resources

4.1.21.1 Alternative 1 (Proposed Action)

The amount of energy for operating the medium intensity runway lights for the new runway is estimated at 26 kilowatts. This intermittent energy need is expected to place a slight increase in demand on the Traditional Power Utility in Tuluksak, but not in excess of their power generation capacity. An overhead (OH) electric extension will be constructed from the existing electrical distribution system in Tuluksak to the airport. The OH electric will be constructed within the area disturbed for the access road; no additional impacts are anticipated from the OH electric installation.

Construction and operation of a new airport is not expected to increase fuel consumption of aircraft, but a slight increase in fuel consumption for ground vehicles is anticipated because of the longer drive to the airport from the community. The clearing of the airport property will provide the village of Tuluksak with firewood, which will decrease the demand for other energy sources to heat homes in the community.

The approximately 253,000 cubic yards of fill material removed from MS-5 will not impact the community's supply of building material since it will come from a newly developed source. Since local materials will not meet the requirements for crushed aggregate surfacing or base, aggregate for surfacing will be contractor provided and come from commercial sources. Transporting aggregate from off-site sources will require fuel that would not be used if aggregate came from local sources.

The temporary haul roads will not impact energy supplies or natural resources in the Tuluksak area. The development and use of the haul roads will not affect the public water supply. Water for the ice roads will be pumped from the Tuluksak River in accordance with conditions stipulated in the ADNR Title 41 permit and ADNR temporary water use permit.

Fresh water for the ice roads will be pumped from the Tuluksak River. Fill material is anticipated to be supplied from a material site on ADNR lands. Based on geotechnical investigations performed to date, the local material sources contain sufficient fill material to meet the construction of the new airport. Crushed aggregate for the runway surfacing and base course will be contractor provided, and will be barged from commercial sources in western Alaska.

4.1.21.2 Alternative 2 (No Action)

Energy supplies and natural resources in the community will not be impacted by the No Action Alternative.

4.2 CONSTRUCTION IMPACTS

4.2.1 Alternative 1 (Proposed Action)

The existing airport will continue to function while the new airport is under construction. The 1-mile separation between the runway construction site and the community is sufficient to mitigate the anticipated temporary, localized, and negligible effects on air quality and noise during construction.

Transporting fill material from the staging area near the existing airport is also expected to have similar impacts to air quality within the community, because of the use of dust palliatives and watering of the road surface. Vehicle noise in the community is anticipated to be temporary in duration, affecting the local community, and moderate in the intensity of the impact.

Implementing BMPs and the SWPPP will control erosion and surface runoff of pollutants from migrating off site into wetlands and waters of the United States.

The construction of the airport will require the storage of fuel on site. The fuel storage area will be located in uplands a minimum of 100 feet from water bodies and wetlands. The implementation of a SPCC Plan is expected to minimize fuel spills and the release of petroleum products into the environment.

4.2.1.1 Material Sites

A total of 253,000 cubic yards of borrow embankment material, 18,000 cubic yards of sub-base material, and 18,000 cubic yards of crushed aggregate surfacing material will be required for the completion of the preferred alternative. The sub-base material will be constructed on the embankment and then surfaced with a crushed aggregate material. All material extraction for borrow embankment material will be from MS-5 and will occur during the winter. The borrow embankment material will be transported to the new airport and/or stockpiled within uplands on the existing airport property. The material will be loaded into trucks and moved to the project site, using established roads and an ice road, or one of two temporary ice haul roads on the frozen Tuluksak River, and overland to the project site.

If the preferred material site, MS-5, is later determined to be unusable, the construction contractor will notify DOT&PF, and appropriate agencies, to get approval and permits to use other material sources. DOT&PF contract language will require that the Contractor be responsible for ensuring all required permits, and that clearances are obtained prior to the start of construction. Prior to project completion, the on-site sources will be reclaimed in accordance with the material site reclamation plan approved by ADNR for this project.

MS-5 will not have any adverse effect on EFH. Borrow material will be excavated from the sandbar during the winter. The sandbar will be excavated at least to three feet below existing grade and likely below the OHW.

Winter excavation will effectively eliminate any possibility of fish entrapment or stranding. To prevent fish entrapment, at the completion of the excavation the finished grade will be convex in shape with a high point in the center and sloping to lower elevations on the edges. Winter excavation will also minimize the introduction of fines and sediments into the river.

Winter excavation will avoid the introduction of sediments and turbidity into the river during the spring and summer when juvenile salmonids are out-migrating from the Tuluksak River. Winter excavation will also avoid the time period when adult salmon are returning to the river to spawn.

MS-5 and other local material sources do not meet the required quality for sub-base and crushed aggregate surfacing material. These materials will be imported by barge from existing permitted commercial sources. The nearest commercial source for these materials is Goodnews Bay, approximately 160 miles from Tuluksak. Barged materials would either be stockpiled within uplands on the existing airport property for later haul and placement on embankments, or hauled directly from the barge to the embankments for placement.

4.2.1.2 Barge Landing Site

The existing barge landing site, located near the north end of the existing airport on the east bank of the Tuluksak River, will be used for off-loading equipment and/or gravel material (Figure 2-2). No new construction will be required to prepare the existing barge landing site for receiving material and equipment.

4.2.2 Alternative 2 (No Action)

No construction impacts will occur under the No Action Alternative.

4.3 SECONDARY AND CUMULATIVE IMPACTS

In determining whether an environmental impact statement is required for a proposed action, it is necessary to consider the overall cumulative impact of the Proposed Action and the consequences of subsequent related actions. Council on Environmental Quality (CEQ) 1508.7 states that:

“Cumulative impact is 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 (Federal or non Federal) or person undertakes such action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

No secondary or cumulative impacts are anticipated from activities related to Alternative 1 (Proposed Action) or Alternative 2 (No Action). All activities related to the construction of

the new airport, including access and temporary haul roads, barge landing site, material site, equipment and material staging areas, will be mitigated using BMPs, SWPPP, SPCC Plan, and adherence to the conditions of the state and federal permits.

After the new airport begins operation, the existing airport will be available for disposal at the state's discretion according to applicable statutes. The Tuluksak Community Plan has identified the current airport property as desirable for residential development. Use of the disturbed airport property for redevelopment would minimize impacts to current undisturbed areas for needed residential development.

Other known or planned projects in Tuluksak include on-going construction of a piped water and sewer system and wastewater treatment lagoon. Neither project will be impacted by the Proposed Action as they are in separate areas, constructed during the summer, and have minimal need for the once barge landing site.

4.4 REQUIRED PERMITS AND APPROVALS

Relocation of the airport to a new site will require the federal, state, and local permits and notifications identified in Table 4-3.

4.5 MITIGATION

Mitigative measures were incorporated into the development of the preferred alternative. Proposed mitigation measures are summarized in Table 4-3.

Table 4-3 Mitigation for Tuluksak Airport Relocation

Environmental Element	Proposed Mitigation
Air Quality	<ul style="list-style-type: none"> • Use water to control dust at material sites prior to excavation, • Application of a dust palliative such as calcium chloride, • Phase development to minimize disturbed areas during construction, • Use wind fencing or similar erosion control measures, • Reduce vehicle speed on excavation site, and • Cover and/or stabilize fill material stockpiles and material sources.
Water Quality	<ul style="list-style-type: none"> • Water quality impacts will be mitigated by implementing a <i>Storm Water Prevention and Pollution Plan (SWPPP)</i> • Prepare a detailed Erosion and Sediment Control Plan (ESCP) to prevent construction-induced water quality degradation of local creeks, ponds, and wetlands.
Historical, Archetectural, Archaeological, & Cultural Resources	<p>If cultural, archaeological, or historical sites are discovered during project construction, cease work at the affected site and contact SHPO. Do not resume work in the vicinity of the site until written clearance from the SHPO is issued to the Project Engineer.</p>
Fish, Wildlife, & Plants	<ul style="list-style-type: none"> • Aviod vegetation clearing, site preparation acivity, and placement of fill from May 5 to July 25 to protect migratory bird nesting sites. • Conduct a bald eagle nest survey within ¼ mile radius of the project site prior to the start of construction. If active nest found within 660-feet of the project area (primary and secondary protection zones), ADOT&PF will consult with USFWS to determine appropriate action. • Revegetate disturbed areas to prevent erosion and sedimentation. • Excavation at the borrow site (within the Kuskokwim River bed) will take place during the winter months. • To prevent fish entrapment at the completion of material excavation, the finished grade will be convex in shape with the high point in the center and sloping to lower elevations on the edges. • During excavation a buffer will be retained between the borrow pit and the active river channel to prevent erosion and protect water quality.
Wetlands	<ul style="list-style-type: none"> • Clearing around and near wetlands will take place during the winter months to minimize inadvertant damage to unaffected wetlands.

Table 4-3 Mitigation for Tuluksak Airport Relocation (continued)

Environmental Element	Proposed Mitigation
Light Emissions & Visual Effects	<ul style="list-style-type: none"> • The runway lighting system will be pilot-activated and used only as necessary for aircraft operations. • All lighting sources are located below treetop level which will prevent light emissions from reaching the community. • Light emissions from heavy equipment used at the material site, barge landing and haul roads are anticipated to be temporary in duration.
Hazardous Materials, Pollution Prevention, and Solid Waste	<ul style="list-style-type: none"> • All solid waste generated during construction and the operation of the airport will be handled and disposed of in accordance with ADEC solid waste management guidelines. • Slash from clearing will be burned on-site, wood will be given to the community for home heating thereby minimizing the amount of organic matter transported to the landfill.
Energy Supply and Natural Resources	<ul style="list-style-type: none"> • OH electric will be constructed within the area disturbed for the access road; no additional impacts are anticipated from the OH electric installation. • Local fill sources will not be tapped for this project; a new fill source will be developed, excavated and closed
Construction Impacts	<ul style="list-style-type: none"> • Use of dust pallatives will minimize the impact of dust on the community during construction. • Excavation and transportation of fill material during winter months mitigates the potential for additional dust to be created by the heavy equipment traveling on local roads . • Excavated materials will be hauled to upland areas within the project site thereby minimizing the transport of materials over local roads during construction. • Implement BMPs to control erosion and the potential for sediment migration to surface water. • Winter excavation of fill material from the MS-5 site will avoid the introduction of sediments and turbidity into the river during the spring and summer when juvenile salmon are out-migrating from the Tuluksak River.

4.6 OTHER CONSIDERATIONS

There are no identified conflicts between the Proposed Action and the objectives of federal, state, regional, and local land-use plans and policies. The existing airport conflicts with the Tuluksak Native Community (TNC) Plan. The TNC Plan identifies the north runway protection zone as an area for future residential development. The TNC Plan also identified the Village Selection and areas east of the community, including the proposed access roads to the new airport, as protected open space that should remain protected from development (Nairne, 2001).

Table 4-4 Permits and Applicable Federal, State, and Local Laws and Regulations

Agency/Entity	Type	Rationale
U.S. Army Corps of Engineers	Section 404/10 Permit	To remove approximately 253,000 cubic yards of borrow material from 52 acres on a sandbar below ordinary high water (OHW).
U.S. Environmental Protection Agency	Spill Prevention Control and Countermeasures Plan	Required for projects that store more than 1,320 gallons of fuel.
U.S. Environmental Protection Agency	National Pollutant Discharge Elimination System General Permit for Stormwater Discharges from Large and Small Construction Activities Storm Water Pollution Prevention Plan Review for projects one acre or more in size	Required for projects one acre or more in size, to control erosion and surface water runoff into adjacent wetlands and water bodies during construction.
U.S. Fish & Wildlife Service	Right-of-way (ROW) Permit	A ROW Permit is required before an access road can be constructed on federal land managed by the Yukon Delta National Wildlife Refuge.
Alaska Department of Environmental Conservation	Certificate of Reasonable Assurance 401 Certification	A permit to remove approximately 253,000 cubic yards of borrow material from a sandbar below OHW.
Alaska Department of Natural Resources	Fish Habitat Permit Title 41	Required to do work in an anadromous river, such as taking embankment material from the river bar and for material transport over anadromous waters.
Alaska Department of Natural Resources	Material Sale Agreement	Required to purchase embankment material.
Alaska Department of Natural Resources	Material Site Reclamation Plan for material sites over 5 acres in size or mined 50,000 cubic yards or more	Required to take embankment material from the river bar.
Alaska Department of Natural Resources	Land Use Permit	Required to take embankment material from the river bar.

Table 4-4 Federal, State, Local and Private Permits, Approvals, and Agreements (continued)

Agency/Entity	Type	Rationale
Alaska Department of Natural Resources	Applicant Environmental Risk Questionnaire	Required by Alaska Department of Natural Resources if the project involves state lands. Questionnaire helps identify the level of environmental risk that may be associated with the proposed activity.
Alaska Department of Natural Resources	Off Road Travel Supplemental Questionnaire	Must accompany the Land Use Permit.
Alaska Department of Natural Resources	Temporary Water Use Permit	Required to use water taken from the Tuluksak River during construction for compaction and dust abatement.
Alaska Department of Natural Resources, State Historic Preservation Officer	Cultural Resource Concurrence	Required to verify that the project will not disturb historic properties.
Alaska Department of Natural Resources	Coastal Zone Consistency Determination	Required to verify that the project is consistent with the Alaska Coastal Management Program
Alaska Department of Natural Resources	Interagency land management assignment (ILMA) for Navigation Easement	Required for runway approach airspace by Federal Aviation Administration.
Cenaliulriit Coastal Resource Service Area	Concurrence with the Coastal Zone Consistency Determination	Required to verify that the project is consistent with the requirements of the Cenaliulriit Coastal Resource Service Area.
Moravian Mission	Right of Entry Permit/Permission	Required to access lands owned by the Moravian Mission; barge landing area is owned by Moravian Mission.
Moravian Mission	Temporary Construction Easement/Permission	Required to construct a temporary road from the barge landing area over lands owned by the Moravian Mission.
Tuluksak IRA Council	Approval for landfill use	Required to dispose of municipal waste generated as part of the Proposed Action.

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5.0 COMMENTS AND COORDINATION

5.1 PUBLIC INVOLVEMENT HISTORY

Public involvement began in 1996, with the master planning effort for the Tuluksak Airport. A public meeting was held May 10, 1996, in the main assembly room of the IRA Community Center in Tuluksak. Members of the community and the officials with Tuluksak Native Community participated actively in the meeting. The purpose of the meeting was to determine the needs and concerns of the community, review aerial photographs of the existing airport, and compare typical airport layouts meeting the FAA Standard for Class B-II airports. Public comments were gathered and are detailed in the DOT&PF Draft Phase I Report, for Tuluksak Airport Relocation, dated February 1997.

However, due to lack of consensus for a preferred alternative, the project was put on hold. Nevertheless, the community and DOT&PF did reach agreement, and the Tuluksak Native Community adopted a Resolution of Support on June 4, 2004, for relocating the airport (Resolution No. 03-10-35 located in Appendix G), to the site east of the community.

5.2 PUBLIC PARTICIPATION

As a result of passing Resolution No. 03-10-35, the project was restarted in 2005. An open house and public meeting was held in Tuluksak on July 28, 2005. The purpose of the meeting was to confirm the proposed airport location as it was described in the resolution, to discuss alternative airport access routes, to discuss material site alternatives, and to gather local knowledge about the area to assist in the development and selection of a preferred road access alternative. An estimated 25 to 30 people attended at any one time during the 2-hour meeting. The agenda, along with a set of handouts describing the existing airport deficiencies, proposed project advantages, and environmental concerns, and an aerial map, were distributed to participants.

During the public meeting most of the comments focused on the access road alternatives. Participants expressed concern that the Landfill and Village Land Alternatives could create access to areas used for subsistence activities (hunting, fishing, trapping, and berry-picking) and that they cross winter trails.

The community also expressed concerns that the River Alternative could cause bank erosion along the Tuluksak River, and it will create a higher-speed straightaway with the potential for routing high-speed travel (ATVs) through a residential neighborhood. There were also concerns about access restrictions to private property under this alternative.

Mr. Moses Peter of the Tuluksak Native Community expressed concerns with the access road alternative adjacent to the Tuluksak River through private property, and material source alternatives within subsistence hunting areas. Both of Mr. Moses' concerns have been mitigated by routing the access road away from the river, and selecting a sandbar in the Kuskowkwim River for the material source where there is no hunting activity.

Comment sheets were left with the community for additional comments and to give absent residents an opportunity to comment. A list of meeting attendees and a record of public comments are provided in Appendix F.

5.3 AGENCY SCOPING

A project scoping letter was mailed to local, state, and federal agencies on August 22, 2005 (Appendix G). Agency scoping meetings were held in Anchorage on September 8, 2005, and January 30, 2006, and records are included in Appendix G.

Table 5-1 Summary of Federal, State, and Local Agency Comments

Agency	Agency Scoping Meeting Attendance (Y/N)	Comments
ADNR - OHMP	N	No Comment Received
ADNR - SHPO	N	Finding of "No Historical Properties Affected" (01/08/07)
ADNR - OPMP	N	No Comment Received
ADEC – Stormwater and Wetlands	N	No Comment Received
Calista Corporation	N	Email – "Low risk for disturbing any historical or cultural features." (03/14/07)
NOAA - NMFS	N	Email - "NMFS has no comments or concerns at this time." (08/31/05)
USFWS – Bethel Office	N	No Comment Received
USACE	N	No Comment Received
USFWS – Anchorage Office	Y	Six page letter received 09/22/05 found in Appendix E letter suggests mitigation measures, included in the mitigation measures summary. No T&E species within project area.
USFWS – NEPA Coordinator	N	No Comment Received
DCEED	N	No Comment Received
NRCS	N	No Comment Received
Tuluksak Native Community	N	No Comment Received
Tulukisarmute Inc.	N	No Comment Received
Cenaliulriit CRSA	N	No Comment Received

6.0 LIST OF PREPARERS

The people who prepared this EA included:

- Tom Arminski, Senior Regulatory and Permitting Manager, Bristol Environmental & Engineering Services Corporation
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- Lawrence Dugan, Senior Environmental Analyst, Bristol Environmental & Engineering Services Corporation
- Susan Luetters, Environmental Scientist, Bristol Environmental & Engineering Services Corporation
- Frank Rast, P.E., Project Manager, R&M Consultants, Inc.
- Michelle Turner, Environmental Specialist, Bristol Environmental & Engineering Services Corporation

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