

EKWOK AIRPORT REHABILITATION



ENVIRONMENTAL ASSESSMENT

PROJECT NO. 55377

DRAFT

December 2003

Prepared for:
Federal Aviation Administration
Airports Division – AAL 600
222 West 7th Avenue, Box 14
Anchorage, Alaska 99513

On behalf of the sponsor:
State of Alaska
Department of Transportation &
Public Facilities - Central Region
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Subject: Ekwok EA Release

Don,

The FAA has received and reviewed the draft Environmental Assessment (EA) of the "Ekwok Airport Rehabilitation Project" (dated December 2003). Based upon our review, we find it acceptable for distribution to the public and to the environmental resource and regulatory agencies.

Please ensure that copies of the draft EA are sent to all agencies that were involved in the development of the EA; and ensure a "Notice of Availability" is published in the local paper and sent to the EA distribution list. The "Notice of Availability" should include the opportunity to request a public hearing. Furthermore, a copy of the notice should be included within the final EA document.

If you have any questions on the public notification requirements please do not hesitate to contact me at 271-5460.

Brad A. Garland
FAA Airports Division
Alaska Region

ENVIRONMENTAL ASSESSMENT

Ekwok Airport Rehabilitation

Ekwok, Alaska

Project No. 55377
AIP No. 3-02-0088-02-03

Prepared for:
Federal Aviation Administration

Prepared on Behalf of the Sponsor:
Alaska Department of Transportation & Public Facilities
Central Region

This Environmental Assessment is approved by the Alaska Department of Transportation and Public Facilities with the following signatures:

Michael J. Scott, ADOT&PF, Central Region Director **Date**

Robert A. Campbell, P.E., Chief, Pre-Design & Environmental **Date**

Steven R. Horn, P.E., ADOT&PF, Regional Preconstruction Engineer **Date**

This Environmental Assessment becomes a federal document when evaluated and signed by the responsible federal official.

Responsible FAA Official **Date**

Comments regarding this document should be addressed to:

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AIRPORT DEFINITIONS

(As defined in FAA AC 150/5300-13, Airport Design, and
FAR Part 77, Objects Affecting Navigable Airspace)

<p>Airport Reference Code (ARC)</p> <p><u>EKWOK Proposed</u></p> <p><u>EKWOK Proposed</u></p>	<p>The ARC is a coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. The ARC has two components relating to the design aircraft.</p> <p>The first component, depicted by a letter, is the aircraft approach category and relates to the aircraft approach speed.</p> <ul style="list-style-type: none"> Category A: Speed less than 91 knots. ➤ Category B: Speed 91 knots or more but less than 121 knots. Category C: Speed 121 knots or more but less than 141 knots. Category D: Speed 141 knots or more but less than 166 knots. Category E: Speed 166 knots or more. <p>The second component, depicted by a Roman numeral, is the airplane design group, and relates to the airplane wingspan.</p> <ul style="list-style-type: none"> Group I: Up to but not including 49 feet. ➤ Group II: 49 feet up to but not including 79 feet. Group III: 79 feet up to but not including 118 feet. Group IV: 118 feet up to but not including 171 feet. Group V: 171 feet up to but not including 214 feet. Group VI: 214 feet up to but not including 262 feet. <p>The combination of the approach category and design group is the ARC, shown as A-I, B-II, etc.</p>
<p>APPROACH Categories:</p> <p>Nonprecision Instrument Approach (NPI) <u>EKWOK Alt. A, B, C</u></p> <p>Visual Approach <u>EKWOK Alt. A-1, D</u></p>	<p>An instrument approach providing course guidance without vertical path guidance. Instrumentation required for NPI approaches include VOR, NDB, LDA, GPS or other authorized runway navigational aid systems. Authorized instrument procedures are developed and published in the US Terminal Procedures Manuals. NPI approaches allow operations during certain inclement weather conditions.</p> <p>A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan, a military service approved military airport layout plan, or by any planning document submitted to the FAA by competent authority.</p>
<p>Object Free Area (OFA)</p>	<p>An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.</p>
<p>Primary Surface</p> <p><u>EKWOK Alt. A, B, C</u></p> <p><u>EKWOK Alt. A-1, D</u></p>	<p>"A surface longitudinally centered on a runway...when the runway has no specially prepared hard surface" (pavement), "the primary surface ends at the end of the runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface is:"</p> <p>(2) 500 feet for runways having Non-Precision Instrument Approaches for aircraft with greater than 12,500 lbs. maximum takeoff weight. Objects penetrating this surface are considered obstructions to airspace.</p> <p>(1) 250 for utility runways having only visual approaches" (minimum dimension provided by the Federal Regulations for Civil Airports). Objects penetrating this surface are considered obstructions to airspace.</p>
<p>Runway</p>	<p>A defined rectangular surface on an airport prepared or suitable for the landing or takeoff of airplanes.</p>
<p>Runway Protection Zone (RPZ)</p>	<p>An area off the runway end to enhance the protection of people and property on the ground.</p>
<p>Runway Safety Area</p>	<p>A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.</p>
<p>Transitional Surface</p>	<p>These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface, extend a distance of 10,000 feet measured horizontally from the edge of the approach and at right angles to the runway centerline.</p>

ACRONYMS

AASP	Alaska Aviation System Plan
AC	Advisory Circular
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish & Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
ALP	Airport Layout Plan
ANCSA	Alaska Native Claims Settlement Act
ARC	Airport Reference Code
AWOS	Automated Weather Observation System
BBHA	Bristol Bay Housing Authority
BBNA	Bristol Bay Native Association
BBNC	Bristol Bay Native Corporation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP's	Best Management Practices
DCED	Alaska Department of Community and Economic Development
DOL	Alaska Department of Labor
EA	Environmental Assessment
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GPS	Global Positioning System
HMCP	Hazardous Materials Control Plan
HUD	U.S. Department of Housing and Urban Development
M&O	Maintenance and Operation
MIRL	Medium Intensity Runway Lighting
NPDES	National Pollution Discharge Elimination System
NPI	Non-Precision Instrument
RPZ	Runway Protection Zone
PAPI	Precision Approach Path Indicators
REIL	Runway End Identification Lighting
SHPO	State Historic Preservation Officer
SREB	Snow Removal Equipment Building
SWAMC	Southwest Alaska Municipal Conference
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey

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- Appendix A – Agency and Public Coordination
- Appendix B – Eliminated Alternatives
- Appendix C – Airport Layout Plan and Property Plan
- Appendix D – Phase I Preliminary Site Investigation: Part 1 & Part 2
- Appendix E – Historic Dump Site Investigation
- Appendix F – Wetlands
- Appendix G – Wildlife Hazard Assessment

1.0 SUMMARY

The Alaska Department of Transportation and Public Facilities (ADOT&PF), in cooperation with the Federal Aviation Administration (FAA), is proposing improvements to Ekwok Airport in Ekwok, Alaska (Figure 1). The project is located in Township 9 South, Range 49 West, Sections 25, 35, and 36 of the Seward Meridian. Located in the Bristol Bay region, Ekwok lies on the west bank of the Nushagak River, about 43 miles northeast of Dillingham and approximately 285 miles southwest of Anchorage. Ekwok is the oldest continually occupied Yup'ik Eskimo community on the river and was incorporated in 1974. The current population is about 130.

No roads connect Ekwok to other communities. Although a seasonal trail connects Ekwok to New Stuyahok, the primary means of transportation to and from Ekwok is either by river or by air. Since the river and the trail are impassable during part of spring breakup and fall freezeup, the airport is Ekwok's only link with other communities at those times.

Conditions exist at Ekwok Airport that fail to meet FAA standards, present potential safety hazards, and result in frequent airport closures. These deficiencies include:

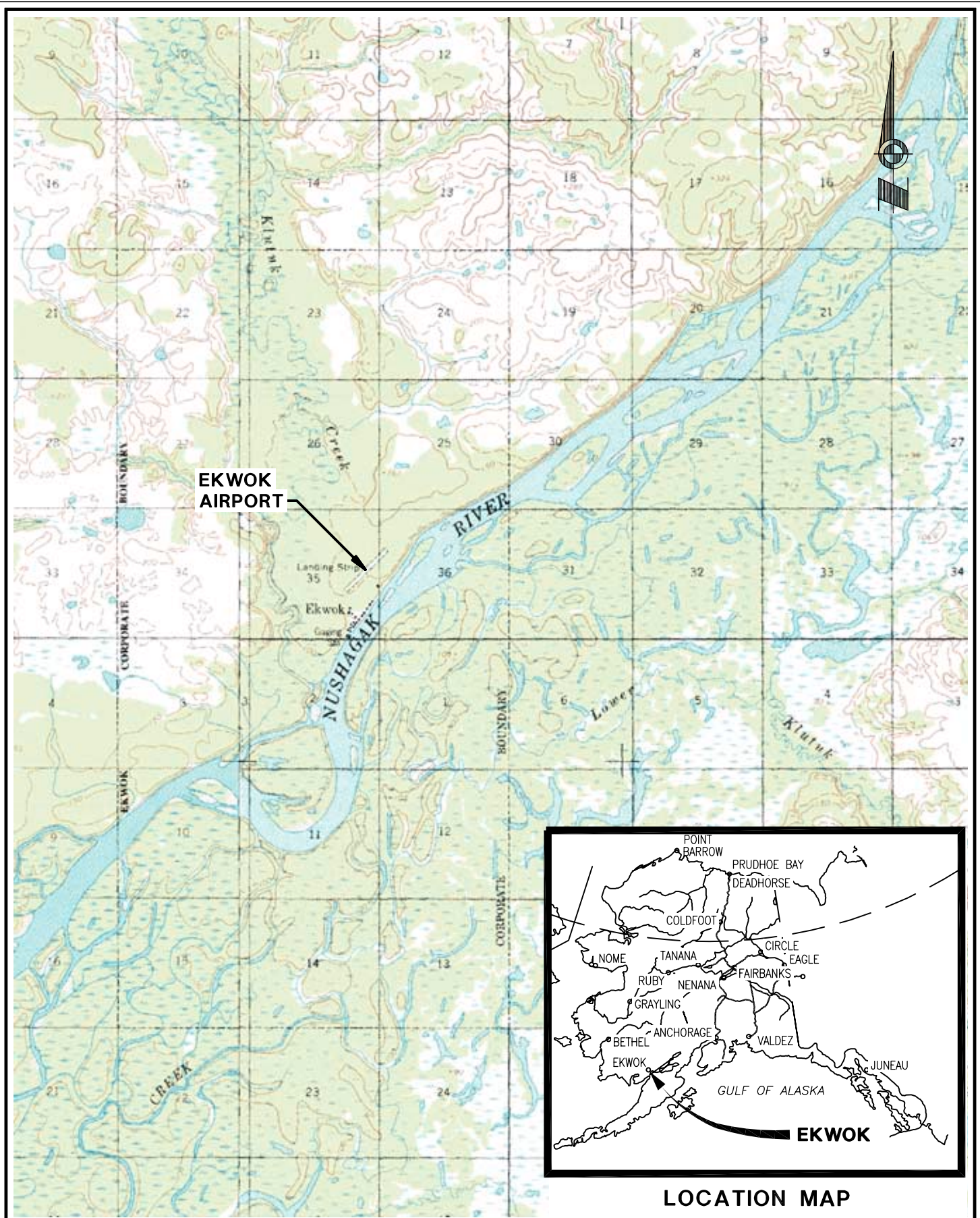
- Runway too short
- Safety area too short and narrow
- Aircraft parking apron too close to runway
- No runway lighting
- Poor runway surface
- Poor drainage
- Insufficient snow storage space
- Residences and trails in areas not allowed by FAA standards
- Runway too close to landfill and sewage lagoon

ADOT&PF proposes to remedy these deficiencies by relocating and extending the runway along a new alignment adjacent to the present site. Construction of the proposed improvements will:

- Expand the runway to accommodate the design aircraft identified for passenger, cargo, and medevac service with Non-Precision Instrument (global positioning system [GPS]) approach capabilities.
- Situate the apron and taxiway system at the required separation distances from the runway.
- Resurface the entire facility with crushed aggregate surface course.
- Provide ditching and grading to eliminate drainage problems and increase snow storage capacity.
- Install a pilot-operated airport lighting system.
- Shift the runway away from residences and relocate trails.
- Minimize land use conflicts by shifting the runway away from the sewage lagoon.
- Acquire property or easements necessary to make the proposed improvements.

These improvements will provide the residents of Ekwok with a safe, reliable facility to meet their transportation needs year-round.

This Environmental Assessment (EA) presents two proposed build alternatives (Alternatives B and C) and the No-Build Alternative (described in Section 3), then analyzes and compares the potential environmental impacts of each (discussed in Section 5). Based on this analysis, Alternative B has been selected as the Preferred Alternative.



P:\2002\F02009\N\N0100eaF02009: Vic Map

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PLANS DEVELOPED BY:
PDC, INC.

VICINITY & LOCATION MAP

**EKWOK AIRPORT REHABILITATION PROJECT
EKWOK, ALASKA**

DESIGN: KAR
DRAWN: RJP
CHECK: RLC
JAN 2003

PROJ. No.
F02009
FIGURE
1

2.0 PURPOSE AND NEED

2.1 Purpose and Need

The purpose of the proposed project is to remedy the deficiencies of the Ekwok Airport and improve the facility in order to provide:

- A safe airport that meets FAA standards for the current and future air traffic
- Better access for medical evacuations and other transport during poor weather conditions

The community of Ekwok uses the airport for transport of supplies and mail; for passenger travel for business, inter-village activities; and for medical evacuations (medevacs). Improvements to the Ekwok Airport are needed to correct conditions that do not meet FAA standards and/or the State of Alaska's established requirements for community airports (described in Section 2.2.2). In addition, the deteriorated conditions of the existing airport (Figure 2) emphasize the need for the proposed improvements. Ekwok Airport has the following deficiencies:

- The runway is too short to meet either FAA standards for the aircraft in use or State standards for community airports.
- The safety area is too short and too narrow.
- The aircraft parking apron is too close to the runway.
- There is no runway lighting.
- Poor drainage of the runway surface often makes it so rutted and soft that it is unusable.
- Limited snow storage space results in high snow berms accumulating along the runway edges; these berms narrow the runway, penetrate the airspace, and trap water on the surface.
- Residential properties and trails are located within areas not allowed under FAA Advisory Circular (AC) 150/5300-13 and Federal Aviation Regulation (FAR) Part 77, respectively.
- The landfill and the sewage lagoon are closer than permitted by FAA standards for distances from incompatible land uses as outlined in AC 150/5200-33.
- The airport property is not large enough to accommodate airport expansion or to allow tree clearing to support Non-Precision Instrument (NPI) approaches.

Relevant issues supporting the project purpose and need were identified during the scoping phase of the project. Methods used include personal telephone conversations, two public meetings, a community questionnaire, visits to the airport, correspondence with air carriers, and a resource agency meeting. See Appendix A for documentation.

Air travel is the community's only year-round lifeline, linking residents to other Alaska communities and supplying them with passenger service, food, supplies, and medicines. There are no roads connecting Ekwok to other communities. A seasonal trail runs from Ekwok to New Stuyahok, but this is typically only usable in the winter and in dry periods during the summer. The Nushagak River provides access by barge and skiff during the ice-free months, and by snowmachine in winter after it freezes. However, the river is often impassable, especially during spring breakup and in the autumn before the ice is thick enough for snowmachines.

Over the last several years there have been periods of time when the runway conditions have made landings impossible. Questionnaire responses (Appendix A) indicate that the residents expect airport closures every spring because the runway surface becomes too soft and muddy to use. In 2001, for example, the airport was completely closed for nine consecutive days (March 10-19), followed by a two-week period (April 3-17) when it was open for only 3-5 hours at a time between closures lasting from one to four days each (Appendix A, Public Involvement, Akelkok, 4/17/01). At community meetings residents have expressed concern that such conditions will coincide with the need for medical evacuations (Appendix A, Public Involvement). The City of Ekwok, the Ekwok Traditional Council, the Bristol Bay Native Corporation (BBNC), and the Bristol Bay Housing Authority have all petitioned ADOT&PF to upgrade the airport. See Appendix A for letters in support of the runway improvements.

2.2 Airport Facilities

2.2.1 Existing Airport Facilities



Photo 1 – South end of runway looking north

Ekwok Airport (shown on Figure 2) consists of a single gravel runway (2,720 feet x 75 feet; safety area 3,200 feet by 120 feet) with a taxiway connecting the runway to a 200-foot x 300-foot aircraft parking apron. A snow removal equipment building (SREB) stands on one corner of the apron. Navigational aids include a segmented circle, two unlighted wind cones, and passive approach slope indicators. The airport was last improved in 1983, and only routine maintenance has been completed since that time. The U.S. Flight Publication (Alaska Supplement) notes that the runway has several deep ruts and a dip in the center and recommends that pilots visually inspect the runway before landing.

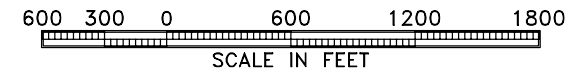
There is no runway lighting. Luminescent reflectors mark the edges of the runway, but many of them are bent, leaning, or tipped over. Even when upright, the reflectors only work with aircraft that have landing lights on both wings. The reflectors do not meet standards required for NPI approaches.

The separation distance for the apron setback and the runway protection zones (RPZ's) meet only the lowest category of airport classification (see Airport Definitions at front). The airport facilities do not meet the standards required for a number of the aircraft currently operating at the airport and do not support operations during inclement weather. At the south end of the runway, residential properties lie within the RPZ.



LEGEND:

--- EXISTING PROPERTY LINES



2.2.2 Facility Requirements

A B-II Airport Reference Code (ARC; see Airport Definitions) has been established for Ekwok Airport. The Alaska Aviation System Plan (AASP) recommends that community airports meet the design standards for a B-I ARC unless more demanding aircraft are in use, in which case the facility should accommodate these aircraft.

According to the *Ekwok Airport Scoping Summary Report* (PDC, March 2003), 98% of operations at Ekwok are by A-I through B-II aircraft, notably the A-II Cessna 208 Caravan and the B-I Piper PA-31 Navajo. In terms of runway width, the Caravan is the most demanding aircraft that frequently uses the airport. However, the Navajo has a more demanding length requirement than the Caravan. The Navajo is a twin-engine aircraft, allowing for NPI capabilities during inclement weather, and is the medevac aircraft operating out of Dillingham. For these reasons, the Caravan and the Navajo were selected as the design aircraft, and a B-II ARC is recommended.

Table 1 provides a comparison of the existing facility dimensions with those required to meet the B-II standards. The deficiencies illustrate the extent of the facility needs.

Table 1 – Existing Facility Compared to B-II Standards

Feature	Existing Airport	Ultimate Facility Requirements (B-II) ¹	Deficiency
Runway Length	2,720 feet	3,300 feet (minimum)	580 feet
Runway Width	75 feet	75 feet	None
Runway Safety Area Length	3,200 feet	3,900 feet	700 feet
Runway Safety Area Width	120 feet	150 feet	30 feet
Taxiway Width	40 feet	50 feet ¹	10 feet
Taxiway Safety Area Width	60 feet	118 feet ¹	58 feet
Apron and Aviation Support Area	200 feet x 300 feet	200 feet x 400 feet	20,000 square feet
Aircraft Parking Area Separation	140 feet	400 feet	260 feet
Runway Lighting	Deteriorated reflectors	Medium intensity runway lighting (MIRL)	Lack of runway lighting

¹ Taxiway and Taxiway Safety Area widths are increased to the next higher Aircraft Design Group (III) to provide snow storage area and allow for occasional use by larger aircraft.

Airport Activity Data

Historic and Current Activity: Ekwok receives the majority of its passengers and air freight, and all mail, through Dillingham Airport (the regional hub). Passengers from Ekwok transfer in Dillingham to carriers providing service to Anchorage or other destinations. Medevac flights typically originate in Dillingham, with patients being transported back to Dillingham for treatment at the Kakanak Hospital. More severe cases result in transport from Dillingham to Anchorage.

At least four air carriers provide service to Ekwok, primarily out of Dillingham. There is one based aircraft at Ekwok. Pilots identify the following aircraft as those they typically fly to Ekwok.

Table 2 – Fleet Mix

Aircraft	ARC Designation	Aircraft Use
Cessna 172 Piper PA-28 Cherokee	A-I	General Aviation
Cessna 206 and 207 Piper PA-32 Saratoga	A-I	Air Taxi & Charter
Cessna 208 Caravan	A-II	Air Taxi
McDonnell Douglas DC-3 DeHavilland Caribou	A-III	Charter
Piper PA-31 Navajo	B-I	Air Taxi & Medevac
Beech 1900	B-II	Charter

The FAA airport master records and enplanement records were reviewed to develop a database of historic activity at Ekwok Airport. Current activity was ascertained from pilot and air carrier reports. In 2001 the reported enplanements were 403 and the reported operations were 5,700. The operations are much greater than the reported enplanements because this number includes mail and cargo flights that do not have passengers, general aviation operation, and operations with unreported passengers.

Aviation Forecast: Forecast of operations and enplanements was based on historic data growth rates and population projections (PDC, 2003). In 2021, Ekwok Airport could experience up to 9,000 annual operations and 1,111 enplanements. The B-II facility with a single 3,300-foot runway is expected to meet the forecasted demand through 2021 because:

- Ekwok’s population is not expected to change substantially.
- Changes in economic factors that would affect the facility requirements are not anticipated.
- Ekwok is close enough to the regional hub at Dillingham that it is more economical to add flights with the aircraft currently in use than to fly larger aircraft to Ekwok.

2.3 Identification of Federal Action

The Federal action requested by ADOT&PF is approval of this environmental document and the Airport Layout Plan (ALP), as well as participation in funding the improvements described herein.

3.0 ALTERNATIVES

Alternatives were developed through evaluation of environmental, engineering, and land acquisition considerations. Potential relocation options were initially evaluated by reviewing U.S. Geological Survey (USGS) topographical maps, aerial photography, and community input. Alternative development was limited by the following topographic and land use constraints: to the south and southwest of Ekwok Airport is the City of Ekwok; to the southeast and east are more residential housing and the Nushagak River; to the northeast are undeveloped Native allotment lands; to the north are wetlands, the community landfill, and a 25-foot drop in the terrain; and to the west are more residential housing and a material pit. The community overwhelmingly supported keeping the runway in or near its current location (with some adjustments to avoid developed areas).

Four build alternatives were initially developed. The preliminary review eliminated Alternatives A and A-1, which would have extended the existing runway to the northeast along its present alignment (Appendix B, Eliminated Alternatives). This left Alternatives B and C, which relocate the runway adjacent to the existing airport at slightly different orientations (Figures 3 and 4), for consideration in this Environmental Assessment (EA). The No-Build Alternative was also evaluated.

Alternative B, Alternative C, and the No-Build Alternative are described below. Initially, Alternative C was identified as the most desirable. However, because of uncertainty about whether and when the land needed for Alternative C could be acquired, it was decided to pursue Alternative B instead. The City, the Village Council, Ekwok Natives, Ltd., and a number of community residents have expressed their support of this decision (Appendix A, Public Involvement, Emergency Meeting, 2/17/03). Alternative B meets the community's needs without the potential land acquisition conflicts that could delay construction of Alternative C. Thus, Alternative B has been selected as the Preferred Alternative.

The potential environmental impacts of each alternative are discussed in Section 5, Environmental Consequences. Neither build alternative would have significant impacts.

3.1 Alternative B – Preferred Alternative

Description

Alternative B (Figure 3) shifts the entire airport northeast and rotates the runway approximately 6 degrees counterclockwise. The taxiway and apron will remain on the east side of the runway.

Features of Alternative B include:

- 3,300-foot by 75-foot runway with 3,900-foot by 150-foot safety area
- Medium intensity runway and taxiway lighting system
- 200-foot by 400-foot apron with adjacent lease lots on the east side of the runway
- Acquire adequate land to support aviation uses
- Segmented circle, lighted wind cone, rotating beacon, precision approach path indicators (PAPI), and runway end identification lighting (REIL)
- Pad for future installation of Automated Weather Observation System (AWOS)

The runway embankment will consist primarily of borrow material (approximately 75,000 cubic yards). This material may come from excavation alongside the proposed runway, affecting as much as 25 acres, or from expansion of the existing material site (described in Sections 4.6 and 5.11) located northwest of the airport. About 14,000 cubic yards of surface course is likely to come from expansion of the existing material site. An estimated 51,000 cubic yards of subbase material will come from either the side-borrow areas or the material site. If the contractor chooses to obtain all material from the existing material site, it is anticipated that the expansion of this pit could impact as much as 18.4 acres. Extraction of material from side-borrow areas and the expansion of the existing material site have been designed so as not to create ponded water areas near the airport. If side borrow areas are used, they shall be graded to drain and not pond water. Excavation below water table in the existing material site will be backfilled with overburden or unusable excavated material to a height of two feet above the water table.

Additional property is required for construction of the new runway, taxiway, and apron, as well as for clearing trees from the airspace. Approximately 80 acres will be needed (see Section 5.2.2). (Only a small portion of the Native allotment is required for the RPZ, and if this land proves difficult to acquire, an avigation easement or a modification to standards would be sought.) Most of the existing airport property will be incorporated into the new facility; at this time ADOT&PF plans to retain the rest to protect the airspace and allow for future expansion.

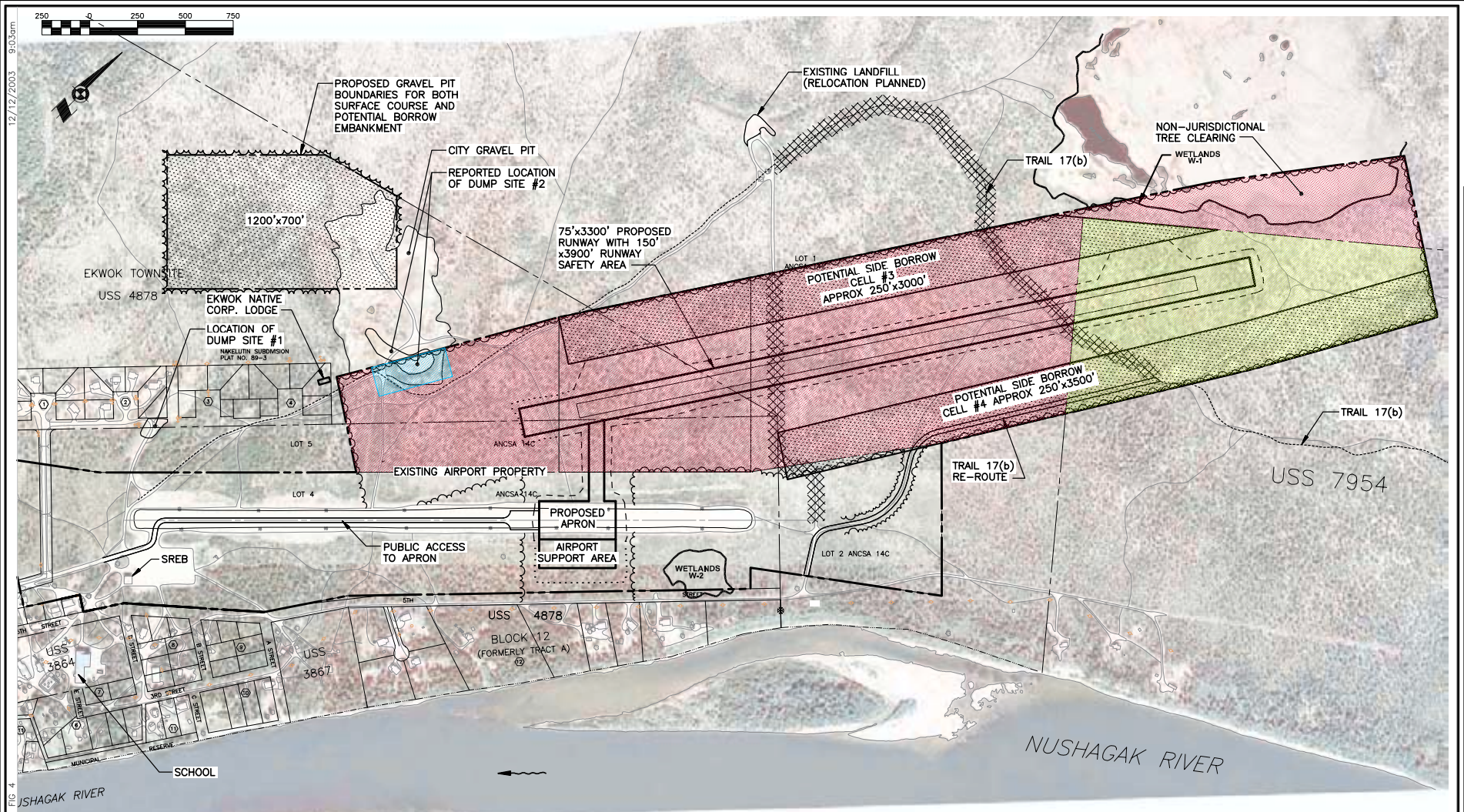
A number of trails leading onto or across the airport property would be closed to direct vehicle traffic to the platted streets. Although one platted road falls within the RPZ, the required clearances are provided for. Short access roads from the existing 5th Street will provide access to the apron and lease lots. Changes in traffic patterns will be minimal (see Section 5.2.1 for further discussion). Early in the alternative development process, the design team considered relocating 5th Street to within the platted right-of-way (Appendix A, Agency Coordination, Coastal Project Questionnaire). However, since the existing road provides access to the proposed airport without realignment, reconstructing the road was determined to be outside the scope of this project.

Winter snow storage and drainage will be improved by constructing the embankment above the surrounding terrain and providing wide ditches to the sides. A new culvert will be installed under the runway to carry runoff from the east side to the west. Generally, runoff will be directed to the existing channel and beyond to the abandoned portion of the city gravel pit.

The SREB will remain on the existing apron. A portion of the existing runway will be used for maintenance access.

Functional Analysis

- Meets FAA airport design standards to provide safe facility
- Meets needs of community and airport users
- Provides pilot-operated lighting to increase the hours of operation
- Allows for development of NPI approaches so that aircraft can land in less-than-perfect weather



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 P:\2002\102009\WINDS-4e\F02009.FIG 4
 NUSHAGAK RIVER

- PROPOSED MATERIAL SOURCES
- AVIGATION EASEMENT OR FEE ACQUISITION DEPENDENT UPON R.O.W. ACQUISITION PROCESS
- ACQUISITION REQUIRED FROM THE CITY OF EKWOK
- NATIVE ALLOTMENT ACQUISITION REQUIRED FROM PRIVATE ESTATE

- LEGEND:**
- REMOVE OR BLOCK
 - AIRPORT BOUNDARY (THIS ALTERNATIVE)
 - EXISTING PROPERTY LINES
 - FILL LINES
 - CUT LINES
 - CLEARING LIMIT

PLANS DEVELOPED BY:
 PDC, INC.

ALTERNATIVE C
EKWOK AIRPORT REHABILITATION
EKWOK, ALASKA

DESIGN: KAR
 DRAWN: RJP/CFP
 CHECK: RLC

Dec 2003
 PROJ. No.
F02009

FIGURE
4

- Minimizes runway crossings by placing the apron on the east side of the runway, convenient to most of the community
- Places the airport in topography well suited for future runway extension
- Locates RPZ away from existing housing and community buildings
- Although the runway will not meet recommended separation standards for landfills and lagoons, this nonstandard condition will not be worsened by the improvements (see Section 5.2.3)

3.2 Alternative C

Description

Alternative C (Figure 4) would shift the entire airport about 2,000 feet northeast and rotate the runway approximately 12 degrees counterclockwise from the existing alignment. The apron and taxiway would be located on the east side of the runway.

Features of Alternative C are similar to Alternative B, with the following exceptions:

- Alternative C would require a total of approximately 120 acres of additional property.
- Acquisition of a portion of Native Allotment USS 7954 is required to construct the runway to the proposed length.
- Alternative C's runway profile provides for more positive drainage, which could be directed to the old material site without constructing a culvert under the runway.
- Access to the apron and lease lots would be via the existing runway.
- The airport would be further away from the community.
- The 17(b) trail would be rerouted to the east side of the runway.

Functional Analysis

The functional analysis of Alternative C is the same as Alternative B. However, the apron location is better suited for expansion and lease lot development.

3.3 No-Build Alternative (Alternative D)

Description

The No-Build Alternative (Figure 2) would result in no appreciable improvement at the existing airport. Minor improvements might be made through expenditure of maintenance and operation (M&O) funds, but the needed reconstruction would not occur. Selection of this alternative would result in zero expenditure of federal funds.

Functional Analysis

- The facility deficiencies described in Section 2, Purpose and Need, would remain.
- Nonstandard land uses such as residential properties within the RPZ would continue.
- The community would not benefit from the safer and more reliable service that an expanded runway would offer for medical evacuations, passenger travel, and cargo transport.

4.0 AFFECTED ENVIRONMENT

4.1 Community Services and Utilities

Ekwok has no piped water system or washeteria; most residents draw their water from individual wells. The City of Ekwok operates a piped sewage system, though many homes still use on-site septic or flush/haul systems. A sewage pump/haul truck is available. Sewage is treated in a lagoon on the south side of town. The City operates an unpermitted community landfill; limited garbage collection service is provided. Electricity is provided by Ekwok Electric, operated by the City. Ekwok Natives, Ltd., Southwest Region Schools, and Alaska Power Systems own bulk fuel tanks. The health clinic is relatively new. The Ekwok Fire and Emergency Medical Services and the State Village Public Safety Officers provide emergency services. In-state telephone service is provided by the Bristol Bay Telephone Co-Op, Inc., and GCI provides long-distance and Internet service. Two radio stations and one television station broadcast to Ekwok. The William “Sonny” Nelson School teaches grades K-8 (high school students are sent to Dillingham).

4.2 Geology, Soils, and Topography

The Nushagak Lowlands province is largely glaciofluvial or outwash deposits consisting of rounded but poorly sorted gravel, sand and silt. The deposits originated as debris eroded by glacial action and were reworked, partially sorted, and distributed by streams into the Nushagak Valley. In many places, moss or other vegetation covers the terrain. The topography around Ekwok is relatively flat, with lowlands on the Nushagak River and rolling terrain to the north (see Figure 1). The airport elevation is approximately 100 feet. No permafrost was encountered during the geotechnical investigation for this project. However, a previous field investigation (December 1982) found seasonal frozen ground to depths of 3.5 feet.

4.3 Climate

Ekwok is in a climatic transitional zone; climate influence is both maritime and continental. Average summer temperatures range between 30°F and 60°F, often with fog. Winter temperatures range between 4°F and 30°F, commonly with high winds. The river is ice-free from June through mid-November.

4.4 Transportation

Water

The Nushagak River is navigable by boat during the summer and passable by snow-machine during the winter. During the summer months, residents use skiffs to hunt, gather, and travel to nearby villages such as Dillingham.

Barge traffic plies the waters during the summer, delivering bulk items to communities at a lower cost than air cargo. Yutana Barge Lines delivers cargo and fuel from Dillingham. Ekwok does not have a dock, so barges off-load cargo onto the shore. The Ekwok barge landing is reported to be adequate without improvements.

Air

The State of Alaska owns and operates the Ekwok Airport.

Ekwok has a single (2,720 feet x 75 feet) gravel-surfaced runway. A taxiway connects the runway to a 200-foot x 300-foot aircraft parking apron. Scheduled and chartered flights are available from Dillingham. Float planes land on the Nushagak River. Ekwok Airport facilities are shown on Figure 2 and on the 1983 Airport Layout Plan (ALP) (Appendix C). The U.S. Flight Publication (Alaska Supplement) notes that the runway has several deep ruts and a dip in the center and recommends that pilots visually inspect the runway before landing.

Ground

The predominant means of ground transportation in Ekwok are all-terrain vehicles, pickups, and snow-machines. Community members have trouble accessing the airport in the spring due to poor drainage and minimal gravel on the surface of the roads. A 9-mile trail connecting the community to the neighboring village of New Stuyahok is impassable during portions of the year.

4.5 Government

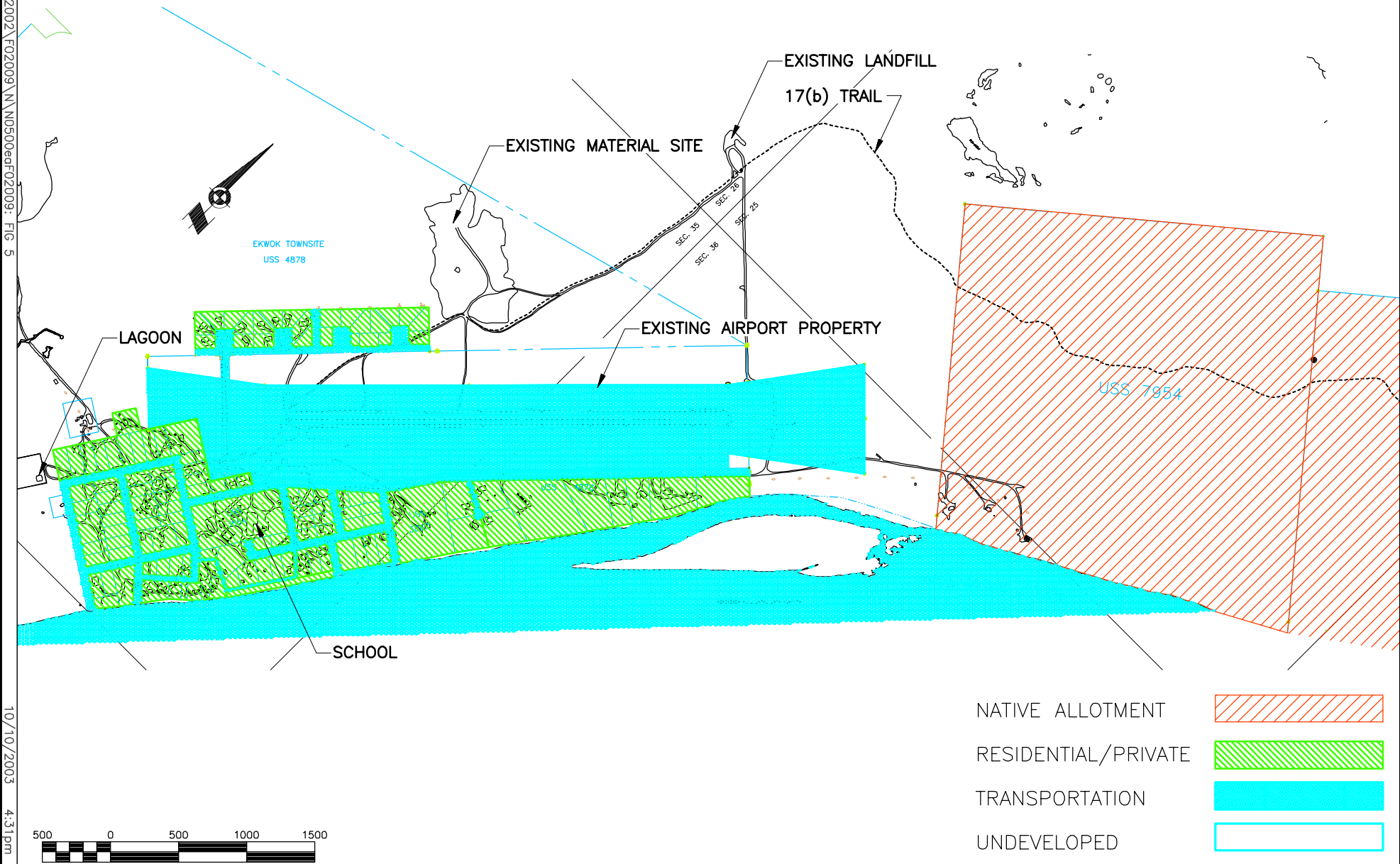
Ekwok is a Second Class City incorporated under Alaska Statutes in 1974. The Bureau of Indian Affairs (BIA) recognizes the Ekwok Village Corporation as the Traditional Council. Ekwok Natives Limited is the Village Corporation filed under the Alaska Native Claims Settlement Act (ANCSA). Ekwok is a member of the Bristol Bay Native Corporation (BBNC), the ANCSA Regional Corporation. Ekwok is in the Coastal Zone and belongs to the Bristol Bay Coastal Resources Service Area. Other organizations that Ekwok belongs to include the Bristol Bay Economic Development Corporation, the Bristol Bay Native Association (BBNA), the Bristol Bay Housing Authority (BBHA), the Bristol Bay Area Health Corporation, and the Southwest Alaska Municipal Conference (SWAMC).

4.6 Adjacent Land Use (Figure 5)**Land Ownership**

The ADOT&PF owns approximately 77 acres of the 79-acre airport property and has a 2.2-acre Avigation and Hazard Easement from Ekwok Natives, Ltd., and a roughly 0.5-acre easement from the City for drainage. The City of Ekwok owns the surface and subsurface rights to the Ekwok Townsite, excluding the oil and gas deposits specifically reserved to the United States. The City is the major landowner affected by expansion of the Ekwok Airport. Outside of the townsite boundary, the BBNC owns the subsurface rights to property surrounding the airport. Other land ownership in the vicinity adjacent to airport property consists of Ekwok Natives, Ltd.; a Native allotment; the Bristol Bay Housing Authority; private owners; and an ANCSA 17(b) trail easement managed by the U.S. Bureau of Land Management (BLM).

Material Site

The City of Ekwok owns a gravel pit located in uplands approximately 400 feet northwest of the airport property line. The federal government did not reserve the gravel rights when the townsite was established. Thus, the City owns these rights, and no land use agreement from the BLM will be required to extract material from the existing borrow site or to expand the borrow site within City-owned land in the federal townsite boundaries.



5
FIGURE

PROJ. No.
F02009

Sep. 2003

DESIGN: KAR
DRAWN: RJP/CFP
CHECK: RLC

CURRENT LAND USE

EKWOK AIRPORT REHABILITATION

EKWOK, ALASKA

PLANS DEVELOPED BY:
PDC, INC.

Residential

The most developed portion of the community of Ekwok is immediately south and southwest of the airport. Several houses in this area lie within the existing airport RPZ. To the west of the airport property is Nakelutin Subdivision. Most of the lots in this subdivision that the project would affect are undeveloped; however, Ekwok Natives, Ltd., recently built a community lodge there (shown on Figures 3 and 4).

Trails

Several trails cross the runway and its safety areas. These trails are not recognized federal or State recreation or historic trails; therefore, they are not considered Section 4(f) properties.

The winter trail from Ekwok to New Stuyahok, which crosses the south end of the airport property, is an ANCSA 17(b) "25-foot trail" easement owned by the City of Ekwok and administered by BLM. A portion of this trail will need to be relocated as part of this project.

ANCSA Section 17(b) authorizes public easements to cross lands conveyed to Alaska Native corporations. These easements are administered by the federal agency whose lands they access, or by BLM if they access non-Federal lands. To reroute this 17(b) trail, which is administered by BLM, the City must offer an alternate route; the original easement can be terminated at the same time the new easement is established. (See Section 5.2.1.)

Landfill and Sewage Lagoon

While not directly adjacent to the airport property, both the landfill and the sewage lagoon are closer to the airport than FAA AC 150/5200-33 allows. The existing runway is approximately 1,900 feet southeast of the landfill and 1,800 feet northeast of the lagoon. The City of Ekwok is seeking funding to relocate the landfill away from the airport (see Section 5.8, Solid Waste).

4.7 Economy

The community practices a subsistence lifestyle where hunting and gathering augment fishing. The Ekwok Lodge, owned by the village corporation, supplements the economy by providing lodging for sports fishermen who come to fish the Nushagak River. Six residents hold commercial fishing permits. Other sources of income for the community come through government funded jobs and services.

4.8 Hazardous Materials

A Phase I hazardous materials site investigation was conducted for the proposed project. The investigation included research of readily available information and a pedestrian walkthrough (Appendix D). The Phase I investigation identified environmental conditions indicating potential contamination within the project vicinity. With the exception of two historic landfills, the potentially contaminated sites were small and were located south and hydraulically down gradient of the existing airport and the proposed build alternatives. Consequently, these sites are not likely to impact the project as a result of the type, extent, and/or location of contamination.

Additional research was conducted to assess the two historic landfill sites (Dump Sites 1 and 2, shown on Figures 3 and 4) within or adjacent to the proposed airport boundary.

Dump Site 1

Dump Site 1 is located near Nakelutin Subdivision on land that would be within the proposed airport boundary. Initial attempts to determine this landfill's exact location and extent from interviews and historic photographs were inconclusive, so in May 2003 a field investigation was performed (Appendix E). A backhoe was used to dig test pits up to 7 feet deep, from which soil samples were collected. The limits of the historic landfill were determined based on which pits contained waste. The pits where waste was found contained solid and household waste. Laboratory analysis of the soil samples from these pits indicated contaminant levels well below cleanup levels or else within the range of background levels.

Dump Site 2

Dump Site 2 is located at the eastern end of the city gravel pit. Photographs of the gravel pit taken in 1982 show evidence of minimal and scattered solid waste. According to Carl Siebe of ADOT&PF, the waste was likely collected and transferred to the village landfill as part of the borrow contract for the 1983 airport project. No solid waste was observed in the pit during the Phase I Preliminary Site Investigation site visit in August 2002. Lorraine King, the City Administrator, indicated that dumping in the gravel pit had been concentrated in low-lying areas toward the eastern mouth of the pit. Luki Akelkok, president of Ekwok Natives, Ltd., indicated that material placed in the gravel pit consisted exclusively of brush cuttings, which were stockpiled for wintertime burning. Because of these factors, and because Dump Site 2 is outside of the proposed construction activities, further investigation was deemed unwarranted.

4.9 Water Resources***Groundwater***

The availability and quality of groundwater in the Ekwok area is generally good but can be diminished by the presence of permafrost and poor reservoir materials. Logs of public and private wells indicate a shallow unconfined aquifer at a depth of approximately 25 feet. A deeper confined aquifer at approximately 75 feet produces higher quality water. A laterally discontinuous clay layer separates the aquifers at some locations.

Chemical analysis of groundwater in the Ekwok area shows groundwater to be low in mineral content, excluding high iron, manganese, and zinc, and generally soft to slightly hard. Water pH is near neutral. Physical tests record low measurements of total dissolved solids (Alaska Area Native Health Service, 1975 and 2002).

Water Supply

Sixty-five percent of the total households in Ekwok are plumbed. Approximately half (57%) of plumbed households receive water from the public water system. The remaining plumbed households (43%) are supplied by individual wells. Water is supplied to Nakelutin Subdivision, located down gradient from the gravel pit, by individual wells.

Surface Water

The proposed project is on the northwestern bank of the Nushagak River, approximately 2 miles upstream from the river's confluence with Klutuk Creek. A pond is located in the large wetland

north of the airstrip. Rivers are navigable from early June to early November; lakes are ice-free from mid-June to late October.

4.10 Wetlands

Based on the Alaska vegetation classification system in Viereck et al. (1992), the Ekwok vicinity is classified as mixed woodland forest. Dominant trees consist of black spruce (*Picea mariana*), paper birch (*Betula papyrifera*), and quaking aspen (*Populus tremuloides*). Typical understory vegetation includes low shrubs such as bog blueberry (*Vaccinium uliginosum*) and dwarf arctic birch (*Betula nana*) and herbaceous plants such as crowberry (*Empetrum nigrum*) and lowbush cranberry (*Vaccinium vitis-idaea*).



Photo 2 - Flora

Two wetlands (Figure 6) were delineated in the survey area in accordance with U.S. Army Corps of Engineers (USACE) methods (Environmental Laboratory, 1987): one large wetland (W-1) on the northern edge of the airport property, estimated to be greater than 30 acres, and one small wetland area (W-2) adjacent to the existing runway, estimated to cover approximately 1.4 acres.

Wetlands were classified following the system set forth in Cowardin et al. (1979). The large wetland classifies as a palustrine, semipermanently flooded, moss-dominated, persistent emergent marsh transitioning to a broad-leaved deciduous shrub marsh. The smaller wetland is a palustrine, saturated, broad-leaved deciduous shrub bog.

Physical functions of flood attenuation, sediment entrapment, and groundwater recharge were the most important functions of the wetlands in the survey area. Wildlife habitat and sociological values were moderately important functions of the wetlands. The Wetland Delineation Report prepared in accordance with the multi-agency Memorandum of Agreement Regarding Impacts to Wetland and Other Aquatic Resources, Mitigation and Airport Improvement Projects in Alaska is included as Appendix F.

4.11 Fish and Wildlife Resources

There are no federally listed or proposed threatened or endangered species and/or designated or proposed critical habitat areas within the action area of the project (Appendix A, Agency Coordination, Rappoport, 9/12/02). However, undeveloped land surrounding the project area provides habitat for terrestrial and avian species.

Terrestrial

Wetland and upland habitats in the Ekwok vicinity support moose (*Alces alces*), caribou (*Rangifer tarandus*), brown (*Ursus arctos*) and black bear (*U. americanus*), wolverine (*Gulo gulo*), tundra (*Lepus othus*) and snowshoe hares (*L. americanus*), lynx (*Lynx canadensis*), and red fox (*Vulpes vulpes*) (Appendix A, Agency Coordination, Rappoport, 9/12/02).

The project is situated in a known moose winter use area and borders a moose calving area delineated along the banks of the Nushagak River. The project area is used by caribou in the winter but does not coincide with migration routes of the Mulchatna caribou herd. Brown bear populations are concentrated along nearby Klutuk Creek and other fish-bearing streams (Alaska Department of Natural Resources [ADNR] et al., 1988).

The rate of subsistence hunting for moose is high in the Ekwok vicinity. Because of their lesser density, subsistence hunting for caribou is less important. Private land ownership discourages sport hunting in the area (ADNR et al., 1990).

Avian

Avian populations from the North American Pacific Flyway and several Asiatic routes funnel through Bristol Bay semiannually on their way to and from northern nesting grounds (Alaska Land Use Council, 1985). Ekwok area wetlands support significant populations of these migratory waterfowl, swans, shorebirds, and cranes (Alaska Coastal Management Program, 1992). Resident bird species in the project area include yellow warblers (*Dendroica petechia*), Wilson's warblers (*Wilsonia pusilla*), common redpolls (*Carduelis flammea*), fox sparrows (*Passerella iliaca*), spruce grouse (*Falcipennis canadensis*), black-billed magpies (*Pica pica*), and common ravens (*Corvus corax*) (Appendix A, Agency Coordination, Rappoport, 9/12/02). In addition, the bird survey conducted in May 2003 for the landfill wildlife hazard assessment identified numerous tree swallows (*Tachycineta bicolor*) and American robins (*Turdus migratorius*) in or near the project area (MACTEC, 2003).

Surveys for bald eagle (*Haliaeetus leucocephalus*) nests have not been performed in the Ekwok area. The U.S. Fish and Wildlife Service (USFWS) notes that bald eagles usually prefer to nest in large cottonwood or large storm-topped spruce trees (Appendix A, Telephone Log, Connor, 1/14/03). The Ekwok area as a whole could potentially be classified as prime bald eagle nest habitat because the Nushagak River and Klutuk Creek (see Figure 1) are known to provide salmon habitat (see Fisheries discussion below) and thus offer a good food source. One bald eagle nest is known to occur along Klutuk Creek, approximately 2 miles south of the airport. However, tree species within the area of proposed airport construction consist of small aspen, birch, and spruce, not the type and size of constituent trees considered prime bald eagle nesting habitat (Appendix A, Telephone Log, Connor, 1/14/03). No bald eagles and no indications of a bald eagle nest were observed during a ground survey of the project area during May 2003 (MACTEC, 2003).

Fisheries

The Bristol Bay region supports five species of Pacific salmon, which provide a major portion of the world's salmon supply. The Nushagak River and Klutuk Creek (see Figure 1 for location) provide water and substrate necessary for spawning, rearing, and migration of anadromous fish populations including sockeye (*Oncorhynchus nerka*), coho (*O. kisutch*), and king (*O. tshawytscha*) salmon and Arctic char (*Salvelinus alpinus*) (Appendix A, Agency Coordination, Rappoport, 9/12/02). Nushagak River and Klutuk Creek fisheries are harvested for subsistence, commercial, and sport purposes.



- LEGEND**
- EXISTING FACILITIES
 - ALTERNATIVE B PROPERTY LINE
 - ALTERNATIVE C PROPERTY LINE
 - PML1/E-M1F PALUSTRINE MOSS-DOMINATED EMERGENT SEMIPERMANENTLY FLOODED WETLAND
 - PSS1/EM1F PALUSTRINE BROAD-LEAVED DECIDUOUS SCRUB/EMERGENT SEMIPERMANENTLY FLOODED WETLAND
 - PSS1B PALUSTRINE BROAD-LEAVED DECIDUOUS SCRUB SATURATED WETLAND



0 300 600 1200
APPROXIMATE SCALE IN FEET

Title: Ekwok Airport Wetlands
 Date: 11/11/2011
 Scale: 1" = 1200'
 11/11/2011 11:28:28

6	PSS1B
	PML1/E-M1F

**EKWOK AIRPORT
WETLANDS**

4.12 Population

The following table presents Ekwok’s historical population trend over the last 12 years.

Table 3 – Population History

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Population	77	104	107	129	121	115	116	120	121	125	130	130

Alaska Natives, primarily Yup’ik, comprise over 90% of the population. Data is from the Alaska Department of Labor (DOL), Research and Analysis Section, Demographics Unit, and from the State of Alaska Department of Community and Economic Development (DCED). Based on DOL projections, the following table presents Ekwok population projections on low, middle, and high growth rates for the Dillingham Census Area of the Southwest Region of Alaska.

Table 4 –Population Projections

Year	Population		
	Low 0.47% Annual Growth	Middle 0.79% Annual Growth	High 2.54% Annual Growth
2001 ¹	130 ¹	130 ¹	130 ¹
2006	133	135	147
2011	136	141	167
2021	143	152	215

¹ Base year, population verified by DCED.

A linear regression analysis on the historical population data was also used to project population for 2021. The population of Ekwok has increased over the last 12 years, with high fluctuations in 1990, 1993 and 1994. Results indicated an average annual growth rate of 2.27%, with a projected 2021 population of 203 residents.

4.13 Other Community Actions or Plans

Table 5 lists other Ekwok community projects in progress.

Table 5 – Community Projects

Project	Lead Agency	Fiscal Year	Stage
Aerial Mapping – Base Map	DCED	2004	Contract
Power Plant Upgrade & City Dump – Capital Matching	DCED	2003	Preliminary
Indian Housing Block Grant	U.S. Dept. of Housing & Urban Development (HUD)	2002	Preliminary
Propane Storage Facility – Capital Matching	DCED	2002	Construction
Groundwater Study & Test Well Study	Village Safe Water (VSW)	2001	Preliminary
City Shop – Capital Matching	DCED	2001	Construction
Indian Housing Block Grant	HUD	1999	Construction

Source: DCED 2003.

In addition, Ekwok is seeking BIA funding for road improvements and a grant for landfill relocation.

5.0 ENVIRONMENTAL CONSEQUENCES

An assessment of the resources identified during the scoping phase to have potential impacts follows. The assessment shows that no significant impacts are expected with the proposed action. Figures 3 and 4 show the build alternatives in relationship with environmental features.

Evaluations were completed in accordance with FAA Order 5050.4A, and 1050.1D. There do not appear to be any significant impacts that could cause this project to require an Environmental Impact Statement. No conflicts between the proposed alternative and the objectives of federal, state or local land use plans, policies, and controls were identified.

Impact categories determined to be non-issues for this project are listed below and discussed further in Section 5.12.

- Air Quality
- U.S. Dept. of Transportation Act of 1969, Section 4(f)
- Historical, Architectural, Archaeological, and Cultural Resources
- Endangered and Threatened Species
- Floodplains
- Coastal Zone Management Program / Coastal Barriers
- Wild and Scenic Rivers
- Farmlands
- Energy and Natural Resources
- Light Emissions
- Fish, Wildlife, and Essential Fish Habitat
- Environmental Justice

5.1 Noise

Quantitative noise analysis is only required when aircraft operations exceed 90,000 adjusted annual propeller operations. The forecasted operations at Ekwok Airport, projected at 9,000 in 2021, do not approach this threshold. However, it is acknowledged that the alternatives may result in differences of nuisance noise.

Build Alternatives

Alternative B: Aircraft takeoffs and landings would subject Nakelutin Subdivision to additional noise because the runway centerline would be moved approximately 150 feet closer. Homes on the south end of the airport would experience less noise because the runway threshold would be moved 600 feet to the east. As discussed above, because the volume of traffic would remain below the threshold, the shift of the runway would not result in incompatible land uses or noise levels.

Alternative C: Alternative C would place the runway further out of town and would likely result in the lowest noise levels for all the residential properties near the airport.

No-Build Alternative

As the number of operations increases to accommodate the expected growth, the residential properties surrounding the airport would hear the aircraft noise on a more frequent basis.

5.2 Compatible Land Use

Land use impacts related to noise, disruption of ground transportation, land acquisition, and the landfill may be experienced. However, these impacts would be minimal. Also, the community of Ekwok did not want to see the airport relocated away from town. In rural villages, keeping the airport close to the community is typically considered an advantage.

5.2.1 Changes in Ground Transportation

Several trails on and surrounding the existing airport are not compatible with airport use. Trail consolidation and closure is required. The change in traffic patterns resulting from either build alternative would not be significant, and none of the trails are classified as 4(f) property (see Section 4.6, Adjacent Land Use, Trails). There is adequate access to replace the circulation provided by the rerouted trails. The reroutes will bridge the trails with the community without crossing the runway. Further, once the landfill is moved, some of the trails may no longer be needed. Barriers or fences will be placed to discourage use of closed trails.

Build Alternatives

With both build alternatives, a trail connecting 5th Street to the landfill off the north end of the existing runway would require closure because it would cross the new runways. Closing the trail would leave a few residents with a longer trip to access the landfill.

Alternative B: The unimproved trails at the south end of the runway connect the community to the housing subdivision on the west side, and then extend to the existing landfill. Alternative B will close these trails and reroute the traffic to the platted road going to the Nakelutin Subdivision. Because the route is less direct, it will slightly increase the length of the trip to the landfill for most residents. Figure 3 shows these traffic revisions; cross-hatching marks the routes to be closed.

An ANCSA 17(b) trail easement (see Section 4.6) runs between Ekwok and New Stuyahok. Alternative B would displace a small portion of this winter trail easement (Figure 3) and connect it with the existing road through the Nakelutin Subdivision.

Alternative C: An ANCSA 17(b) trail easement (see Section 4.6) runs between Ekwok and New Stuyahok. Alternative C would reroute a portion of this 17(b) trail (Figure 4). Where the trail enters the airport boundary, its current route would be closed. The new route would parallel the airport boundary and pick up the existing trail connected to 5th Street. This would shorten the route between the two communities.

No-Build Alternative

Without some regrading, ditching, or other physical barrier, the existing trails which cross or run very near the ends of the runway would continue to be used. The clearances required by FAA for safety do not exist on these trails.

5.2.2 Land Use, Status, and Acquisition

Build Alternatives

Alternative B: Alternative B affects several lots in the Nakelutin Subdivision. The City’s planned land use in the subdivision was future housing; however, in February 2003 the City formally expressed its support of Alternative B and asked residents to sign a petition urging ADOT&PF to proceed with this alternative (Appendix A, Public Involvement). Most of the affected properties are undeveloped lots owned by the City of Ekwok, but one holds a community lodge owned by Ekwok Natives, Ltd. To minimize socioeconomic impacts to the community while still protecting airspace and securing overall compatible land use, aviation easements will be sought on developed properties. This includes the residences and the lodge property in Nakelutin Subdivision, where these easements will allow adequate building height for the existing structures. On undeveloped lots, ADOT&PF will seek to acquire fee simple title to the properties.

In addition, approximately 4.7 acres of an undeveloped Native allotment (USS 7459) will be sought from a private estate to meet the RPZ criteria for the facility. If this land cannot be acquired, then an aviation easement with stipulations to preclude future development that would promote public gathering, a displaced threshold, or approval of nonstandard conditions may be required to secure overall compatible land use.

Table 6 shows the acreage requirements for both build alternatives:

Table 6 – Land Acquisition

ADOT&PF Interests	Alternative B (acres)	Alternative C (acres)
Avigation easement or fee acquisition – to be negotiated in ROW acquisition process	9.8	—
Acquisition required from the City of Ekwok	65.9	88.4
Avigation easement from the City of Ekwok	—	1.4
Acquisition required from Native allotment	4.7	30.0
TOTAL	80.4	119.8

Alternative C: Alternative C would require acquisition of a large portion (approximately 30 acres) of Native Allotment USS 7459. It appears that this would be time consuming and controversial. The property is owned by multiple heirs and has not been through the legal process necessary to allow sale of any portion without every heir’s approval. Even if the heirs were all willing sellers, the process requires that BIA perform appraisals and develop its own Environmental Assessment, as well as BIA approval of the final sale agreement. Selection of this alternative would very likely delay construction of a new runway by many years. This could adversely affect the community in much the same way as the No-Build Alternative.

Other lands required would be obtained from either the City or the Village Corporation. These entities support the proposed airport project.

No-Build Alternative

The existing airport has residences within the Runway Protection Zone. FAA guidance prohibits this land use (FAA AC 150/5300-13, paragraph 212 b(2)(a)). The No-Build Alternative would offer no opportunity to correct this unfavorable condition.

5.2.3 Landfill and Sewage Lagoon Location

The airport is located approximately 1,900 feet from the existing landfill and approximately 1,800 feet from the existing sewage lagoon. FAA guidelines consider waste disposal sites and wastewater treatment facilities incompatible if the separation distance to the runway end is:

- Less than 10,000 feet for airports used or planned to be used by turbine-powered aircraft
- Less than 5,000 feet for airports used only by piston-powered aircraft

The City plans to relocate the landfill and indicates that it has been waiting for the airport plan to solidify to make certain of proper offset. To determine whether there would be a need to mitigate potential wildlife hazard impacts in the interim, the USDA performed a wildlife hazard assessment (Appendix G). USDA stated that while the wildlife hazards appeared to be limited at both the existing and the proposed sites, even a limited hazard is cause for concern. A letter was sent to the City of Ekwok (Appendix A, Public Involvement, 9/24/03) urging the City to seek funding to relocate the landfill and to consider the following interim measures to reduce its attractiveness to wildlife:

- Burn all animal carcasses and food waste frequently; cover or bury daily when burning not possible.
- Install a perimeter fence around the landfill to keep out scavenging mammals.
- Install a wire grid or netting above the perimeter fence to keep birds out.

Build Alternatives

The separation distance between the closest runway end and the existing landfill for Alternatives B and C would be approximately 1,400 feet and 1,125 feet respectively. The separation distance between the closest runway end and the existing sewage lagoon for Alternatives B and C would be approximately 2,125 feet and 3,900 feet respectively.

In the wildlife hazard assessment (Appendix G), USDA commented that since the proposed runway relocation was unlikely to change aircraft or wildlife travel patterns appreciably, the risk of wildlife strikes would not necessarily increase even though the new site would be closer to the landfill. Because the proposed sites are further from the Nushagak River, a corridor for bird movement, the wildlife hazard might even decrease slightly.

No-Build Alternative

If the No-Build Alternative were selected, the separation distances between the airport and the landfill and lagoon would remain substandard at 1,900 feet and 1,800 feet respectively.

5.3 Social Impacts

5.3.1 Land Acquisition or Relocations

No business or residential relocations would be required for either of the build alternatives. Figures 3 and 4 show land acquisition required for development of Alternatives B and C, respectively. See Section 5.2.2 for further discussion.

5.3.2 Disturbance of Subsistence Activities

A blueberry picking area would be disturbed by either build alternative, causing some residents to travel further to other blueberry picking areas. The impacts would not be substantial.

5.4 Induced Socio-Economic Impacts

Build Alternatives

Either build alternative would substantially improve the reliability of services to the community, but neither is expected to cause a substantial change in population movement and growth.

The increased accessibility to the community may also have the potential to bring in tourists and hunters for possible revenue. This impact could be both positive and negative, but in either case it is not expected to be substantial.

No-Build Alternative

The poor condition of the airport has induced a negative impact on the community. A number of letters and comments in the Public Involvement section of Appendix A attest to this. Selecting the No-Build Alternative would have a substantial negative impact on the community.

5.5 Water Quality

Build Alternatives

Because of the similar geographic positions and areas disturbed, the environmental consequences and mitigation with respect to water quality for both build alternatives are not quantifiably different and impacts will be minimal. A copy of the Air and Water Quality Certification is included in Appendix A.

Minor, temporary degradation of surface water quality may be incurred as a result of surface runoff of sediment during construction or periods of high overland flow. Extraction of gravel from the existing pit may extend below the groundwater table. The closest known drinking water wells support the HUD subdivision situated approximately 1,200 feet south (down gradient) of the gravel pit. The subdivision wells tap a deep aquifer presumed to be at a depth of approximately 75 feet. The wells are unlikely to be affected by excavation in the up-gradient vadose zone because of the significant vertical separation. Drinking water wells supporting residences at the northwest end of F Street use the upper aquifer and are unlikely to be affected by activities in the gravel pit because of a lateral separation of at least 2,200 feet. Excavation from the side borrow areas is also unlikely to affect water quality because of the distance from the drinking water wells.

Mitigation

Implementation of an Erosion and Sedimentation Control Plan (ESCP), a Stormwater Pollution and Prevention Plan (SWPPP), and appropriate Best Management Practices (BMP's) would mitigate impacts to area surface water.

No-Build Alternative

The current level of impact to water quality would not be changed under the No-Build Alternative.

5.6 Biotic Communities**Build Alternatives**

Because of the similar geographic positions and areas disturbed, the environmental consequences and mitigation with respect to biotic communities are nearly the same for both build alternatives. Constructing either build alternative poses minimal impact on biotic communities.

- **Alternative B:** Under the proposed action, as much as 124 acres would be affected. This would include approximately 36 acres for construction of new airport facilities (cut and fill); 43 acres for material extraction; and an additional 45 acres altered by new vegetative clearing, with no other construction activity to take place there. Although 43 acres is available for material extraction, it is unlikely that all material sites will be used to their full limits.
- **Alternative C:** Constructing this alternative would affect as much as 152 acres. This would include approximately 31 acres for construction of new airport facilities (cut and fill); 56 acres for material extraction; and an additional 65 acres altered by new vegetative clearing, with no other construction activity to take place there. Although 43 acres is available for material extraction, it is unlikely that all material sites will be used to their full limits.

For both build alternatives, embankment construction, clearing, and gravel extraction from undeveloped land would result in a minor yet permanent alteration of existing habitat. See Section 4.10 for a description of vegetation communities in the area. Habitat to be cleared or filled does not support rare, threatened, or endangered species, and the portion of habitat lost does not substantially lower the carrying capacity of the overall area. See Section 4.11 for a discussion of fish and wildlife resources in the project area.

Project activities would not likely infringe on managed primary and secondary zones surrounding any active bald eagle nests in the area. Ekwok Natives, Ltd., president Luki Akelkok reports that bald eagles do nest in a cottonwood stand approximately 2 miles south of the village along Klutuk Creek. This area, however, would not be directly affected by construction activities under either build alternative. The May 2003 bird survey did not identify any bald eagle nests in the vicinity of the existing airport. Although bald eagles were observed flying along the Nushagak River corridor, no nests were found along the river and no concentrations of bald eagles were seen crossing the runway (Appendix G). Based on interviews with local residents (MACTEC, 2003) and bald eagle habitat requirements for nesting, it is unlikely that bald eagles would be disturbed by construction work (Appendix A, Telephone Log, Connor, 1/14/03). However, USFWS recommends that a bald

eagle survey be conducted before construction activities begin to ensure that no bald eagles have established a nest in the project area (Appendix A, Agency Coordination, Brna, 9/22/03).

Neither Essential Fish Habitat nor any resident threatened or endangered aquatic species would be impacted by project-related activities. The gravel source for construction would be the city gravel pit on the northwest airport boundary; gravel is not expected to be extracted from river bars for this project. Should the contractor choose to use a material site other than the one being made available, he would be required to acquire all necessary permits and clearances. Construction equipment would be transported to Ekwok by barge; however, placement of fill below ordinary high water would not be necessary for equipment offloading (Appendix A, Telephone Log, Akelkok, 1/2/03).

Extension and rotation of both build alternatives decreases the separation distance between the runway and the community landfill. However, because both move the runway further from the Nushagak River, they may slightly decrease the potential for wildlife/aircraft interactions (see Appendix G, Wildlife Hazard Assessment).

Avoidance, Minimization, and Mitigation

The Nushagak River and Klutuk Creek were not proposed as material sources to avoid potential impacts to anadromous fish spawning and rearing habitat (see Section 5.11).

The ground cover will be maintained to the extent practical in areas where tree clearing is required. Further, areas where natural vegetation is removed for material extraction will be reclaimed in accordance with ADNR requirements. Slopes, ditch bottoms, and other unvegetated areas where soil erosion may occur will be seeded.

A bald eagle nest survey will be conducted during the spring before construction begins. If construction occurs within primary or secondary zones of an active nest, ADOT&PF will either restrict construction activities during the nesting season or implement a nest monitoring program developed in cooperation with USFWS.

No-Build Alternative

The No-Build Alternative would not change the current level of impact sustained by biotic communities.

5.7 Wetlands

Build Alternatives

Placement of dredged and/or fill material into jurisdictional wetlands is not required for either build alternative. Further, land clearing operations involving vegetation removal with mechanized equipment, land leveling, or other soil disturbances can be avoided. Mechanized clearing of trees is considered placement of fill material by the U.S. Army Corps of Engineers and would not occur in the jurisdictional wetlands identified in the project area of either build alternative.

Avoidance, Minimization, and Mitigation

The Preferred Alternative, Alternative B, completely avoids any direct wetlands involvement.

Alternative C has minimal impacts. To minimize these impacts, tree clearing in Wetland W-1 (Figure 6) required to eliminate airspace obstructions would be performed by hand or hydroax while the ground is frozen and covered with snow.

Under either build alternative, to mitigate any temporary indirect impacts due to sediment or erosion during construction, the contractor would be required to implement BMP's such as silt fences. Construction-related activities such as equipment staging would not be allowed in or near wetland areas.

No-Build Alternative

Jurisdictional wetlands would not be impacted under the No-Build Alternative.

5.8 Solid Waste

Build Alternatives

The proposed airport upgrade would have little or no impact on the community's overall solid waste generation rate. A slight increase in solid waste generation would occur during construction. The contractor would remove the solid waste generated by the construction from the project area and dispose of it at the community landfill. This aspect of the proposed project would not cause undue hardship to operators of the landfill nor significantly reduce its capacity.

As discussed in Sections 4.6 and 5.2, the landfill is closer to the existing airport and the proposed relocation sites than FAA AC 150/5200-33 allows. The City of Ekwok is seeking funding to relocate the landfill away from the airport. In the interim, the USDA has recommended several changes in landfill management practices to decrease the landfill's attractiveness to wildlife. These include burning and/or covering waste frequently, fencing the landfill, and installing netting over the top of the fencing.

No-Build Alternative

No impacts to the community's solid waste generation rate would occur under the No-Build Alternative. The separation distance between the airport and the landfill would remain substandard.

5.9 Hazardous Materials

Based on the hazardous materials assessment discussed in Section 4.8, the following describes the potential environmental impacts.

Build Alternatives

Alternative B: All of Dump Site 1 and a small portion of Dump Site 2 fall within the proposed airport boundary (Figure 3). The limited sampling done for the project did not find contamination of concern. Also, the Alaska Department of Environmental Conservation (ADEC) has indicated that ADOT&PF would not be considered a responsible party if cleanup is required in the future, since ADOT&PF was neither the landowner nor the site operator at the time the site was used for waste disposal (Appendix A, Agency Coordination, Frechione, 9/9/03). Nevertheless, ADOT&PF does not consider it prudent to acquire the land. Instead, to minimize the potential for future liability while still protecting the airspace, an aviation easement will be acquired.

Dump Site 2 is located at the east end of the gravel pit designated as the primary source for sub-base and surface course material for this project. However, it is expected that the material would be excavated from the northwestern area of the pit and would not likely coincide with the historic landfill area. The contract documents will make the contractor aware of the historic dump so that he can plan his excavations to avoid this area. Further, if hazardous waste should be encountered at any location during excavation, the contractor would need to take the necessary steps for proper reporting and handling of this waste.

Alternative C: The airport boundary for Alternative C overlaps Dump Site 2; similar to Alternative B, Alternative C would be able to avoid Dump Site 2 by acquiring only an avigation easement over these lands (see Figure 4). Because Alternative C is located more than 500 feet from Dump Site 1, no impacts would be expected.

No-Build Alternative

Hazardous materials would not be encountered under the No-Build Alternative.

5.10 Secondary and Cumulative Impacts to the Natural Environment

Potential secondary and cumulative impacts are identified and described for the design life and geographical extent of the project. Significance of secondary and cumulative impacts is assessed for both context and intensity of impact.

Secondary and cumulative impacts to the natural environment are not significant for any of the alternatives considered. Secondary and cumulative impacts specific to Alternatives B and C are comparable because of similar geographic position and disturbance area. The following discussion is applicable to either build alternative; the differences between Alternatives B and C in the degree or type of impact are addressed where notable differences exist.

Build Alternatives

Secondary Beneficial Impacts

Future landfill relocation would likely reduce the potential for wildlife interactions with aircraft by increasing the separation distance between the landfill and airstrip to at least 5,000 feet.

Secondary Adverse Impacts

Permanent habitat loss incurred as a result of filling, clearing, and excavation would displace most species resident in the disturbed areas. Temporary displacement of species resident in habitat surrounding the project area may occur during construction. Short-term interspecific competition for similar resources in undisturbed areas surrounding the construction site may occur; however, it is likely species would adjust to the increased populations via niche displacement.

Standing water less than 6 feet deep created during gravel extraction from below the water table, if left after construction, has the potential to develop into wetland habitat in the future. Wetlands proximal to the airstrip may have implications for future permitting efforts and may attract birds, thus elevating the potential for wildlife/aircraft interactions. In order to prevent this scenario, excavation of material from side borrow areas and the expansion of the existing material site will be designed so as not to create

ponded water areas after construction. If the existing material site is excavated below the water table, the excavation shall be backfilled with overburden or unusable excavated material to a height of two feet above the water table. If side borrow areas are used, they shall be graded to drain and not pond water.

Increased connectivity with other population centers could expedite non-local use, harvest, and export of natural resources. Recommendations of the reclamation plans and the USDA wildlife hazard assessment should be considered to minimize potential conflicts between wetlands and wildlife/aircraft interactions.

Cumulative Beneficial Impacts

No cumulative beneficial impacts to the natural environment associated with the build alternatives are recognized.

Cumulative Adverse Impacts

Rehabilitation of the Ekwok airport might stimulate community growth, thereby accelerating the rate of wildlife habitat loss.

No-Build Alternative

Secondary Beneficial Impacts

Future landfill relocation would likely reduce the potential for wildlife interactions with aircraft by increasing the separation distance between the landfill and airstrip to at least 5,000 feet.

Secondary Adverse Impacts

No secondary adverse impacts to the natural environment associated with the No-Build Alternative are recognized.

Cumulative Beneficial Impacts

The No-Build Alternative would not accelerate the current rate of habitat modification or pressure on natural resources experienced in Ekwok.

Cumulative Adverse Impacts

No cumulative adverse impacts to the natural environment associated with the No-Build Alternative are recognized.

5.11 Construction Impacts

Build Alternatives

The construction impacts are relatively short-term, lasting at the most two construction seasons. Though short, they can still be annoying and sometimes detrimental. The following discusses potential construction impacts.

Material Site

It is expected that the contractor will obtain material from the City-owned material site on the northwest airport boundary and from two side borrow areas (see Figures 3 and 4). The Nushagak River and Klutuk Creek were initially included as potential material sources. These two water bodies provide important habitat to salmon and other anadromous fish species, and the USFWS

recommended that “all other practicable alternatives for gravel sources be fully explored” (Appendix A). Additionally, it is usually preferable to stay out of the river if a terrestrial source is available. Timing restrictions imposed on riverine operations usually push the operator to winter hauling or barging of material. Winter hauling usually entails either double handling of the material or winter construction activities. Winter construction can impact the quality of the project because it is often not possible to compact the material adequately. All of these factors drastically increase the cost of construction. For these reasons, the Nushagak River and Klutuk Creek were eliminated from consideration during the scoping process.

To provide sufficient material for the airport construction, the gravel pit may need to be expanded by as much as 18.4 acres. The contractor will be required to develop a mining and reclamation plan for the expansion per the ADOT&PF standard construction specifications. The borrow site expansion was sized to provide the necessary material without excavating below the water table. However, extraction below the water table may be needed because of the contractor’s mode of operation or the quality of material available. In order to prevent ponding, the contract specifications will require the contractor to backfill the area below the water table with overburden and/or unusable excavated material. The site is in uplands, so no wetlands permitting is required. Based on consultation with the USACE (Appendix A), no additional permitting or mitigation is expected if the contractor uses the existing material site and side borrow areas. Use of the side borrow areas would affect approximately 25 acres of uplands.

It is expected that the contractor’s haul route would be on existing roads, although some improvements may be needed. Hauling operations through town or on roads used by the public will require appropriate traffic safety measures as outlined in ADOT&PF standard construction specifications.

The contractor may choose to dewater during material extraction. In this case, he will need to acquire a General Wastewater Disposal Permit for “excavation dewatering” during construction. ADEC manages this permit. The application requires detailed knowledge of specific operations, e.g. method of dewatering, daily flow rates, rate of pumping, etc. This information is dependent upon a contractor’s equipment; the contractor will therefore be the permittee.

If the contractor chooses to use a material site other than the one being made available, he shall be required to acquire all necessary permits and clearances.

Noise

The greatest nuisance impact from construction impacts is generally from the noise of heavy equipment operating throughout the day. The contractor will be required to demonstrate that the equipment is running according to the manufacturer's specifications and that noise abatement features on the equipment are operational.

Air Quality

Air quality emissions from equipment would be minimal due to the small amount of equipment that would be required. The contractor may need to mitigate fugitive dust by watering exposed soils and gravel roads during times of dry and/or windy conditions.

Water Quality

The location of the airport in relation to surface waters and the fact that there are no wetlands simplify the task of protecting the area's water quality during construction.

The project will require a National Pollution Discharge Elimination System (NPDES) permit, which will include an Erosion and Sediment Control Plan (ESCP), a Stormwater Pollution Prevention Plan (SWPPP), and a Hazardous Materials Control Plan (HMCP) (see "Hazardous Materials" below).

The ESCP will be prepared during final design. The plan incorporates Best Management Practices (BMP's) to contain potential erosion and sediment from escaping the construction site. Most construction related impacts would be controlled and minimized in accordance with BMP's using standard procedures for erosion and sediment control, and grading, fertilizing and seeding temporarily disturbed areas.

The contractor is required to use the ESCP to prepare a SWPPP prior to construction. The contractor then submits the SWPPP to ADOT&PF for review to ensure that all practicable measures are taken to prevent erosion and sediment transport. The SWPPP is a part of the "Notice of Intent" filed in compliance with the NPDES.

Archaeological

Should construction unearth unknown cultural resources, the contractor shall cease construction activities in the immediate area and notify ADOT&PF's Project Engineer and Environmental Section and the State Historic Preservation Officer (SHPO). In situations such as this, mitigation entails the use of specialized salvage archaeological techniques.

Hazardous Materials

Hazardous materials required for operating equipment will be contained on-site, per state and federal regulations. No hazardous materials will be stored in or near a wetland or water source. Clean-up materials for accidental spills will be located on-site. A project-specific Hazardous Material Control Plan will be prepared in conjunction with the NPDES permit. The contractor will be responsible for the proper disposal of any hazardous waste generated by construction activities.

Clean-Up

Before the contractor leaves the site at the end of the construction project, all trash will be collected and provisions made for disposal. The site will be walked and all evidence of construction activities removed, including station signing, flagging, surveying tape, and non-biodegradable erosion and pollution control materials.

Economic

Some beneficial but minor economic impacts can be expected due to construction of the project. This is due to the influx of money coming into the community and local services provided to workers. Additionally, construction jobs might be available for qualified workers, though for some, the timing of construction activities in the summer conflicts with other cash economy jobs and subsistence activities.

No-Build Alternative

No construction impacts are associated with the No-Build Alternative.

5.12 Non-Issue Impact Categories

5.12.1 Air Quality

Ekwok is not within a non-attainment area. There is little or no potential to impair the ambient air quality. Forecasted air operations would not exceed the threshold (180,000 annual operations) that requires an Air Quality Analysis. An Air and Water Quality Certification is provided in Appendix A.

5.12.2 U.S. Department of Transportation Act of 1969, Section 4(f)

The proposed project will not affect the Wood-Tikchik State Park, west of Ekwok. There are no legislatively designated special areas (state game refuges, sanctuaries, or critical habitat areas) in the project vicinity. The 17(b) trail is not considered a 4(f) property (see Section 4.6).

5.12.3 Historic, Architectural, Archaeological, and Cultural Resources

A review of the Alaska Historic Resources Survey revealed three historic sites, all far removed from the project area with no potential to be affected by project construction or material site mining and hauling operations. Further coordination was conducted with the tribal council and the City as well as other Native representatives including BBNC, BBNA, and BIA. No known sites were noted. Both build alternatives require some land acquisition from Native Allotment USS 7954. BIA has land management authority over these lands. In 2002 BIA conducted a field investigation and found no historic properties affected (Appendix A, Agency Coordination, Hoff, 8/28/02). Based on this information, the SHPO has determined (Appendix A, Agency Coordination, 10/08/02) that no historic properties will be affected by the proposed project.

Construction specifications will include provisions for discovery of unknown archaeological, historical, cultural or paleontological remains. The contractor is required to cease operations in that area and notify ADOT&PF and the SHPO. If such discoveries are made on Native allotment land, the contractor must also notify the BIA Regional Archaeologist.

5.12.4 Endangered and Threatened Species

The USFWS believes there are no federally listed or proposed species and/or designated or proposed critical habitat in the project action area (Appendix A, Agency Coordination, Rappoport, 9/12/02).

5.12.5 Floodplains

According to the Federal Emergency Management Agency (FEMA), no Flood Insurance Rate Map (FIRM) exists for Ekwok. However, the USACE Chief of Floodplain Management visited Ekwok in November 2002 (Appendix A, Telephone Log, Legare, 2/5/03). He reports:

- No floodplain mapping has been completed at this time.
- There is a flood gage in Ekwok.

- The 2002 ice jam was the flood of record at 480.7 feet (based on sewer and water datum monument arbitrarily set at 500 feet).
- The airport is not in the flood zone; it is about 5-10 feet above the floodplain.

5.12.6 Coastal Zone Management Program / Coastal Barriers

Ekwok is in the Coastal Zone and belongs to the Bristol Bay Coastal Resources Service Area. Because there are no impacts to the river, such as for a material source or fill and dredging for a barge landing, and no wetlands involvement, it is expected that the project will be found consistent with the coastal zone management plan. The Coastal Project Questionnaire and Certification Statement has been sent to the Alaska Department of Natural Resources (ADNR) for consistency review (see Appendix A).

There are no coastal barriers in Alaska; therefore, there would be no coastal barrier impacts.

5.12.7 Wild and Scenic Rivers

The proposed action will not affect rivers listed as wild and scenic.

5.12.8 Farmlands

There are no prime or unique farmlands in Alaska.

5.12.9 Energy and Natural Resources

The proposed action will have no measurable effects on the nation's fuel either during construction or during operations. The only natural resource required for the proposed project is gravel. The amount required for the proposed action will not measurably deplete the nation's resources. Furthermore, if the airport is no longer required or is abandoned, the gravel can be re-used. The No-Build Alternative does not require gravel.

5.12.10 Light Emissions

The project will provide the airport with a medium intensity runway lighting system and runway end identifier lights. The lights are radio-activated and only illuminated for 15 minutes when aircraft are landing or taking off. The rotating beacon will be placed in a location to minimize light shining into the windows of residential properties. Light emission impacts are expected to be minimal.

5.12.11 Fish, Wildlife, and Essential Fish Habitat

The Nushagak River and Klutuk Creek are anadromous fish water bodies, and a Title 16 (now Title 41) Fish Habitat Permit would be needed if any of the following were conducted below the ordinary high water level of these water bodies:

- Placing fill or removing material
- Operating equipment
- Fording
- Stabilizing banks
- Constructing ice bridges
- Crossing winter streams
- Constructing barge off-loading ramps or bulkheads

It is not expected that any such activities will be required for the contractor's mobilization or for construction of the project. The barge landing is adequate, and construction material is expected to come from the inland source previously discussed. If, however, the contractor chooses to use an in-stream material site rather than the one being made available, he shall be required to acquire all necessary permits and clearances.

5.12.12 Environmental Justice

The project does not bear a disproportionate amount of adverse environmental effects to minority and/or low-income populations. In fact, either build alternative would have positive impacts on the residents, the majority of whom are minority or low income.

6.0 COORDINATION

6.1 Agency Coordination

Agency coordination is summarized below. See Appendix A for copies of agency correspondence, meeting minutes, and an agency coordination log.

Agency Scoping Letter, Meeting Notice, and Field Trip Invitation

In July 2002, an agency coordination letter was distributed. The letter provided:

- A discussion of alternative development and refinement
- A summary of potential impacts identified from preliminary research
- Notice for an informational meeting held on August 13, 2002
- An invitation to the agency field trip on August 14, 2002

The informational meeting presented the preliminary design alternatives and allowed the agencies to discuss their initial questions, comments, and/or concerns with project team members.

Agency Input

Alaska Department of Environmental Conservation

- Acquisition of aviation hazard easement over historic dump sites would not make ADOT&PF liable for future cleanup if determined necessary

Alaska Department of Fish and Game (now ADNR Office of Habitat Management and Permitting)

- No Title 16 (now Title 41) permit needed
- Prefers upland materials sources

State Historic Preservation Office

- Finding of No Affected Properties

U.S. Army Corps of Engineers (USACE)

- Jurisdictional Determination indicated no involvement of wetlands under USACE jurisdiction

U.S. Department of Agriculture

- Wildlife hazard assessment indicated a “limited hazard” from nearby landfill
- Recommended landfill relocation and implementation of mitigation measures in the interim

U.S. Fish and Wildlife Service

- Indicated that no federally listed species or critical habitat would be impacted by the project
- Recommended using the alternative with least environmental impact and using an inland material source
- Recommended conducting a bald eagle nest survey before construction activities begin to ensure that no bald eagles have established a nest in the project area

6.2 Public Involvement

Coordination efforts made to obtain public input have involved three newsletters, phone calls, and two public meetings. Copies of the newsletters, mailing list, and phone logs are available in Appendix A. The following provides additional details regarding these coordination efforts.

Newsletters

The first newsletter was mailed in March 2002, with follow-up newsletters mailed in July 2002 and January 2003. Newsletter No. 1 introduced the project and the project's team members; requested input from the community regarding necessary improvements, material site locations, and general comments on the proposed project; and announced the public meetings in Ekwok. Newsletter No. 2 introduced the preliminary alternatives and provided maps of the alternatives. Newsletter No. 3 informed the public of the engineering preferred option (Alternative B) and sought input on potential concerns or comments.

Public Meetings

The first meeting, attended by 34 Ekwok residents, was held in Ekwok on March 12, 2002. The purpose of the meeting was to gather information regarding past airport use and future needs of the airport for the community. The Site Visit Report and meeting minutes are available in Appendix A. Graphics included a laminated aerial photo (scale: 1 inch = 200 feet) with two airport layout transparencies to overlay onto the photo; a USGS topographic map enlargement with an airspace overlay; and a project process flow chart display. These were used to discuss potential orientation and location of these facilities on the existing site. Alternative sites for the airport were discussed.

Comments were solicited from attendees, both verbally and by questionnaire, regarding future aviation needs of the community. Ekwok residents who attended the public meeting supported improvements to the existing airport. Their concerns centered primarily upon increased aircraft operational safety, improved medevac services, and the economic opportunities that a larger runway might provide. Questionnaire respondents favored improving the Ekwok airport, and most could accept relocating the airport if needed. Most have problems with access to the airport during spring breakup. Respondents said that they receive most of their supplies by air, although half of the people report that they receive their supplies by barge in the summer months. All reported that they would use air transportation more frequently if available. Most people take about 7 to 12 trips per year (by air) outside of Ekwok. Their concerns with traveling to and from Ekwok were primarily related to bad weather and airport safety.



The second community meeting, held in Ekwok on August 14, 2002, was attended by 31 residents. The purpose was to present the preliminary airport layout alternatives and allow the community to voice questions, comments, and/or concerns. Presentation materials used in the meeting included an aerial photograph of Ekwok, full-size drawings of the design alternatives, extra copies of the newsletter showing the alternatives, handouts of the meeting agenda, and comment sheets. Stamped, addressed

Photo 3 – Public Meeting, August 14, 2002

envelopes were provided for those who wanted more time to write out their comments and return them to PDC. The design alternatives were presented along with their advantages and disadvantages, and then the community was encouraged to participate in an open discussion.

Community members spoke (sometimes in Yup'ik) about the alternatives. After review of the alternatives, a show of hands indicated that all votes were in favor of Alternative C. Only one person objected to C, preferring Alternatives A-1 and D (the No-Build Alternative). Comment sheet responses returned at the meeting and by mail were unanimous in support of Alternative C.

Alternative C was initially chosen as the engineering preferred alternative, but due to uncertainties about the Department's ability to obtain an adequate interest in the Native allotment at the northeast end of the runway, it was decided to pursue Alternative B, the next best alternative. The cost of Alternative B is only slightly higher than that of the other alternatives, and given that Alternative B provides the best probability for airport improvements and also allows for future expansion, it was considered the best investment of funds.

At the time of the August 2002 meeting, the concerns about acquiring right-of-way for Alternative C were not known, so it is not known how many residents would have supported Alternative B. In January 2003, Newsletter No. 3 was sent to the community to inform the residents of the difficulties with Alternative C and ask them about their willingness to support Alternative B.

Upon receipt of Newsletter No. 3 and a letter from ADOT&PF providing a proposed boundary map for Alternative B, the community assembled a meeting to obtain input. The City, the Village Council, and Ekwok Natives, Ltd., prepared a petition in support of Alternative B. This resolution was delivered to ADOT&PF on February 19, 2003, at which time an informal meeting was held between the village leaders and ADOT&PF. Minutes of both meetings and a copy of the petition are included in Appendix A, Public Involvement.

7.0 LIST OF PREPARERS

The following individuals have been primarily responsible for the development or review of the project and documents.

Table 7 – Project Coordinators

Name	Affiliation/Role	Phone Number	Relevant Experience
Don Baxter, P.E.	ADOT&PF Project Manager	(907) 269-0610	30 years engineering experience; 24 years in planning, design, and construction
Dan Golden	ADOT&PF Environmental Analyst	(907) 269-0537	15 years environmental analyst, 2 years land management, 1 year geologist
Royce Conlon, P.E.	PDC, Inc. Consulting Engineers Project Manager	(907) 452-1414	14 years airport planning and design experience; 10 years project management experience
Ken Risse, P.E.	PDC, Inc. Consulting Engineers Project Engineer	(907) 452-1414	12 years civil engineering and design experience
Donna Robertson	MACTEC, Inc. Environmental Consultant	(907) 563-8102	12 years wildlife biology and natural resources management
Anne Brooks	Brooks and Associates Public Involvement	(907) 272-1877	29 years experience with planning, engineering, and construction projects in Alaska
Sharon McClintock	McClintock Land Associates, Inc. Land Use Study	(907) 694-4499	30 years experience on rural Alaska, land title, site control, and transportation planning
James Dryden	Dryden Instrumentation Wind Data Collection	(907) 344-4995	34 years experience with computers, instrumentation, and data collection
Christine Storey	PDC, Inc. Consulting Engineers Environmental Analyst	(907) 452-1414	18 years as an environmental analyst with ADOT&PF; 1 year as environmental coordinator at PDC
Shawna Laderach, EIT	PDC, Inc. Consulting Engineers Environmental Analyst	(907) 452-1414	1.5 years experience as an environmental analyst
Steve Becker, CCP	PDC, Inc. Consulting Engineers Environmental Coordinator	(907) 452-1414	8 years environmental planning experience; 4 years as environmental project manager
Heather Dorsett	PDC, Inc. Consulting Engineers Technical Editor	(907) 452-1414	3 years experience as a technical editor
Ron Gebhart, P.E.	PDC, Inc. Consulting Engineers Principal-in-Charge	(907) 452-1414	33 years civil engineering experience 18 years as principal

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