
APPENDIX D

PHASE I PRELIMINARY SITE INVESTIGATION

EKWOK AIRPORT REHABILITATION

ADOT&PF Project No. 55377

Phase I Preliminary Site Investigation

October 2002



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Ekwok Airport Rehabilitation
Phase I Preliminary Site Investigation
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1.0 INTRODUCTION

The State of Alaska Department of Transportation and Public Facilities (ADOT&PF) and the Federal Aviation Administration are proposing to make improvements to the existing airport in the City of Ekwok. ADOT&PF has retained PDC Inc. Consulting Engineers as the project design consultant. Harding ESE is providing the natural resources/biological and hazardous materials assessment for the project.

This report presents the results of Harding ESE's evaluation of the potential presence of hazardous materials or petroleum contamination within the existing airport property, the proposed boundaries of the airport alternatives, and properties abutting the proposed alternatives.

1.1 Purpose

The purpose of this Preliminary Phase I Site Investigation is to document and evaluate current and past conditions that may adversely affect the proposed project. Issues of concern include recognized environmental conditions that have the potential to adversely affect any of the proposed alternatives for the project. Recognized environmental conditions are defined in American Society for Testing and Materials (ASTM) E 1527-00 as follows:

“Recognized Environmental Conditions means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.”

1.2 Limiting Conditions

In many of the undeveloped areas, dense understory vegetation prevented observation of surface conditions.

1.3 Scope of Services

The scope of services for the Phase I Site Investigation included the following tasks:

- Conduct a Phase I Preliminary Site Investigation of the project area to identify sites that are or could potentially be contaminated with hazardous materials. The project area includes the existing and potential right-of-way and properties abutting the proposed right-of-way required for each project alternative.
- Prepare a report that summarizes the results of the Phase I Preliminary Site Investigation to include all known or potentially contaminated sites identified during the investigation (including type and extent, if known) and recommendations for further investigation, if appropriate. Appropriate background information such as logs of personal interviews, historical aerial photos, land use records, previous reports, and pertinent information from regulatory agency files will be appended to the report.

This Phase I Site Investigation was performed in accordance with current generally accepted standards of practice for Phase I Site Investigations. It was performed in accordance with Article B5.5.6.5 (Phase I Preliminary Site Investigation) of Harding ESE and PDC's contract agreement and in general accordance with the ASTM E 1527-00 (*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*).

2.0 BACKGROUND INFORMATION

2.1 Community Background

The project area is in the City of Ekwok. Ekwok, Alaska, is in the Bristol Bay area, approximately 42 air miles northeast of Dillingham and 290 air miles southwest of Anchorage (Figure 1).

Ekwok is a Yup'ik Eskimo community adjacent to the Nushagak River. During the 1800s, the settlement was used in the spring and summer as a fish camp, and in the fall as a base for berry picking. By 1923, it was the largest settlement along the river. The City was incorporated in 1974. In 2001, Ekwok had a population of 130 (Alaska Department of Community and Economic Development, 2002).

Air transportation is the primary source of travel to and from Ekwok. There are no roads connecting the village to any other settled area. Currently there is a 2,720-foot state-owned gravel runway. The Ekwok Airport has deteriorated since its last improvement in 1983. The runway has lost most of its surfacing material and drainage is poor. There are numerous times during spring breakup when the airport is unusable.

The purpose of the proposed project is to upgrade the airport to current standards, providing safe aircraft access to Ekwok and planning for future needs. The proposed project will include the following activities:

- Expand the runway to accommodate larger passenger, cargo, and medevac aircraft with non-precision instrument (global positioning system) capabilities.
- Construct an apron and taxiway system with the required separation distances.

- Resurface the entire facility with crushed aggregate surface course.
- Construct ditching and grading to eliminate existing drainage problems.
- Install a pilot-operated lighting system.

2.2 Alternatives

The following preliminary alternatives have been developed to meet the project's purpose and need. There are currently four alternatives being considered, one of which is the no-build alternative. Alternative C is ADOT&PF's preferred alternative.

Alternative A – Extend Existing Alignment

This alternative is along the same alignment as the existing airport, but would shift the runway northeast 350 feet and lengthen it to 3,300 feet (Figure 2). The apron area would be moved to the northwest side of the runway to provide the required separation distance. Lease lots would be provided behind the new apron. Drainage would be improved. Medium intensity runway lights would be installed. New access to the landfill and realignment of the existing road to the property on the north end of the airport would be required. Property would need to be acquired for clearing trees from the airspace.

Alternative A-1 – Extend Existing Alignment – Visual, Utility Runway

This alternative was developed to reduce the right-of-way requirements and would exclusively serve small aircraft (less than 12,500 pounds) with a visual approach. Alternative A-1's runway configuration is identical to Alternative A. The apron and adjacent lease lot areas would be relocated beside the existing runway apron (Figure 3). Property would be acquired for the

runway extension and tree clearing from the airspace. This alternative is the least costly, but does not provide for large aircraft or instrument approaches.

Alternative B – Move North and Rotate About 6 Degrees Counterclockwise

Alternative B would shift the runway alignment northeast approximately 350 feet and rotate 6 degrees counterclockwise from the existing alignment (Figure 4). The runway would be lengthened to 3,300 feet. The apron and adjacent lease lots would be located on the east side of the runway on the existing airport property. Drainage would be improved and medium intensity lights installed. Property would need to be acquired for the new runway and for clearing trees from the airspace. The access road to the landfill would have to be relocated to meet the airspace clearance requirements.

Alternative C – Move North and Rotate as Required

Alternative C would shift the runway northeast approximately 2,000 feet and rotate 12 degrees counterclockwise to avoid platted residential lots (Figure 5). The final orientation will be adjusted as more wind information is acquired. The runway would be lengthened to 3,300 feet. The apron would be on the east side of the runway, with lease lots behind the apron. Access to the landfill from the south end of the existing runway would remain as is. Drainage would be provided and medium intensity lights installed. Property would need to be acquired for the new runway, taxiway, and for clearing trees from the airspace.

Alternative D – No-Build

Alternative D is the no-build alternative (Figure 6). Under the no-build alternative, the airport would remain as it currently exists. The existing situation of declining runway conditions would continue.

3.0 RESULTS

3.1 Location and Land Ownership

The project area includes land in the City of Ekwok, Alaska (Township 9 South, Range 49 West, Sections 25, 35, and 36, Seward Meridian).

The ADOT&PF owns approximately 77 acres of airport property, 2.2 acres for an aviation and hazard easement, and roughly 0.5 acre for a drainage easement. Ekwok Natives Ltd. and the Bristol Bay Native Corporation each own the subsurface rights to property surrounding the airport. Known land ownership in the vicinity adjacent to airport property consists of the City of Ekwok, Ekwok Native Ltd., a native allotment, and a 17(b) trail easement managed by the Bureau of Land Management.

3.2 Surface Features and Land Use

Ekwok is on the border of the Kuskokwim Highlands (north of Ekwok) and the Western Alaska Coastal Plains and Deltas (south of Ekwok) (Rieger et al., 1979). Hills and low mountains characterize the Kuskokwim Highlands. The Western Alaska Coastal Plains and Deltas are characterized by a highly irregular surface with very little relief.

Based on the Alaska vegetation classification system in Viereck et al. (1992), the location of the City of Ekwok is described as mixed woodland forest with dominant trees consisting 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*).

Ekwok is adjacent to the Nushagak River. Klutuk Creek, south of the City, drains from the region into the Nushagak River. Spring flooding from the Nushagak River is common in Ekwok. Ekwok was most recently flooded in May of 2002.

Land use of the property abutting the airport is primarily residential or undeveloped land (mixed woodland forest). Residential housing is southeast of the airstrip. Ekwok's City Center and boat launch are south of the airport. The Nakelutin subdivision is west/northwest of the airport. The City's gravel source (gravel pit) and the village's active landfill are northwest of the airport. Snow machine and all-terrain vehicle (ATV) trails are located throughout the undeveloped woodland to the north and east of the airport. Figures 2 through 6 show the City layout in relation to the proposed airport alternatives.

Public services and facilities in Ekwok are limited. Individual wells provide water for the majority of the community. The Housing and Urban Development (HUD) homes in the Nakelutin subdivision have individual wells and a piped septic system. The City operates a piped sewage system with sewage lift station that connects to most of the other residences. A few remaining homes use septic or flush/haul systems.

3.3 Field Reconnaissance

A field reconnaissance of the project area was conducted on August 27, 2002, to evaluate the potential presence of hazardous materials or petroleum contamination within the proposed boundaries of the Ekwok Airport Alternatives. Harding ESE personnel walked the perimeter of the existing airstrip, apron, and equipment storage buildings. In addition, an ATV was used to drive all access roads and connecting trails. Areas within the existing airport boundaries, potential property boundaries for all proposed airport alternatives, and adjacent properties were

inspected for recognized environmental concerns. Appendix A provides photographs of some the current conditions at the airport and adjacent properties.

The following areas were inspected for recognized environmental conditions and findings are described.

Airport Apron and Runway

An area (about 20 square feet) believed to be petroleum, oil, and lubricant (POL) staining was visible on the apron. No POL staining or other hazardous materials were observed on the runway.

Airport Equipment Storage Building

This metal building is on the apron. Harding ESE personnel were not able to gain access to the building for inspection, thus conditions within building are unknown. The perimeter of the building was inspected and no POL staining or hazardous materials were observed.

Bristol Bay Telephone Connex

This facility is used for storage of phone company equipment. It is at the southern edge of the airport apron, adjacent to the equipment storage building. No POL stains or hazardous materials were observed around the locked connex.

Access Roads/ATV Trails

Several access roads connect to the airport. Four run northwest of the airport and five run south to southeast of the airport. All access roads were either walked or driven by ATV. A network of ATV trails weaves through the woodland northeast of airport. Some trash was observed along

the trails, but no POL staining or hazardous materials were observed on the access trails or access roads.

City Backup Generator Site

This fenced backup facility was in operation at the time of the site visit. The site contains the city backup generator and bulk fuel supply and is surrounded by a fence. Two single-walled tanks of approximately 1,000- and 5,000-gallon capacity were present and contained fuel. Stained soils were observed below the valve of the 5,000-gallon tank. In addition, several 55-gallon drums with connected hoses were present at the site. Two other unconnected empty tanks (about 1,000 gallons each) were lying on the ground outside the fenced area, and stressed vegetation was observed around one of the empty tanks. A waste-oil storage bin was adjacent to the fenced area and appeared to be receiving waste oils.

Existing Landfill

The existing landfill is indicated in Figure 2. This landfill appears to be typical of what is found at an unpermitted site. Waste is dumped into an excavated hole, and there appears to be occasional covering of waste with soil material. Situated at the landfill site is a large tank-style burner, which was reportedly used to burn hazardous materials. Type and quantities of material burned is unknown. No POL stains or hazardous materials were visible at this site.

Gravel Pit

The gravel pit appears to be used occasionally for mining of borrow material and as a target practice area. Some areas of the borrow site were wet, which suggests that surrounding floor elevations of the pit are near groundwater. Some areas of the gravel pit were reported to have

been used a solid waste disposal area in the past. No solid waste, POL staining, or other hazardous materials were observed in this area.

Nakelutin Subdivision (HUD) and Other Residences

This subdivision on the northwest side of the existing airport is a HUD development with individual wells and a piped septic system. Most homes have elevated 55-gallon drums or larger fuel tanks. Pole mounted power transformers are located on the power poles serving the neighborhood. One area of the subdivision, as shown in Figure 2, indicates where solid waste dumping reportedly occurred in the past, although no waste was visible from a ground surface inspection. No POL staining or other hazardous materials were observed in this area.

Fifth Street, which parallels the airport on the southwest (river side), provides access upriver and separates the airport from several residences along the river. These residences were typical of Ekwok, with overhead power and phone service and 55-gallon and some larger tanks for fuel storage. No POL staining or other hazardous materials were observed in this residential area.

City Power Plant (Tesoro tanks)

This facility is situated along the bank of the Nushagak River south of the airport. The three fuel tanks (about 20,000 gallons) were being used to dispense fuel, but the generators were not operational. Adjacent to the new tanks were two empty fuel tanks in a state of disrepair. A spill occurred at the power plant this spring during a flooding event of the Nushagak River (Section 3.5). POL staining or other hazardous materials were not observed during the site visit.

School

The school facility has fuel storage capacity of approximately 50,000 gallons in three aboveground storage tanks and a backup generator set. No POL staining or other hazardous materials were observed in this area.

3.4 Previous Environmental Investigation

No records of previous environmental investigations of the project area were identified or provided to Harding ESE.

3.5 Records Review

Harding ESE researched the Alaska Department of Environmental Conservation (ADEC) databases of contaminated sites, spills, and the leaking underground storage tank program and identified no contaminated sites, spills, or leaking underground tanks in the project area.

A spill in May 2002 was reported to the ADEC. The spill of 120 gallons of used lubricating oil at the City's power plant happened during a flooding event of the Nushagak River. The ADEC provided absorbent pads, booms, and protective gloves to the City of Ekwok for them to conduct a minor cleanup; however, the floodwaters washed away the majority of the spill. No further cleanup action was recommended by the ADEC (Wien, 2002).

In addition, databases that identify sites of environmental concern were reviewed by a computerized search conducted by a commercial service. Environmental Data Resources, Inc. conducted a search of existing public record environmental databases, including those specified in ASTM E 1527 that are routinely available in a searchable format. A copy of the database report is provided in Appendix B. No sites of potential concern were identified in the report.

3.6 Information from Interviews

During the site visit, local Ekwok residents were interviewed about the history and current use of the airstrip and surrounding properties and known contamination within the project area. Efforts were made to conduct telephone interviews with individuals who could not be interviewed during the site visit. The individuals interviewed are listed below:

- Luki Akelkok Sr., Ekwok Natives Limited president, and Ekwok Airport Maintenance Supervisor for approximately 20 years
- Ernie Nelson, City of Ekwok, Mayor

Two historic spill sites were identified during interviews: (1) the spill at the power plant caused by flooding (same spill reported to ADEC and discussed above) and (2) a spill of an unknown quantity of heating fuel south of the airport, behind Maaluq's Lodge. The heating fuel spill was from about 2 years ago and was claimed to have been cleaned up, but to unknown standards. No evidence of either spill was observed during the site visit. The power plant is more than 1,000 feet south and downgradient from any of the proposed airport boundaries. The majority of this spill was washed away by floodwater (Wien, 2002). The location of the heating fuel spill is approximately 350 feet south and downgradient of any of the proposed airport alternatives. Figures 2 through 6 show the locations of the spills in relation to the proposed airport alternatives.

In addition, two reported historic solid waste disposal sites were identified during interviews. One, near the HUD housing district, northwest of the southern end of the airstrip, was said to be relocated to the existing landfill location when the airport was expanded in the early 1980s. This

area can be seen in aerial photography from 1974 as an opening that appears to have been an old material source. In 1996 aerial photography, this area appears to have been backfilled and graded and currently is an open field with sparse vegetation and a shed. The other reported historic solid waste disposal site identified during interviews is at the gravel pit. It is not known if the gravel pit identified as a historic solid waste disposal site is the area of the existing gravel pit or the possible material source area discussed above. The existing solid waste disposal site is northwest of the northern end of the airstrip. These two historic solid waste disposal sites are not confirmed. Figures 2 through 6 show the locations of the historic solid waste disposal sites and the existing landfill in relation to the proposed airport alternatives.

3.7 Aerial Photograph Review

Aerial photographs of the Ekwok airport area for the years of 1962, 1974, and 1996 (Appendix D) were compared to identify changes within the project area.

1962 Photographs 6 and 7 Ekwok Village, dated 7/13/62. The original dirt airstrip is shown in this aerial. In this photograph, the village of Ekwok is concentrated next to the river with a few trails to and around the airstrip. The airstrip had a small apron in the same location of the present apron.

1974 Photographs dated 8/14/74. This photograph was taken after the first airport expansion, as the airport was surfaced, and the gravel pit and haul roads have been established. The townsite is moved generally away from the riverbank and onto higher ground. Most of the gravel roads around the southeast end of town have been established.

1996 AeroMap, Photographs 1-4 and 1-5, Ekwok, dated 6-16-96. The existing airport, access roads, and structures in their present configuration are shown in this photo. The airport has been lengthened to its current length, the landfill is seen in its current location, and the Nakelutin subdivision and Fifth Street have been constructed.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Harding ESE conducted a Phase I Site Investigation in accordance with the scope of services described in Section 1.3 and in general accordance with the scope and limitations of ASTM Standard Practice E 1527-00.

The Phase I Preliminary Site Investigation indicated that several properties in the project area have recognized environmental conditions as defined in ASTM 1527-00. The following is a listing of these sites with recommendations for additional action.

Spill Sites

Two spill sites were identified south of the airport and well outside and downgradient of all of the Ekwok Airport alternatives. The site reconnaissance, interviews, records review, and the location of the spill sites indicate that the potential for encountering areas of contamination from these sites is low. No further action is recommended at this time.

Past Solid Waste Disposal Sites

Two possible historic solid waste disposal sites were identified during community interviews. The airport boundaries for Alternative A and Alternative B would overlap the two possible historic solid waste disposal sites (Figures 2 and 4). The airport boundary for Alternative C overlaps one of the possible historic solid waste disposal sites (Figure 5). The project design should try to avoid these sites to the extent possible. As the design progresses, the potential project impacts will be better determined. Further research, interviews, and possibly subsurface investigations may be necessary if the sites are to be affected by construction activities. Should waste be encountered during construction, the contractor will need to take the necessary steps for proper handling of the waste.

Residential Properties

Many of the developed properties abutting the airport property have aboveground heating fuel storage tanks, which feed individual home heaters for heating fuel. However, based on the site reconnaissance, interviews, review of aerial photographs, and records review, it appears the potential for encountering areas of contamination from these properties is low. No further action is recommended at this time.

City Backup Generator Site

The recognized environmental conditions at this site included the presence of stained soils, leaking tanks, stressed vegetation, and 55-gallon drums of petroleum products. The City generator site is about 100 feet or more south and downgradient of any the proposed airport property boundaries. Because of the nature of site operations and the presence of soil staining at this site, localized contamination of the soils in this area is likely. However, because of the location of the site in relation to the proposed airport rights-of-way, impacts to the proposed airport alternatives from this site are not likely. Further research, interviews, and possibly subsurface investigations may be necessary if this site is to be affected by construction activities.

5.0 LIMITATIONS AND RESTRICTIONS

This Preliminary Phase I Site Investigation was restricted to the scope of services as described in Section 1.3. The following activities were excluded from the scope of services:

- An in-depth site reconnaissance of the developed properties abutting the existing airport right-of-way
- Performing or acquiring a chain-of-title/record of historic ownership search
- Certifying the validity of information obtained from interviews
- Collecting or analyzing any sample of air, water, soil, flora, fauna, a building material, or any other substance, or making any representation or certification regarding its nature or quality

The preparers of this report have relied upon certain verbal information, representations, and documents provided by government, property owners and occupants, and a computer search of government databases by a firm providing that service. To the extent that the conclusions in this report are based in whole or in part on such information, they are contingent on its validity. The preparers assume no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or not fully disclosed or available to the preparers.

No representations or warranties are made concerning the nature or quality of the air, soil, water, building materials, or any other substance on any property, other than the visual observations and documented conditions as stated in this report. Furthermore, environmental conditions may exist in the project area that could not be identified by visual observations. Harding ESE's Preliminary Phase I Site Investigation should not be construed to mean that there are no hazardous materials,

but that Harding ESE's observations and the examination of records did not disclose the presence or likely presence of hazardous materials except as indicated in this report. Harding ESE is not responsible for changing conditions that may alter the findings of this Phase I Site Investigation.

Within the limitations of the agreed-upon scope of services, this assessment has been undertaken and performed in a professional manner, in accordance with generally accepted practices, using the degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, express or implied, is made. No other party should rely on the information contained herein without Harding ESE's prior written consent.

6.0 REFERENCES

Alaska Department of Community and Economic Development. 2002. Alaska Community Databases – Ekwok. [Online] Available <http://www.dced.state.ak.us>, August 2002.

American Society for Testing and Materials. 2000. Standard E 1527-00. *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

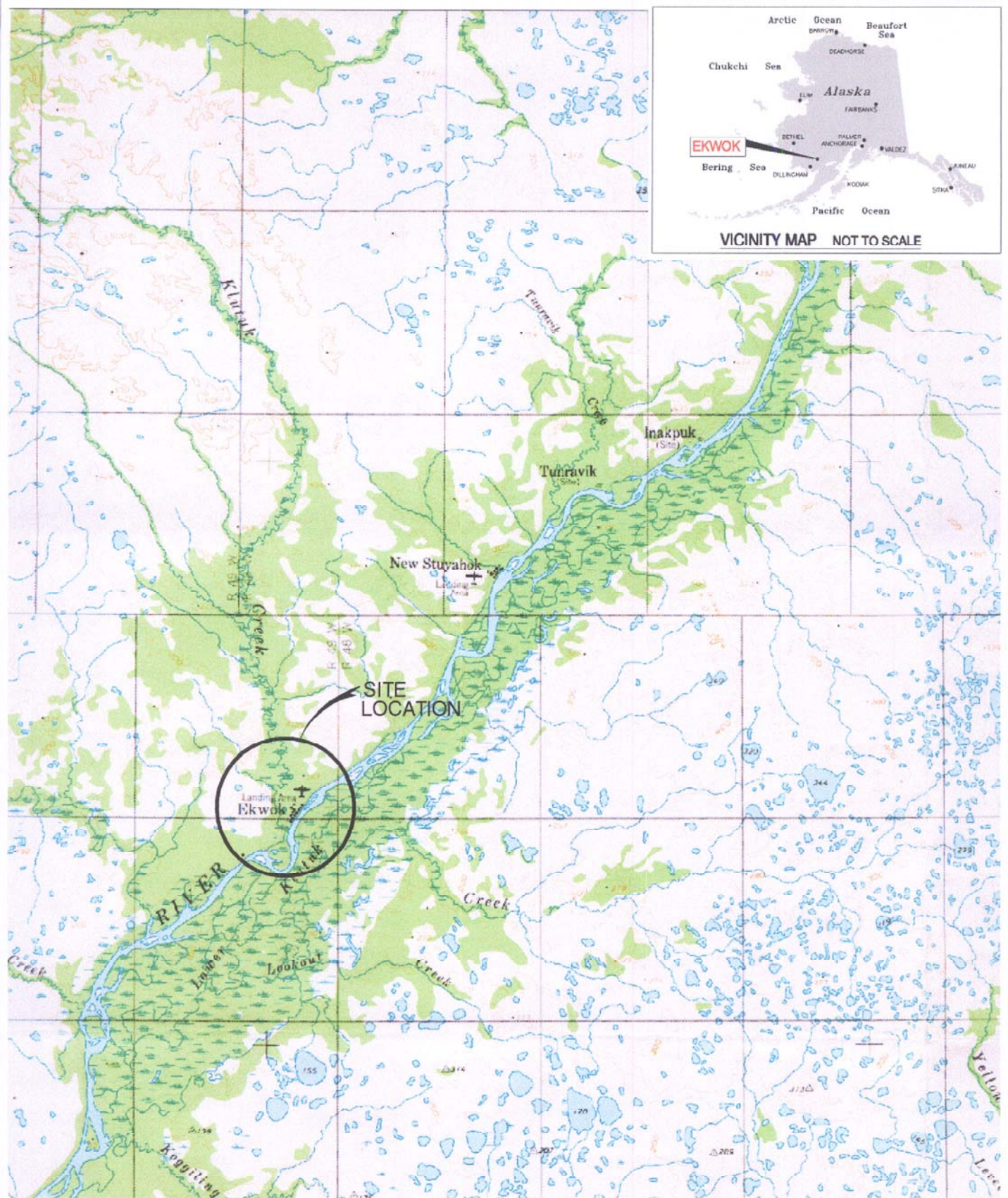
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Viereck, L.A. C.T. Dryness, A.R. Batten, and K.J. Wenzlick. 1992. *The Alaska vegetation classification*. General Technical Report PNW-GTR-286. Portland, Oreg.: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

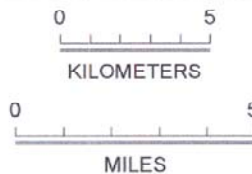
Wien, A. 2002. Division of Statewide Public Service Environmental Assistance Center, Alaska Department of Environmental Conservation, Alaska. Telephone communication with Sasha Forland, Harding ESE, September 24.

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FIGURES

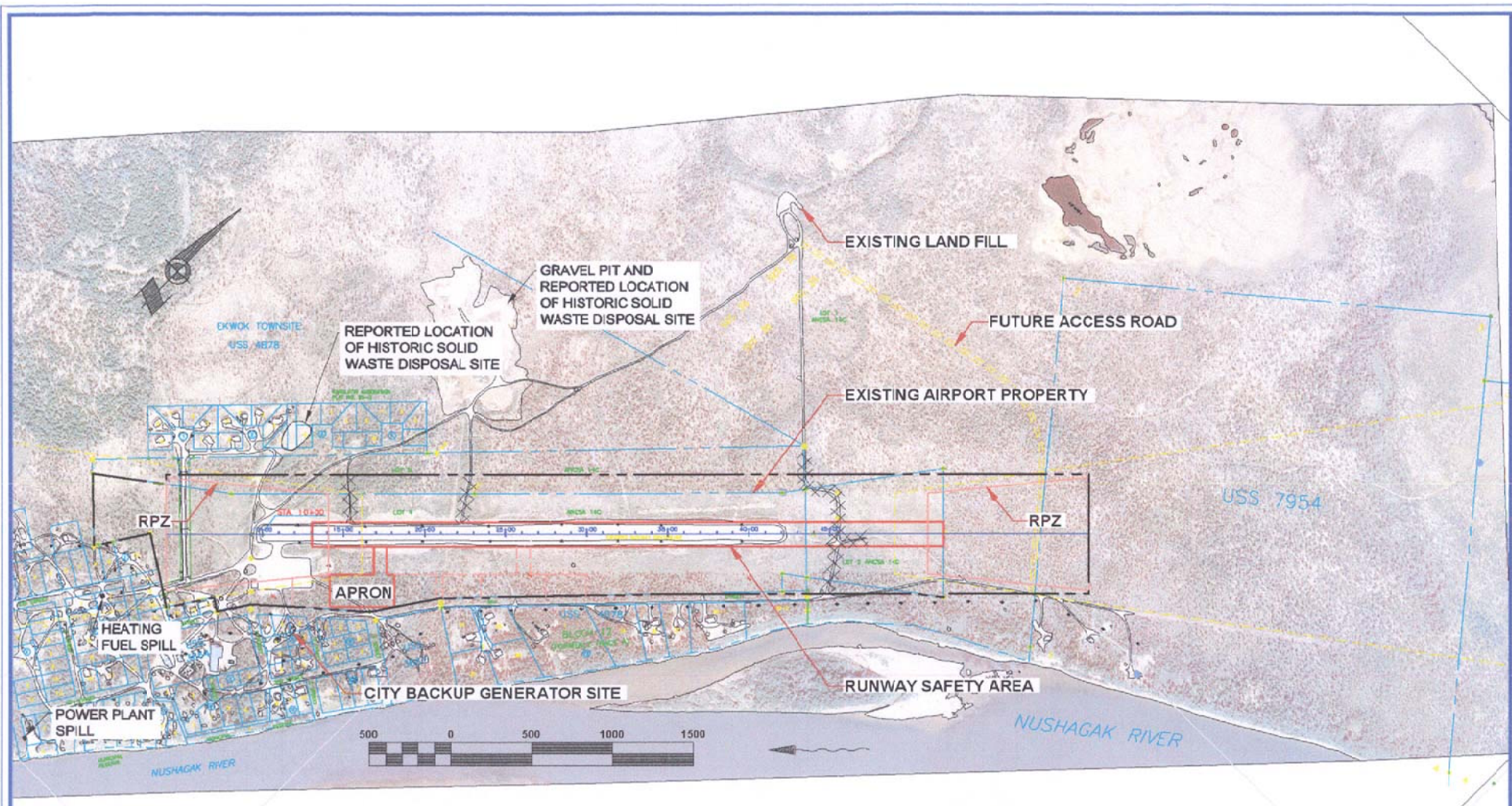


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U.S.G.S.
DILLINGHAM AK, QUADRANGLE



Ekwok Airport Rehabilitation
ADOT&PF Project No. 55377
**SITE LOCATION AND
VICINITY MAP**

FIGURE 1



LEGEND:

- XXXXXX REMOVE OR BLOCK
- AIRPORT BOUNDARY (THIS ALTERNATIVE)
- EXISTING PROPERTY LINES
- FUTURE DEVELOPMENT OF APRON, LEASE LOTS AND AVIATION SUPPORT AREA.

3

FIGURE

JULY 2002
PROJ. No.
F02009

DESIGN:

KAR

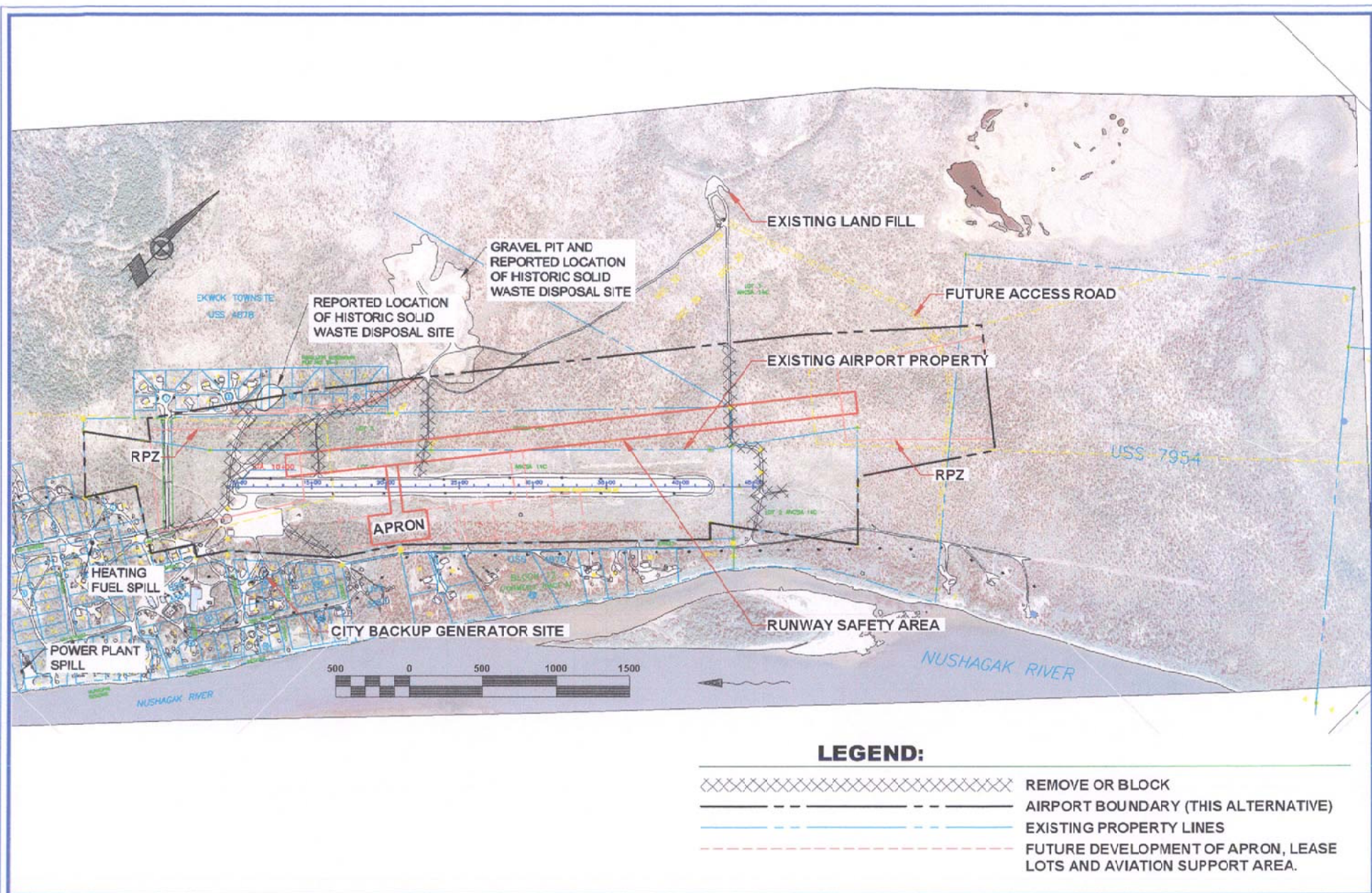
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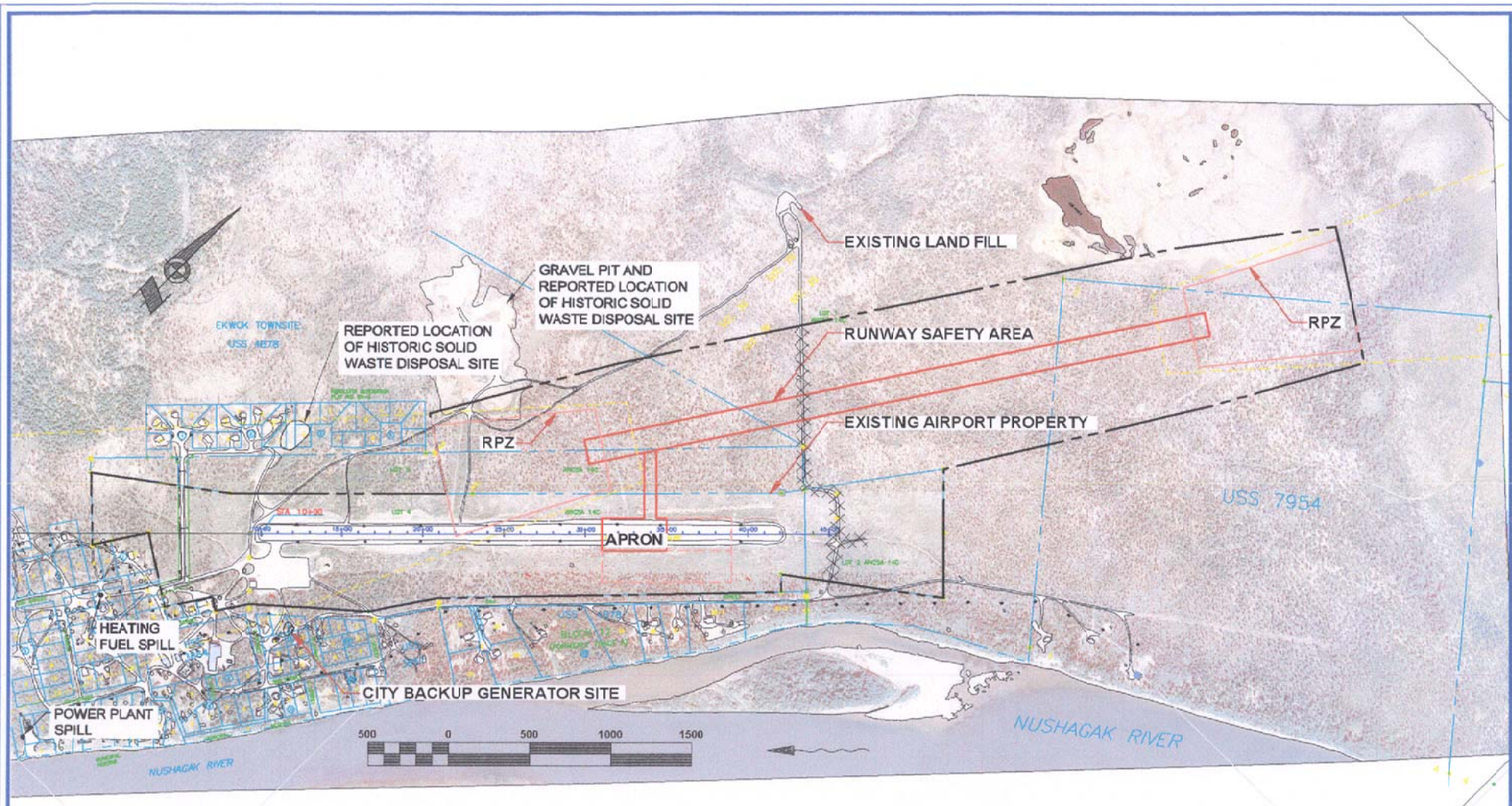
KAR/RJP

CHECK:

EKWOK AIRPORT ALTERNATIVE A-1

EXTEND EXISTING ALIGNMENT - VISUAL, UTILITY RUNWAY





LEGEND:

- XXXXXX REMOVE OR BLOCK
- AIRPORT BOUNDARY (THIS ALTERNATIVE)
- EXISTING PROPERTY LINES
- FUTURE DEVELOPMENT OF APRON, LEASE LOTS AND AVIATION SUPPORT AREA.

5

FIGURE

PROJ. No.
F02008

JULY 2002

DESIGN:

KAR

DRAWN:

KAR/RJP

CHECK:

**EKWOK AIRPORT
ALTERNATIVE C
MOVE NORTH AND ROTATE AS REQUIRED**

