

Environmental Assessment

for the

Installation of the Moose Lake Utilidor System

Eielson AFB, Alaska

**354 CES/CEVP
Eielson AFB, Alaska
April 2005**

Report Documentation Page

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**FINDING OF NO SIGNIFICANT IMPACT (FONSI)
and
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)
for the**

Upgrade of the French Creek Subdivision Utilidor Environmental Assessment

Introduction

Eielson Air Force Base (Eielson AFB) has a resident base population of more than 5,300 active duty and dependent personnel. These residents live in housing that is located mainly on the east side of the base. Providing infrastructure support to this housing is a critical part of the overall base mission. A portion of the utility system that provides heat for the French Creek Subdivision is in critical need of replacement as a result of high groundwater.

Description of the Proposed Action

The proposed action will result in the construction of a 2,250-foot-long section of utilidor that would replace an existing direct buried utility line in the Moose Lake area of housing on Eielson AFB. The utilidor would be constructed by excavating to a depth of approximately 10 feet, constructing a concrete vault, placing the utility lines in the vault, and then backfilling with non-frost susceptible material. The proposed action would result in the loss of 0.16 acres of scrub/shrub riparian wetlands.

Alternatives to the Proposed Action

There were two alternatives to the proposed action. Alternative 1 would replace the existing damaged/leaking direct buried utility lines with new lines. The new lines would be placed in the same trenches as the previously installed lines. Alternative 2 would install a system identical to that proposed in the proposed action, but rather than construct it in the existing utility line footprint, it would be rerouted and placed in roadbeds to avoid wetlands.

The No Action Alternative

This alternative would result in the continued use of the existing direct buried lines, which currently experience leaks and are constantly in need of repair. The system would be unreliable and costly to maintain, especially during the winter months.

Environmental Impacts of the Proposed Action

Wetlands

The proposed project will result in impacts to 0.16 acres of open water/riparian wetlands. Some of these wetlands were previously impacted during installation of the existing direct buried lines.

Biological Resources

Impacts to biological resources from the proposed project are expected to be minimal. The values of the resources were adversely affected when the original utility line was installed. In addition, the area is immediately adjacent to a high-density residential area that reduces its attractiveness as wildlife habitat. At present, the area is occasionally used by resting birds in the shrub areas, and by small mammals such as voles and rabbits. This limited use by wildlife would be reestablished once the project is complete and the utilidor right-of-way is revegetated.

Threatened or Endangered Species

There are no threatened or endangered species in the project area. The project area is not suitable habitat for any of the threatened or endangered species occurring in the Alaskan interior.

Historical or Cultural Resources

Most archeological sites on Eielson AFB lands have been identified and mapped. The proposed project is not associated with any known sites. In the event that historic or cultural sites are discovered during project construction, activities will be halted and a professional archeologist will evaluate the find.

Air Quality

The proposed actions will have minor air quality impacts during construction due to fugitive dust and machinery exhaust. Such impacts will be highly localized and temporary in nature.

Mitigation

No mitigation was required by state and federal agencies for any aspect of the proposed work.

Public Comment

No public comment was received from the public noticing of the EA/FONSI/FONPA or the Corps of Engineers Permit for this project.

Findings

Pursuant to the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) implementing regulations for NEPA (40 CFR Part 1500-1508), and Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989), the Air Force has conducted an EA for the construction of a utilidor system for the Moose Lake area of base housing. This FONSI/FONPA has been developed pursuant to information provided in the accompanying EA.

Finding of No Practicable Alternative: Eielson AFB is an Air Force facility that operates, maintains, and trains combat forces in close air support of military operations worldwide. Eielson AFB must have adequate housing facilities for active duty personnel and dependents. Taking all the environmental, economic, and other pertinent factors into account, pursuant to Executive Order 11990, the authority delegated by SAFO 780-1, and taking into consideration the submitted information, I find that there is no practicable alternative to this action and the proposed action includes all practical measures to minimize harm to the environment.

Finding of No Significant Impact: Based on this environmental assessment, which was conducted in accordance with the requirements of NEPA, CEQ, and Air Force Instructions, I conclude the construction of a utilidor system for the Moose Lake housing area will not result in significant impacts to the environment. I also find that the preparation of an environmental impact statement is not warranted.



VICTOR E. RENUART, JR.
Lieutenant General
Vice Commander, Pacific Air Forces

JUL 21 2005

Date

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1.0 Purpose and Need for Action

Section 1 provides a description of the purpose of and need for the proposed action.

1.1 Background and Objectives for the Proposed Action

1.1.1 The 354 FW directs operations, training, and support for F-16CG and A/OA-10 precision weapons systems. They also oversee operations and training for Air Liaison Officer (ALO) and Tactical Air Control Party (TAC-P) combat teams that support ground operations through the lethal application of airpower. The 354 FW provides expeditionary combat ready forces for worldwide employment across the full spectrum of air and space operations. The 168th Air Refueling Wing (ARW) is the primary tanker unit of the Pacific Rim, annually transferring over 17 million pounds of fuel in flight to predominantly active duty aircraft.

1.1.2 In 1991, in response to an acute housing shortage for military personnel assigned to the base, Eielson AFB proposed that new on-base housing be constructed. This housing project was completed in 1997 and provided 366 housing units. The only on-base location available for this housing was east and north of an area that contained the existing base housing. This area is bounded by black spruce wetlands and French Creek to the east and north. As a result of its proximity to wetlands, groundwater depths in the area are quite shallow. This condition has caused significant problems for the operation and maintenance of utility lines that serve the housing area.

1.1.3 The method that is normally used for installing underground utility lines on Eielson AFB is to construct a concrete utilidor (box) and lay the utility pipes in the utilidor. This protects the lines from groundwater infiltration due to high water tables. The utility systems serving this section of Eielson AFB housing, however, were installed by a direct burial process. In this process, steam and water lines are buried in a soil trench that is 6 to 8 feet deep. In areas where the water table is high, lines get water logged, impairing insulation and causing significant steam transmission losses as well as breaks in the lines and system outages.

1.1.4 To address the need for system improvement, Eielson AFB is proposing to replace the direct buried lines with a conventional utilidor system. This would provide this area of base housing with a reliable utility system that meets the standards required for Air Force housing. In addition, the proposed solution should be cost-effective and provide the least amount of disturbance and inconvenience to housing residents during the construction process as is possible to achieve.

1.2 Location of the Proposed Action

1.2.1 Eielson AFB is located in the Tanana River Valley on a low, relatively flat, floodplain terrace that is approximately 2 miles north of the active river channel. Other communities near Eielson AFB include Moose Creek to the north and Salcha to the south (**Figure 1-1**).

REGIONAL AND BASE LOCATION MAPS

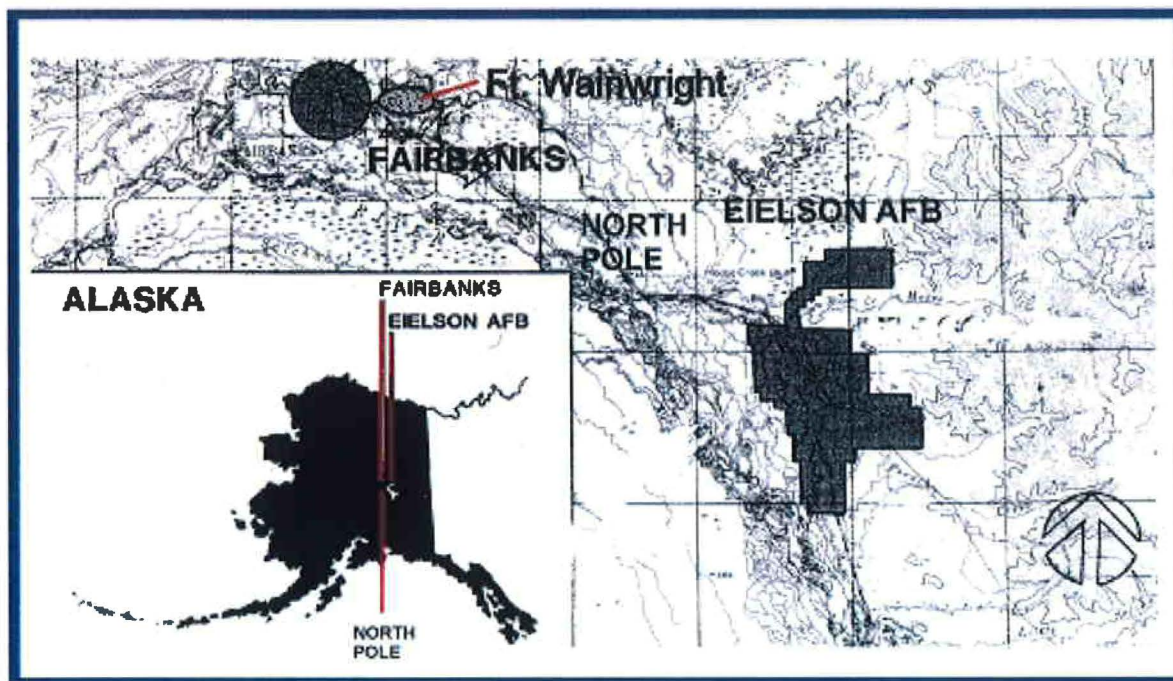


Figure 1-1 Base Location Map

1.2.2 Base lands include 19,790 contiguous acres bounded on the west by the Richardson Highway and on the north and east by Army lands (Yukon Training Area). To the south, the community of Salcha borders Eielson AFB. The developed portion of Eielson AFB is primarily an area filled by gravel to elevate potential building sites above the 100-year floodplain of nearby watersheds. In addition, more than 90 percent of the lands that constitute Eielson AFB were at one time wetlands. Of the remaining undeveloped portions of the base, 79 percent are wetlands (see **Figure 1-2**). As a consequence, land planning and utilization of Eielson AFB lands become very difficult if one is to entirely avoid siting facilities in wetlands and floodplains.

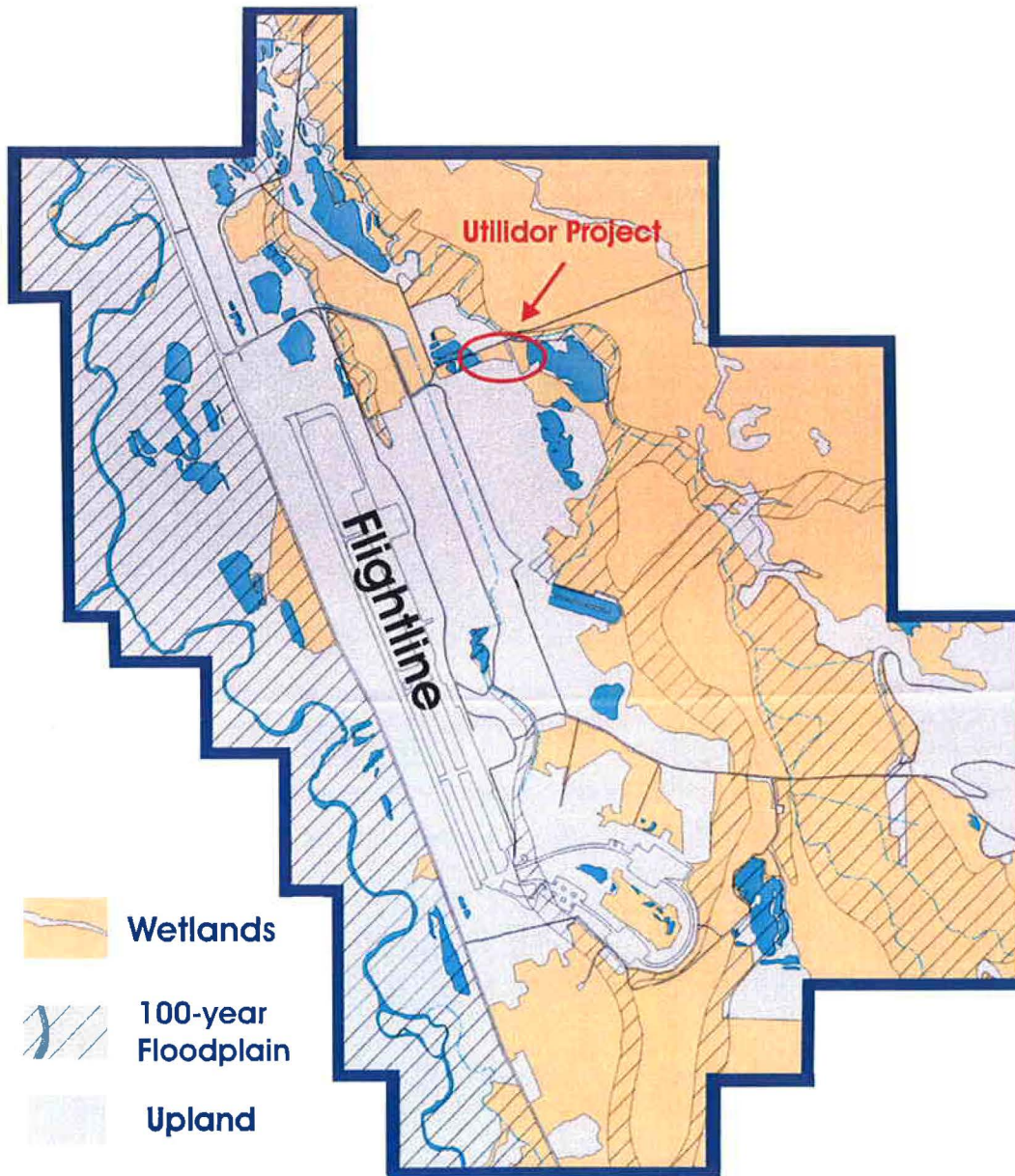


Figure 1-2 – Wetlands Distribution on Eielson AFB

1.3 Proposed Action

The proposed action would result in the construction of a 2,250-foot-long section of utilidor that would replace an existing, direct buried, utility line in the French Creek Subdivision on Eielson AFB. The utilidor would be constructed by excavating to a depth of approximately 10 feet, constructing a concrete vault, placing the utility lines in the vault, and then backfilling with non-frost susceptible material. The proposed action would result in the loss of 0.16 acres of scrub/shrub wetlands.

1.4 Alternatives to the Proposed Action

1.4.1 *Alternative 1 – Replace the existing direct buried utility lines with new lines:* This alternative would result in the excavation and replacement of the existing direct buried lines. The new lines would be placed in the same trenches as the previously installed lines and waterproofed more thoroughly than the original direct buried lines were.

1.4.2 *Alternative 2 – Use existing roadbeds for placement of utilidors to avoid wetland areas:* This alternative would result in the replacement of all existing direct buried lines with a utilidor system similar to that planned for the proposed action. This would require taking out-of-service roads required for access to sections of base housing for an extended period of time during project construction.

1.5 No Action Alternative

This alternative would result in the continued use of the existing direct buried lines, which currently experience leaks and are unreliable.

1.6 Decision to be Made

1.6.1 As required by Air Force Instruction 32-7061, an *Environmental Impact Analysis Process* must be completed to determine what are the environmental consequences of the proposed replacement of utility lines with a utilidor in the Moose Lake area of housing. The completion of this EA is intended to satisfy these requirements. The proposed action, alternatives listed in Sections 1.4, as well as the no action alternative will be addressed in detail in Chapter 2.0 of this document. A description of the resources associated with the areas affected by all alternatives will be provided in Chapter 3.0 and the impacts that could result from each one are discussed in Chapter 4.0.

1.6.2 Based on the evaluation of impacts in the EA, a Finding Of No Significant Impact (FONSI) will be published if there is a finding of no significant environmental impacts for the proposed action. If it is determined that the proposed action will have significant environmental impacts, another alternative will be chosen for which impacts will not reach the threshold of significance.

1.6.3 The EA, a draft FONSI (if applicable), and all other appropriate planning documents will be provided to the Pacific Air Forces (PACAF) Vice Commander, the decision maker, for review and consideration. If, based on a review by the decision maker of all pertinent information, a FONSI is proposed, a notice of intent (NOI) will be published in accordance with 40 CFR 1506.6. All interested parties will have 30 days to comment on the decision to the Air Force. If, at the end of the 30-day public comment period, no substantive comments are received, the decision maker will sign the FONSI.

1.6.4 Two Executive Orders (EOs), 11988 and 11990, require the heads of federal agencies to find that there is no practicable alternative before the agency takes certain actions impacting wetlands or 100-year floodplains. To address this requirement, the Secretary of the Air Force's

designated agent, HQ PACAF/CV will sign a document that addresses the issues of wetlands and floodplains that may be associated with actions the Air Force proposes to take. This document, known as a Finding of No Practicable Alternative (FONPA), will state which alternative, the proposed action, one of the two action alternatives, or the no action alternative, will be selected as the appropriate course of action. The FONPA will be combined with the FONSI into one document. It will contain documentation that there are no practicable measures to minimize harm to wetlands and/or floodplains, and that all appropriate mitigation will be incorporated into the project design or otherwise authorized.

1.7 Project Scoping/Significant Issues

This section provides a summary of all issues raised during the scoping process and considered significant enough to be addressed in the EA. The scoping process typically involves meeting with potentially interested parties, including state and federal regulatory agencies that have oversight authority, and base groups that have responsibility for munitions handling. For this project scoping process, all potentially interested parties were contacted. However, no parties other than Eielson AFB groups chose to participate beyond providing comments to the U.S. Army Corps of Engineers on the 404 wetlands permit. The following issues were identified during the scoping process:

- 1) *Wetland resource impacts:* Although some wetlands will be impacted by the utilidor construction, only a small area (0.16 acres) of wetlands will be disturbed.
- 2) *Groundwater:* The proposed project, as well as, alternatives 1 and 2 would require excavation to a depth where groundwater will be an issue. It will likely result in the need to pump groundwater from the construction trench. Compliance with the general permit for dewatering will be necessary.
- 3) *Disturbance to portions of base housing and inconvenience to residents:* During construction, especially with alternative 2, significant disturbance to areas in base housing would occur. Methods to minimize this are considered a high priority.

1.8 Federal, State, and Local Permits Needed for Project Implementation. A U.S. Army Corps of Engineers 404 wetlands permit is needed for this project.

2.0 Description of the Proposed Action and Alternatives

Section 2.0 provides a description of alternatives considered that would achieve the purpose and need described in Section 1.0. The proposed action, two action alternatives, and the no action alternative are addressed.

2.1 Criteria Used to Develop Alternatives. As previously stated in Section 1.1, there are criteria that must be met for an action alternative to achieve the requirements of the stated project purpose. The following is a list of the required design and function criteria that were used to develop a proposed project and alternatives.

2.1.1 Provide a reliable utility system. Currently the utility system serving the Moose Lake Area housing is subject to leaks and interrupted service. This results in an unreliable system, as well as, frequent repairs and excessive utility costs for the area of housing served by these lines.

2.1.2 Minimize during construction the degree of disruption of access to housing by residents and utility services for housing affected. There will likely be some disruption of services, as well as, rerouting of resident access to Moose Lake housing. The proposed action and alternative 1 would have the least disruption and alternative 2 would likely have the most significant impact to residents.

2.2 Proposed Action – Replace the Existing Direct Buried Line with Concrete Encased Utilidor System

Construction of a new utilidor system for the French Creek Subdivision would begin in early summer of 2005 and involve several phases.

2.2.1 Excavate existing direct buried utility lines. The entire 2,250 feet of existing utility lines would be excavated and removed (see **Figure 2-1**). The excavation trench would have a configuration similar to the schematic shown in **Figure 2-2** in wetland areas and similar to **Figure 2-3** in upland areas. The trench would be about 9 feet deep and 22 feet in width at grade level. Any frost susceptible material that is excavated would be disposed of at an upland site. Useable material will be stockpiled outside of wetlands and reused as appropriate.

2.2.2 Construct a concrete utilidor and install utility lines. A concrete container for placement of utility lines would be constructed for the entire 1,800-foot section of utility lines. A steam heat line and a condensate line would then be placed in the utilidor and connected to existing utility lines. The utilidor would have a concrete lid laid on top of the utilidor vault that can be removed in the event the utility lines need to be accessed.

2.2.3 Backfill utilidor and landscape the project area. The concrete utilidor would be covered with non-frost susceptible material. The backfilled area would then be covered with 4 inches of topsoil and seeded.



Figure 2-1 – Aerial Photo of Project Area

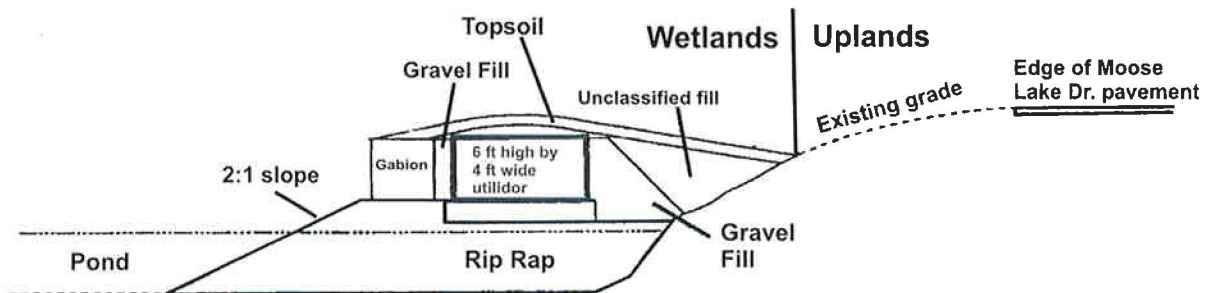


Figure 2-2 –Cross-section of Typical Utilidor Construction in Wetlands

2.3 Alternative 1 – Replace Damaged and Leaking Utility Lines with New Direct Buried Lines

This alternative would result in the excavation, removal, and replacement of portions of the existing utility lines that are damaged and leaking. This would be considered a short-term fix since the cause of line damage and resulting leaks is a high water table and differential ground movement from frost heaving in the winter. These circumstances would still exist and likely cause additional damage and leaks to the utility lines, even newly replaced ones.

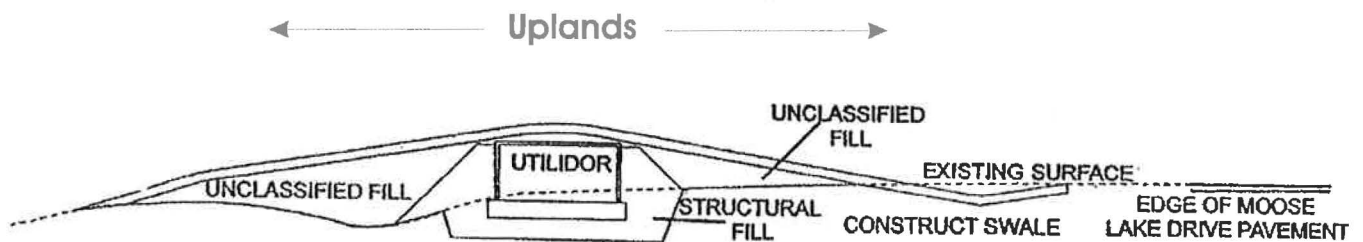


Figure 2-3 - Cross-section of Typical Utilidor Construction in Uplands

2.4 Alternative 2 - Use Existing Roadbeds for Placement of Utilidors to Avoid Wetland Areas

The existing direct buried utility lines run adjacent to Moose Lake Drive. Under this alternative the entire length of the lines would be run in existing roadbeds, thus avoiding impacts to wetlands. The installation would be similar to the proposed action with the lines being placed in a concrete utilidor. Under this alternative the manhole access points would be in the center of the road pavement. Installation of the system would require the closure of the affected roads for an extended period of time during the construction phase. Once installed, access to the utilidor to perform maintenance would require blocking a portion of the road.

2.5 No Action Alternative

The no action alternative would result in the continued use of the existing direct buried lines. This would likely require annual repairs of these lines, resulting in interrupted service to areas of housing, and increased heating costs.

3.0 Affected Environment

This section describes relevant resource components of the existing environment that might be impacted by the proposed project and its alternatives. Only environmental components relevant to the issues and objectives of this EA are described.

3.1 Physical Environment

Eielson AFB encompasses approximately 19,790 acres and is isolated from major urban areas. The portion of Eielson AFB that contains the project areas associated with the proposed action and alternative 2 lies on the abandoned floodplain of the Tanana River, with elevations ranging from 525 to 550 feet above Mean Sea Level (MSL). The surface of the floodplain is relatively smooth and slopes gently downward to the northwest at a gradient of about 6 feet per mile.

3.1.1 Geology

The area in the vicinity of Eielson AFB was not glaciated during the last ice age. The majority of the subsurface geologic formations of the central plateau of Alaska are primarily from the Permian and Devonian periods of the Paleozoic era. The hills to the northeast of the base are composed of Precambrian and Paleozoic-age schists, micaceous quartzites, and subordinate phyllite and marble. These formations have been locally intruded by a series of Cretaceous rock formations.

3.1.2 Soils

Soils in the Tanana River Valley consist of unconsolidated silty sands and gravels, organic and sandy silts, and clays. Floodplain soils nearest the active channels are sandy with a thin silt loam layer on the surface. On higher terraces, the soils become predominately silt from the Salchaket series. Along older river terraces, silt loam soils, which contain significant organic components, often dominate. These soils tend to be cold and wet and are generally underlain by permafrost. Approximately two-thirds of Eielson AFB is covered with soils containing discontinuous permafrost. This preponderance of permafrost soils contributes to the large percentage of vegetated wetlands occurring on undeveloped base lands.

3.1.3 Groundwater

3.1.3.1 Eielson AFB is located over a shallow unconfined aquifer. The aquifer is approximately 250 feet thick, extends to bedrock, and has a regional gradient of about 5 feet per mile flowing to the north-northwest. The water table varies from the surface in adjacent wetlands to 10 feet below ground level in developed areas. The base uses the local aquifer for its drinking water and monitors groundwater quality in a number of locations as part of its Installation Restoration Program. Localized contamination of the aquifer has been identified in the industrial area of the base, but the overall quality of groundwater at Eielson AFB is good.

3.1.3.2 Measurements of groundwater in the vicinity of the wetlands indicated that it would be likely that during construction, dewatering of the construction ditch would be necessary. A permit from the state is required for dewatering and it is likely that the pumped water discharge would be run into Moose Lake, a large man-made lake on the opposite side of Moose Lake Drive.

3.1.4 Surface Water

3.1.4.1 Aquatic bodies on Eielson AFB include streams, wetlands, and lakes. There are approximately 28 miles of streams; 10,133 acres of wetlands; 12 lakes (Lilly Lake is natural and the remaining 11 are man-made); 80 ponds (10 naturally-occurring and 70 man-made) totaling 560 acres; and 6,770 acres of floodplains on the main base. The man-made lakes and ponds were created during the excavation of gravel deposits for use as fill material for construction projects on base. Surface drainage on Eielson AFB is generally in a north-northwest direction and parallel to the Tanana River. Five streams flow through the base and discharge into the Tanana River via Piledriver Slough.

3.1.4.2 Approximately 51 percent, or 10,133 acres, of Eielson AFB is classified as wetlands, with 9,391 acres being vegetated wetlands and the remainder being lakes, ponds, and streams. Wetlands and low gradient alluvial streams comprise most of the surface water resources on Eielson AFB, with wetlands dominating the low-lying areas within and surrounding the installation. Most wetland areas were created as a result of surface waters becoming trapped in the thawed layer over the permanently frozen subsurface (permafrost). Flood periods tend to occur during spring snowmelt and during the middle to late summer, when heavy rains or warm air quickly brings glacier fed mountain streams to flood capacity. Several lakes and extensive wetlands surround the airfield in the cantonment area. Among these are Bear, Polaris, Moose, Hidden, Pike, Rainbow, Scout, Grayling, and Tar Kettle lakes. These are all man-made lakes resulting from gravel extraction for construction material. Two of these lakes, Moose Lake and an unnamed lake are in the immediate vicinity of the project.

3.1.4.3 Piledriver and Garrison sloughs are the two largest streams in the vicinity of the airfield. Piledriver Slough, which discharges into the Tanana River, is located along the western edge of Eielson AFB and approximately 4,000 feet west of the airfield and parallel to the runways. Approximately 12 miles of Piledriver Slough occurs on Eielson AFB. The slough receives no runoff from the urban developed area of the base and has good water quality.

3.1.5 Noise. Aircraft generate by far the most noise on Eielson AFB. Noise levels associated with aircraft during flying hours can exceed 80 decibels (dB) in the vicinity of the flightline; however, the decibel level drops off to a maximum of 70-dB in the closest residential area, Moose Creek, just north of the base. A 65-dB level is not recommended for housing areas by EPA standards (Noise Effects Handbook, US EPA, 1981). Construction noise is potentially another source of noise, but it is not considered to be a concern due to its temporary nature and relatively low dB level. **Figure 3-1** is a chart that provides a scale of noise levels associated with typical daily activities.

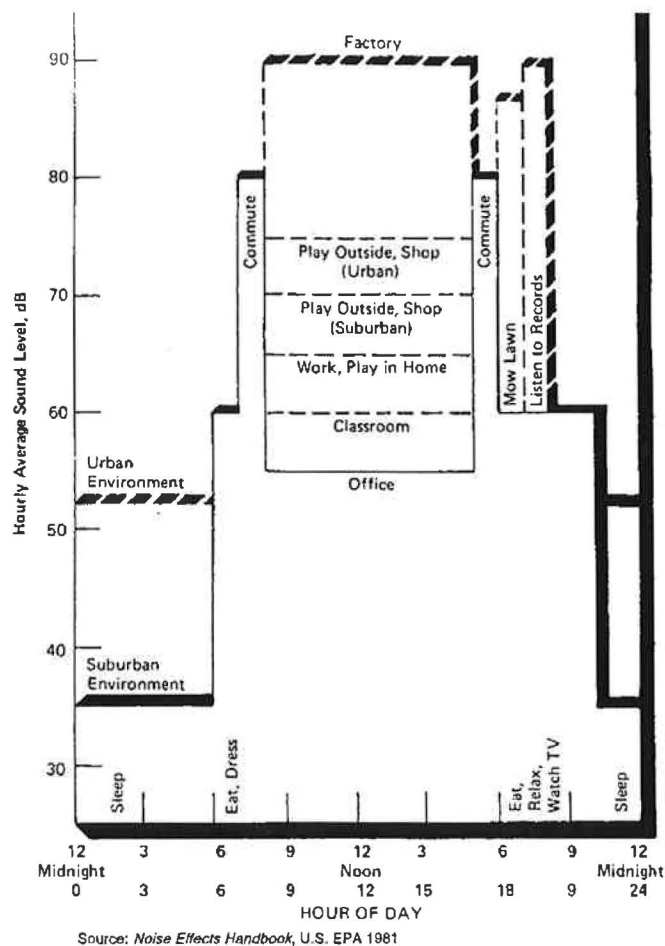


Figure 3-1 - Noise Levels

3.1.6 Air Quality

Air quality is generally good at Eielson AFB. Although portions of the North Star Borough, of which Eielson AFB is also a part, are in non-attainment for carbon monoxide (Fairbanks and North Pole), Eielson AFB is far enough south to not be included or affected. The Clean Air Act designates areas as *attainment*, *non-attainment*, *maintenance*, or *unclassified* with respect to their compliance with National Ambient Air Quality Standards (NAAQS). Non-attainment and maintenance areas are locales that have recently violated one or more of the NAAQS and must satisfy the requirements of State or Federal Implementation Plans (SIPs or FIPs) to bring them back into conformity with the applicable air quality standards. Eielson AFB is located in an *unclassified* area, and therefore activities that generate emissions do not need to satisfy the requirements of the EPA ruling *Determining Conformity of General Federal Actions to the State or Federal Implementation Plans*.

3.1.7 Cultural Resources

In 1994, Eielson AFB contracted for the preparation of a predictive model for the discovery of prehistoric cultural resources on base lands. The predictive model was then used to conduct an evaluation of cultural resources on Eielson AFB as required by Section 110 of the National Historic Preservation Act. The areas associated with the proposed action and alternatives 1 and 2 have been determined to not contain cultural or archeological resources. In the event that during project excavation/construction any cultural resources were encountered, activities would cease until the resources were evaluated by a qualified archeologist.

3.2 Biological Resources

3.2.1 Vegetation

3.2.1.1 The vegetation of the Tanana River Valley in the vicinity of Eielson AFB is typical of boreal forest or taiga habitats. The boreal forests of Eielson AFB are predominantly evergreen forests dominated by black spruce and white spruce (*Picea glauca*), but also include extensive stands of deciduous forests containing paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*), and balsam poplar (*P. balsamifera*). Extensive areas of shrub and herbaceous vegetation are found in wetlands, lowland areas, and the active floodplain, and are dominated by willows and other shrubs, sedges, and grasses. Bog areas are dominated by black spruce stands intermixed with peat moss (*Sphagnum* spp.) and cottongrass (*Eriophorum vaginatum*).

3.2.1.2 Vegetation in portions of the project area has been previously impacted as a result of the original installation of the direct buried utility lines. Native vegetation species such as black spruce and scrub/shrub alder has been replaced by grassland species.

3.2.2 Aquatic/Fishery Resources

3.2.2.1 Lakes and streams on Eielson AFB contain both native fish and fish stocked by the Alaska Department of Fish and Game. Native fish found in the Tanana River drainage include chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), silver salmon (*Oncorhynchus kisutch*), burbot (*Lota lota*), arctic grayling (*Thymallus arcticus*), northern pike (*Esox lucius*), chub (*Semotilus* spp.), several species of whitefish (*Coregonus* spp.), sheefish (*Stenodus leucichthys nelma*), rainbow trout (*Oncorhynchus mykiss*), and arctic char (*Salvelinus alpinus*).

3.2.2.2 The Alaska Department of Fish and Game stocks five lakes and one stream on Eielson AFB: Grayling Lake, Hidden Lake, Polaris Lake, 28 Mile Pit, Moose Lake, and Piledriver Slough. Fish stocked by the Alaska Department of Fish and Game includes rainbow trout, arctic grayling, arctic char, silver salmon, chinook salmon, chum salmon, and northern pike. There are no known federally listed threatened or endangered fish species, fish species proposed for listing, or critical fish habitats on Eielson AFB.

3.2.2.3 The closest fish bearing water body to the project area is Moose Lake which is on the opposite side of Moose Lake Drive from the project.

3.2.3 Wildlife Resources

3.2.3.1 The surrounding Tanana Valley provides breeding habitat for a wide variety of migratory bird species. Bird species found on Eielson AFB include spruce grouse (*Dendragapus canadensis*), ruffed grouse (*Bonasa umbellus*), northern goshawk (*Accipiter gentilis*), sharp-shinned hawk (*A. striatus*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). During winter, willow ptarmigan (*Lagopus lagopus*) and rock ptarmigan (*L. mutus*) are common on Eielson AFB. Over 20 species of waterfowl, including geese, ducks, loons, grebes, and scoters use aquatic habitats on the installation.

3.2.3.2 There are 32 species of mammals found on Eielson AFB. Common species include moose (*Alces alces*), black bear (*Ursus americanus*), grizzly bear (*U. arctos*), snowshoe hare (*Lepus americanus*), marten (*Martes americana*), red squirrel (*Tamiasciurus hudsonicus*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), mink (*Mustela vison*), meadow vole (*Microtus pennsylvanicus*), red-back vole (*Clethrionomys rutilus*), and meadow jumping mice (*Zapus hudsonius*).

3.2.4 Habitat Value

This section provides a summary of the existing habitat quality and function for each of the areas associated with the proposed project and alternatives 1 and 2.

3.2.4.1 *Proposed Project:* A portion of the proposed project would be sited adjacent to a small man-made pond along Moose Lake Drive. It is considered wetlands even though it was created by excavating the area to obtain gravel for nearby road construction. The pond has developed mature vegetation along its shoreline providing some riparian habitat. Its use by wildlife is likely restricted to birds and small mammals. A small portion of the lake, approximately 0.16 acres, will be filled as part of the utilidor construction.

3.2.4.2 *Alternative 1:* Habitat value of land associated with this alternative is similar to the proposed action and includes a small amount of wetlands and some previously impacted areas that are now covered with grass.

3.2.4.2 *Alternative 2:* Under this alternative, the utility line would be installed in the existing roadbed where wetlands are adjacent to the road. There is no habitat value associated with this situation since it is a paved road.



Figure 3-2 – Roadbed that would be used under Alternative 2

3.2.5 Threatened and Endangered Species

No threatened or endangered species, as designated by the U.S. Fish and Wildlife Service, typically occur in any of the project areas included in the two action alternatives. This was the conclusion of an Eielson AFB contract study entitled *Biological Survey, Final Report 1994*, that addressed the potential for the presence of endangered species on base lands. Recent observations continue to support this likelihood.

4.0 Environmental Consequences

This section discusses the probable impacts for each alternative described in Section 2.0. This section is organized according to resources and a discussion of each alternative action is provided relative to resources identified as relevant in Section 3.

4.1 Physical Environment

4.1.1 Geology/Soils

4.1.1.1 Proposed Action: Implementation of the proposed action would have some localized impacts to geology and soils. Although most of the area where the new utilidor would be constructed has been previously disturbed when the first line was buried, some additional disturbance would occur because the width of the trench will be greater than the trench dug when the direct buried lines were installed. The excavation of the trench and its backfill with non-frost susceptible material will alter the existing soil profiles that occur in the area. Also, where the new construction would encroach into the man-made pond along Moose Creek Drive, gravel fill would be placed to establish the base for construction of the utilidor.

4.1.1.2 Alternative 1: Impacts to the soils and geology that would result from the replacement of the direct buried lines from this alternative would be similar to those described for the proposed action.

4.1.1.3 Alternative 2: The geology and soils of the area would also be altered in a way similar to the proposed action if the utility lines were installed in roadbeds in the housing area.

4.1.1.4 No Action Alternative: Impacts to the soils and geology would result if the no action alternative were implemented due to the need to repair and maintain the existing lines. This work would likely require the excavation and reburial of sections needing repair, also resulting in removal of frost susceptible soils and replacement with gravels.

4.1.2 Groundwater

4.1.2.1 Proposed Action: Excavation of the trench for utilidor construction would likely result in digging to groundwater level which can be as shallow as 6 feet in the vicinity of the project. In the event groundwater is encountered, dewatering would occur under the provisions of a state of Alaska permit for dewatering. Discharge from the dewatering process would be drained into an area designated as acceptable for receiving pumped water, such as Moose Lake, a nearby water body. There would be no anticipated groundwater impacts from having to dewater the project area.

4.1.2.2 Alternative 1, Alternative 2, and the No Action Alternative: Impacts to groundwater from these alternatives would be similar to those described for the proposed project since all alternatives would potentially require some excavation down to ground water levels.

4.1.3 Surface Water

4.1.3.1 *Proposed Action:* The proposed action will encroach on a small man-made pond along Moose Creek Drive. As described in Section 3.2.4, the lake is a small water body that developed into a wetland system after the area had been excavated for gravel to construct roads in the area. A small area (0.16 acres) will be encroached upon as a result of the project. The impacts to this wetland will mainly be from riparian vegetation clearing for the purpose of preparing the site for excavation. The pond is approximately 3.5 acres in size and only 0.16 acres of its surface area will be affected (approximately 4 percent).

4.1.3.2 *Alternative 1, Alternative 2, and the No Action Alternative:* No surface water resources would likely be impacted with these alternatives.

4.1.4 Noise

4.1.4.1 *Proposed Action:* Noise impacts associated with implementation of this action would be short-term and relatively low decibel compared to ambient noise levels that occur with flightline aircraft operations. Noise would be associated with construction machinery, and would last only for a few weeks during the construction of the pad.

4.1.4.2 *Alternative 1, Alternative 2, and the No Action Alternative:* Noise impacts resulting from these alternatives would be similar to those described for the proposed action.

4.1.5 Air Quality

4.1.5.1 *Proposed Action:* Some minor, short-term impacts to air quality from emissions associated with the operation of construction machinery would result from the proposed action.

4.1.5.2 *Alternative 1, Alternative 2, and the No Action Alternative:* Impacts from these alternatives would be similar to those described for the proposed action.

4.1.6 Cultural Resources

No impacts to cultural resources would result from any identified alternatives. In the event that during construction of the facility, cultural resources were discovered, all activities would cease until a cultural resource specialist evaluated the find.

4.2 Biological Resources

4.2.1 Vegetation

4.2.1.1 *Proposed Action*: Some of the area that would be impacted by the proposed action has been cleared of natural vegetation when the original direct buried utility lines were installed in 1993. These areas are currently vegetated with a grass cover that is mowed during the growing season. Other areas, especially along the man-made pond, vegetation in the form of trees and shrubs has been established and provides riparian habitat for the pond. Approximately 0.1 acres of this vegetation would be removed as part of the utilidor installation.

4.2.1.2 *Alternative 1*: This alternative would require similar, although not as extensive, excavation activities as the proposed action resulting in a loss of vegetation in the same areas as described for the proposed action.

Alternative 2, and the No Action Alternative: Impacts to vegetation would likely result, but to a lesser extent, from these alternatives.

4.2.2 Fishery Resources

Despite the fact that a small portion of the proposed project is sited in wetlands, no impacts to fishery resources would result from its construction. The nearest fish bearing water body is Moose Lake which is on the other side of Moose Lake Road from the project site. None of the other alternatives would result in impacts to fishery resources if implemented.

4.2.3 Wildlife Resources

4.2.3 *Proposed Action, Alternative 1, Alternative 2, and the No Action Alternative*: All actions considered in this environmental assessment would have only very minor impacts to wildlife resources. The areas that would be affected by all alternatives have relatively minimal wildlife value and the actions associated with the various proposals would cause displacement and/or avoidance by species that currently use the area.

4.2.4 Threatened and Endangered Species

No impacts to threatened and endangered species will result from any of the alternatives considered in this EA.

4.3 Cumulative Impacts

4.3.1 The National Environmental Policy Act (NEPA) process requires that the issue of cumulative impacts be addressed in an environmental assessment. The Council on Environmental Quality (CEQ) has stated in their NEPA regulations (1508.7) that: "*Cumulative impact is the impact on the environment which results from the incremental impact of the action*

when added to past, present, and reasonably foreseeable future actions. . .” and “. . .can result from individually minor, but collectively significant actions taking place over a period of time.” Eielson AFB has, over the years, been very cognizant of the issue of cumulative impacts to wetlands. This is due to the fact that the base was, to a large extent, built by filling wetlands, and that expansion of Eielson AFB facilities beyond the original footprint of the base often requires the use of additional wetlands. Of the 19,789 acres that constitute Eielson AFB lands, 51 percent are designated wetlands.

4.3.2 To address the potential for cumulative impacts to wetlands, Eielson AFB has developed an active program of wetland habitat creation and enhancement. Classification of Eielson AFB wetlands according to type and quality (as defined in Cowardin, et al, U.S. Fish and Wildlife Service, 1979) has indicated that 93 percent of Eielson AFB wetlands are of low-quality. Most of these wetlands are classified as black spruce or alder/willow, scrub/shrub wetlands and constitute large, homogenous blocks of land that provide minimal wetland values to wildlife. When Eielson AFB develops a gravel source by excavating alluvial gravel deposits, it is in these black spruce wetlands. As part of the extraction process, wetlands of higher value are created (lake habitat with shallow littoral zones and emergent vegetation) from lower value black spruce and uplands. The type and quality of wetlands are particularly valuable for feeding, nesting, and brood-rearing by waterfowl, the bird species potentially most affected by the proposed project. The wetland creation/enhancement program on Eielson AFB has been going on for several years and has the full and enthusiastic support of local, state, and federal resource agencies. In addition, resource agencies have viewed this voluntary wetlands enhancement program as more than adequate to compensate for losses that occur as part of Eielson AFB construction projects.

4.3.3 The proposed project will result in the loss of 0.16 acres of wetlands. These wetlands are man-made lake habitat that has developed from gravel excavation below ground water depths. There are many such lakes/ponds on base similar to this and the small loss (0.16 acres) of this type of habitat will not result in cumulatively significant impacts. In addition, as a result of wetland enhancement projects described above, more than 150 acres of higher value habitat will be developed at Mullins Pit and Cathers Lake, more than compensating for wetland losses incurred by base development projects. It is felt that Eielson AFB's comprehensive wetland management program more than offsets wetland losses and that there is a cumulative net gain in wetland values on base lands.

4.4 Unavoidable Adverse Impacts

No noticeable unavoidable adverse impacts would result from implementation of the proposed action. Once the project is complete and the utilidor right-of-way is restored riparian vegetation similar to that which exists now will be naturally reestablished.

4.5 Relationship of Short-Term Uses and Long-Term Productivity

Short-term uses are those that generally occur on a year-to-year or short-term basis. The short-term use of these areas is as a utilidor right-of-way for housing which is critical to their use for

base residents. The proposed action would result in relatively minor short-term losses. The installation of the utilidor and new utility lines would result in short-term losses associated with the excavation, refilling, and recontouring of the areas encompassed by the existing utility right-of-way. Long-term productivity losses would be very minimal.

4.6 Irreversible and Irretrievable Commitments of Resources

None of the actions addressed in this EA would likely result in irreversible or irretrievable commitments of resources.

4.7 Environmental Justice

4.7.1 President Clinton issued Executive Order (EO) 12898, *Environmental Justice in Minority Populations and Low-Income Populations*, on February 11, 1994. Objectives of the EO, as it pertains to the NEPA process, requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. To accomplish these requirements the Air Force must conduct an environmental justice analysis of all potential impacts that may result from the proposed actions.

4.7.2 The environmental justice analysis must first identify all adverse impacts associated with the project. The next phase is to delineate the potential area of impact for the resources affected. If, within this area of impact, population demographics are such that a disproportionate effect on minority or low-income populations may occur, it should be so identified. These impacts should be documented and mitigation should be developed that can be implemented by the Air Force.

4.7.3 The site for the proposed project is immediately adjacent to a section of base housing. Base housing does not exhibit any particular demographics except related to military rank. In the case of this project, the housing that is closest to the project area is enlisted personnel housing. Based on the environmental impacts identified in this EA and on a corresponding environmental justice analysis, it is felt that no disproportionate impact to minority or low-income populations would occur from implementation of this project.

4.8 Mitigation

No mitigation is proposed or required as a result of federal and state permits obtained for this project. The only special conditions listed on the issued wetlands permit reflect best management practices that are already incorporated in the proposed design of the project.

5.0 List of Persons and Agencies Consulted

Mr. Brent Koenen, USAF, 354 CES/CEVN, Eielson AFB, ph: 377-5182

Mr. Forrest McDaniel, US Army Corps of Engineers, Regulatory Functions Branch, Fairbanks, AK, ph: 474-2166

Larry Bright, US Fish and Wildlife Service, Fairbanks, AK, ph: 456-0322

6.0 Glossary

Alluvial - Sediment deposited by flowing water.

Carbon Monoxide - A colorless, odorless gas resulting from the incomplete oxidation of carbon; found, for example, in automobile exhaust or mining operations; poisonous to animals.

Cantonment - The main operational area of a military base.

Culvert - A drain crossing under a road or an embankment.

Environmental Impact Analysis Process (EIAP) - is a set of guidelines (Air Force Instruction 32-7061) that the Air Force uses to comply with the NEPA process.

Decibel - A unit of measurement for describing sound intensity.

Executive Order 11990 - Mandate to federal agencies to follow the NEPA process to ensure the protection of wetlands.

Habitat - The area or environment in which an organism or ecological community normally occurs.

Hydro-axed - A large axing machine driven by hydraulics that cuts down and mulches shrubs and trees.

Mean Sea Level (MSL) - The average surface level for all stages of the tide over a 19-year period, usually determined from hourly height readings from a fixed reference point.

National Environmental Policy Act (NEPA) - Legislation enacted in 1969 mandating that all federal agencies assess the environmental impacts of actions which may have an impact on man's environment.

National Historic Preservation Act - Federal mandate that requires the preservation of prehistoric and historic sites.

Non-Attainment Area - An area exceeding National Ambient Air Quality Standards for one or more criteria pollutants.

Permafrost - Permanently frozen subsoil occurring in perennially frigid areas.

Riparian - Living or located on a riverbank or a natural course of water.

SAFO 780-1 - Secretary of the Air Force Order and reference number.

Seasonally Persistent - Persistence is based on historical records and field evidence that indicates an area is seasonally inundated with water during non-frozen (spring/summer) portions of the year.

Turbidity - Cloudy or hazy appearance in a naturally clear liquid caused by a suspension of colloidal liquid droplets or fine solids.

Understory - A foliage layer occurring beneath and shaded by the main canopy of a forest.

Upland - An area of land of higher elevation, often used as the opposite of a wetland.

Wetlands - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

404 Wetland - Wetland areas that have been determined “waters of the United States” and thus subject to Section 404 wetland permitting guidelines administered by the Army Corps of Engineers and the US Environmental Protection Agency.

Wetland Functional Value - A methodology that identifies the type, quantity, and quality of an ecosystem, and uses or potential uses of wetlands in the vicinity of a proposed project.

100-Year Floodplain - Based on historical evidence, there is a high probability that the area within the 100-year floodplain will be flooded once every 100 years.

7.0 Project Wetlands Permit



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
3437 AIRPORT WAY
SUITE 206 WASHINGTON PLAZA
FAIRBANKS, ALASKA 99709-4777

November 3, 2004

Regulatory Branch
North Section
POA-1990-727-S

Lieutenant Colonel David Martinson
Base Civil Engineer
2310 Central Avenue, Suite 100
Eielson AFB, Alaska 99702

Dear Lt. Col. Martinson:

Enclosed is the signed Department of the Army permit modification, file number POA-1990-727-S, French Creek, authorizing the discharge of approximately 1,473 cubic yards of fill material into 0.16 acres of wetlands for the purpose of installing a utilidor to serve the Moose Lake housing units. The project is in section 1, T. 3 S., R. 3 E., Fairbanks Meridian, latitude 64.679° N, longitude 147.067° W, at Eielson AFB, Alaska. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

If changes in the plans or location of the work are necessary for any reason, plans should be submitted to this office promptly. Federal law requires approval before construction is begun; if the changes are unobjectionable, approval will be issued without delay.

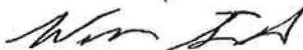
Nothing in this letter shall be construed as excusing you from compliance with other Federal, State, or local statutes, ordinances, or regulations that may affect the proposed work.

Additionally, we have enclosed a Notification of Administrative Appeals Options and Process and Request for Appeal form regarding this Department of the Army Permit Modification (see section labeled "Initial Proffered Permit").

Please take a moment to complete and return the enclosed questionnaire. Our interest is to see how we can continue to improve our service to you, our customer, and how best to achieve these improvements. Upon your request, you may also provide additional comments by telephone or a meeting. We appreciate your efforts and interest in evaluating the regulatory program.

Please contact me at (907) 474 2166, by FAX at (907) 474-2164, or by mail at the address above, if you have questions. For additional information about our Regulatory Program, visit our web site at www.poa.usace.army.mil/reg.

Sincerely,



William Strickland
Regulatory Specialist

Enclosures



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
3437 AIRPORT WAY
SUITE 206 WASHINGTON PLAZA
FAIRBANKS, ALASKA 99709-4777

Regulatory Branch (1145b)
North Section

PERMITTEE: United States Air Force, Eielson Air Force Base, Alaska

EFFECTIVE DATE: November 2, 2004

REFERENCE NUMBER: POA-1990-727-S, French Creek

DEPARTMENT OF THE ARMY
PERMIT MODIFICATION

Department of the Army permit number 4-1990-0727, French Creek 3, was issued to the United States Air Force, Eielson Air Force Base, Alaska on June 27, 1991, to: discharge approximately 793,000 cubic yards of dredged gravel fill and 145,000 cubic yards of overburden into 103 acres of wetlands to construct an 801 housing project.

Time extensions were authorized (M-1990-0727) and (P-1990-0727) extending the time period to complete authorized work to June 30, 1996, and July 31, 2000 respectively.

The permit was transferred to Ben Lomond Incorporated, on September 23, 1991, and transferred back to the United States Air Force on February 11, 1997.

On April 18, 1994, the permit was modified (N-1990-0727) to authorize the discharge of an additional 2,635 cubic yards of fill material into 0.23 acres of wetlands to construct a flood control dike to protect the housing area from French Creek overflow.

On October 24, 1994, the permit was modified (O-1990-0727) to authorize the discharge of an additional 9,380 cubic yards of fill material into approximately 0.27 acres of wetlands, to construct a utilidor for the housing project.

On February 20, 2003, the permit was modified (Q-1990-0727) to authorize the discharge of an additional 3,508 cubic yards of fill material and approximately 741 cubic yards of concrete into approximately 2.3 acres of waters of the United States, including wetlands, to upgrade the French Creek subdivision segment of the French Creek Subdivision utilidor.

On December 5, 2003 the permit was modified (R-1990-727) to authorize the discharge of additional fill material into approximately 1.32 acres of wetlands, to install piping and a retention tank for the purpose of diverting groundwater from base housing and to eliminate groundwater infiltration into the Moose Lake housing units.

The permit is hereby modified as follows:

Discharge approximately 1,473 cubic yards of fill material into 0.16 acres of wetlands for the purpose of installing a utilidor to serve the Moose Lake housing units.

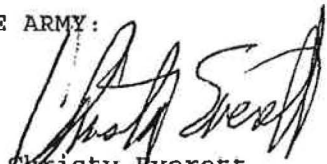
All work will be performed in accordance with the attached plans, 12 sheets [1-12], dated October 12, 2004.

All other conditions under which the subject authorization was made remain in full force and effect.

If the activity authorized herein is not completed within three years of the date of this letter, the authorization of this permit modification, if not previously revoked or specifically extended, shall automatically expire.

This authorization and the enclosed modified plans should be attached to the original permit. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:



Christy Everett
Field Office Manager

Enclosures

8.0 Public Notice

This public notice appeared in the Fairbanks Daily News Miner on March 13, 2005.

**USAF ANNOUNCES
an
ENVIRONMENTAL ASSESSMENT**

In accordance with the National Environmental Policy Act (NEPA), and Air Force Regulations, Eielson Air Force Base has completed an environmental assessment (EA) and Finding of No Significant Impact (FONSI) to evaluate the consequences of the following stated proposed action:

Construct a new utilidor system for the Moose Lake area of housing on Eielson AFB. The project would require the excavation of 2150 feet of existing direct buried utility lines and replacement with a concrete utilidor system. The project will result in impacts to approximately 0.16 acres of riparian scrub/shrub wetlands.

PUBLIC COMMENT WELCOME

To review the draft EA and FONSI, copies are available at the Noel Wien Library in Fairbanks. The public is invited to review these documents and make comments during the 30-day comment period from now until April 31, 2003. To get a copy of the EA, to comment, or for more information contact Capt. Bradley Jessmer, 354 FW/Public Affairs, at (907) 377-2116, 3112 Broadway Ave., Unit 15A, Eielson AFB, AK 99702-1830.