Environmental Assessment

for the

Expansion of the Yukon Measurement And Debriefing System in the Fox and Yukon MOAs

354th Fighter Wing
Eielson AFB, Alaska
May 2006

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Finding Of No Significant Impact (FONSI)
for the
Environmental Assessment (EA) to Expand Yukon Measurement and Debriefing System Coverage In the Fox and Yukon Military Operating Areas, Alaska

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Introduction

The host unit at Eielson Air Force Base (Eielson), the 354th Fighter Wing (FW), operates F-16 Fighting Falcon and A/OA-10 Thunderbolt aircraft. The 354 FW's mission is to train and equip personnel for close air support of ground troops in an arctic environment. The complex combat scenario training requirements and advanced capabilities of the aircraft require large expanses of airspace to train and sophisticated range facilities to support the training. To keep up with these changes Eielson is proposing to expand its electronic warfare tracking systems.

Proposed Action

The proposed action would result in the extension of tracking coverage in both the Yukon and Fox Military Operating Airspaces (MOAs). This would be accomplished by installing Tracking and Instrumentation Subsystems (TIS) at seven new locations, four in the Yukon MOA and three in the Fox MOA. These subsystems are comprised of an instrument shelter, antenna tower, and propane fuel tanks, as well as an area on which a helicopter can land. Installing these new sites would increase the real-time tracking within Alaska to 20,000 square miles, significantly improving the effectiveness of the training.

Alternatives to the Proposed Action

In 1993 an environmental assessment was prepared to address the construction of 24 TIS sites in portions of the Alaska MOAs. The EA discussed alternatives and reached the conclusion that no feasible alternative to the proposed action existed. A FONSI was written for the original EA. The current EA has reached the same conclusion and, therefore, only the proposed action and the no action alternative were considered in this analysis.

No Action Alternative

Under the no action alternative, existing long-range radar and ground-to-air coverage would not be expanded and no new radar equipment would be installed. This would result in no improvements to air traffic coverage in the MOAs that are currently deficient in coverage.

Environmental Impacts of the Proposed Action

Biological Resources

Some minor impacts to vegetation and disturbance to soils will occur with activities associated with the proposed action. All construction at the sites will be by hand tools.

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

Although the new sites have not been surveyed, they are not thought to have a high likelihood of cultural resources. A field survey of those areas that would have a likelihood of historic and cultural resources will be surveyed prior to any construction at the site. If at that time cultural resources are identified, the findings will be coordinated with the State Historic Preservation Office and all measures deemed appropriate to protect these resources will be taken.

Air Quality

The proposed action will not result in impacts to air quality. The facilities are powered by a propane generator and a solar system.

Mitigation

All mitigation required by state and federal agencies for the proposed work has been incorporated into the facility design or operational requirements for the project.

Public Comment

No public comment was received from the public noticing of the Draft EA/FONSI.

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 32-7061 *Environmental Impact Analysis Process* (32 CFR Part 989), the Air Force has conducted an EA for the construction of seven new TIS facilities in the Yukon and Fox MOAs in Alaska. This FONSI has been developed pursuant to information provided in the accompanying EA.

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 seven new TIS facilities will not result in significant impacts to the environment. I also find that the preparation of an environmental impact statement is not warranted.

JAMES C. HORTON
Colonel, USAF
Vice Commander

19 Jul 2006
Date

Table of Contents

Environmental Assessment for the Expansion of the Yukon Measurement and Debriefing System (YMDS) in the Fox and Yukon Military Operating Airspaces (MOAs)

1.0 Purpose and Need For the Action

Section 1.0 provides a description of the purpose and need for the action.

1.1 Purpose of the Proposed Action

1.1.1 Eielson Air Force Base (Eielson) is proposing to extend the tracking coverage in both the Yukon and Fox MOAs. This would be accomplished by installing Tracking and Instrumentation Subsystems (TIS) at seven new locations; four in the Yukon MOA and three in the Fox MOA. Installing these new sites would increase real-time tracking within Alaska to 20,000 square miles, significantly improving the effectiveness of the training.

1.1.2 In the mid 1990s, the Pacific Air Forces (PACAF) installed an Air Combat Maneuvering Instrumentation system (ACMI) for Eielson. This is known as the YMDS and has provided Eielson with a real-time monitoring and control system for use in the training of aircrews in tactics and techniques. The YMDS was built to operate in portions of the Pacific Alaska Range Complex airspace, which is the largest instrumented air combat training range in the United States.

1.1.3 The YMDS system originally installed in the 1990's included 24 unmanned master and remote tracking stations that were constructed on land encompassed by the MOAs. These included the Yukon 1 MOA, the southern portion of the Yukon 2 MOA, Yukon 1A Temporary MOA, R-2202, R-2205, and R-2211. The sites were selected for their geographic distribution and line-of-sight radio communication capability (see Figure 1). Land ownership included federal (Army and Bureau of Land Management) and state (Department of Natural Resources). Land use permits were obtained from the various land owners.

1.1.4 Eielson's range facilities are considered the best in the Air Force and provide critical training opportunities for Air Force fighter crews. In addition to the routine training missions that the 354th Fighter Wing performs, there are four RED FLAG-Alaska Joint Training Exercises (JTX) held annually that are approximately 10 days in duration and provide scenarios designed to replicate real world combat conditions. The core of each RED FLAG-Alaska exercise is comprised of PACAF fighter units, with Air Combat Command, other US services, and friendly nations providing aircraft and crews on a space-available basis.

1.2 Need for the Proposed Action

1.2.1 The originally constructed YMDS system was built to provide specific functions for the US Air Force in Alaska. Those included:

- enhanced ability to conduct and evaluate JTXs and Large Force Exercises in realistic simulated combat conditions;
- allow routine daily flying training to be conducted under realistic conditions;
- provide the capability to monitor flight activities, reconstruct flight missions, and debrief aircrews;
- provide the ability to precisely evaluate single and multi-aircraft operations, including surface-to-air, air-to-air, and air-to-surface live and simulated ordnance exchanges, using computer simulation with real-time exercise scoring and information feedback;
- permit operational testing and evaluation of equipment in a realistic combat environment;
- allow for update of equipment to keep pace with performance of automated airborne equipment; and
- provide the radar surveillance necessary for range and mission control, as well as operational safety.

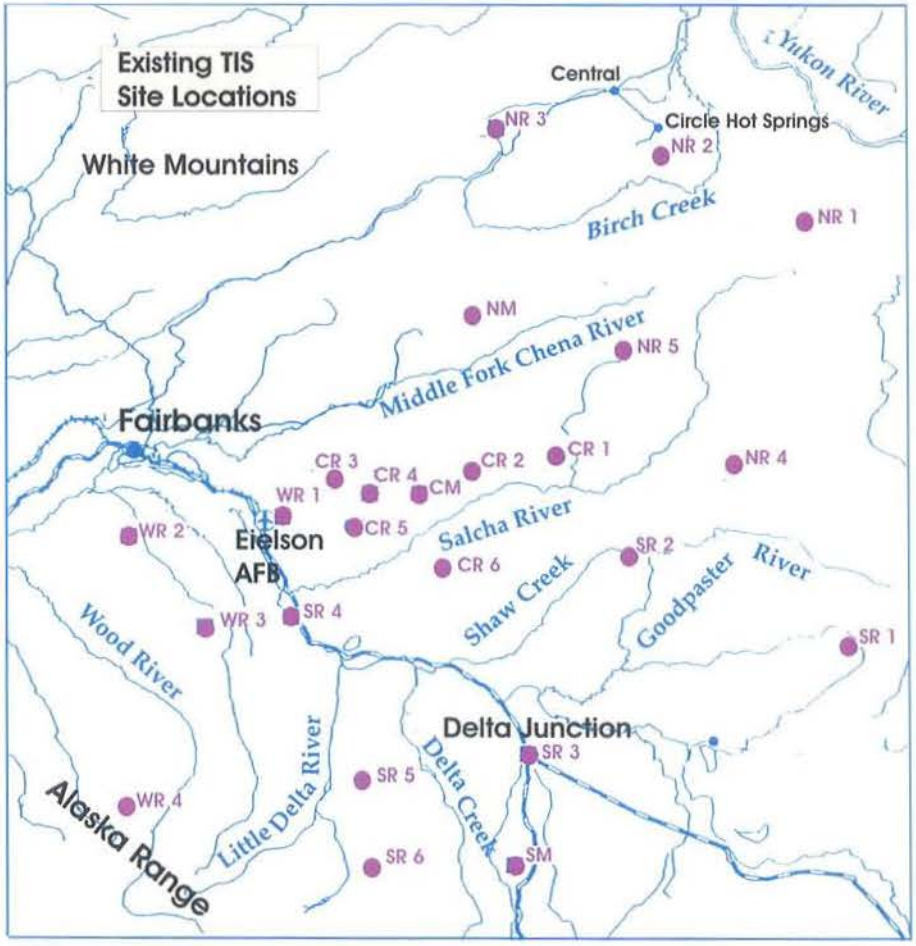

Figure 1 – Existing YMDS Facilities

1.2.2 Airspace training needs are continually reevaluated based on aircraft, weapons, and mission changes. As a result, YMDS range systems have been improved since they were first installed, most recently by integrating global positioning system capabilities into the system.

1.2.3 In 2003, the Yukon Range Coverage Extension Study was conducted to address the need for extending the tracking coverage of the YMDS. The study concluded that it would be beneficial to extend the tracking coverage in both the Yukon and Fox MOAs. This would be accomplished by installing TIS at seven new locations; four in the Yukon MOA and three in the Fox MOA. These subsystems are comprised of an instrument shelter, antennae tower, and propane fuel tanks, as well as an area on which a helicopter can land. Installing these new sites would increase the real-time tracking within Alaska to 20,000 square miles, significantly improving the effectiveness of the training. The total number of TIS sites would not be increased by the proposed action. The currently proposed sites replace seven other sites that have been, or will be as part of this action, closed and removed.

1.3 Location of the Proposed Action

The existing YMDS facilities are located in the eastern portion of the central interior of Alaska. The proposed expansion of this system would occur in the northeast and southwest portions of this area. This expansion would increase airspace coverage north and east to the Alaska/Canadian border and south and west into the Alaska Range (Figure 1-2).

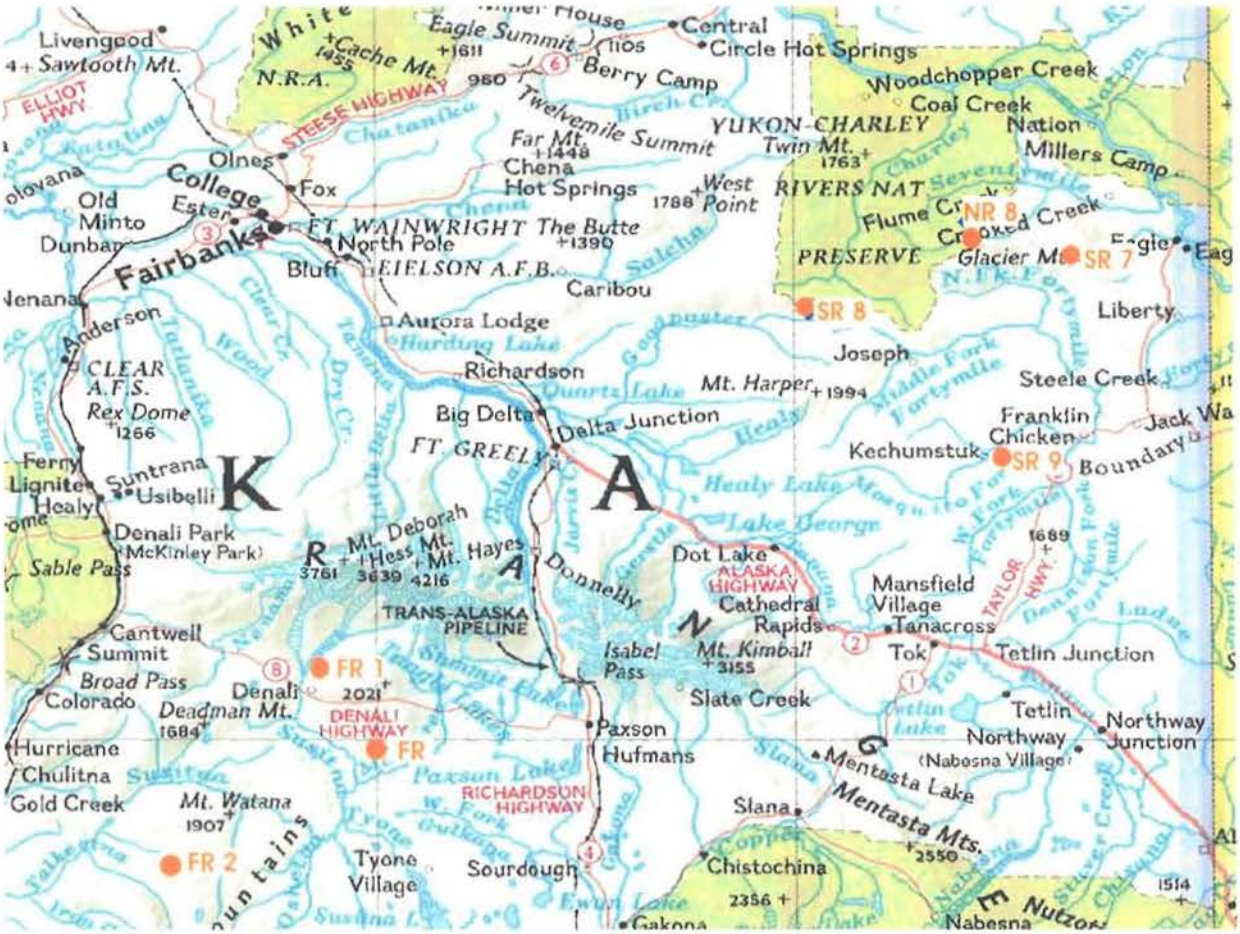

Figure 1-2 – New Proposed TIS Locations

1.4 Scope and Organization of the Environmental Assessment

1.4.1 This EA analyzes the impacts of the proposed action and alternatives on the physical, natural, and human environments of the affected areas. The affected area will be considered to be the seven sites proposed for construction under the proposed action as well as the no action alternative. This EA will also rely on the EA previously written to address the construction of the original YMDS facilities, *Yukon Measurement and Debriefing System Environmental Assessment (YMDS EA), 1993*. Portions of this EA will be incorporated by reference whenever similar topics are discussed. This conforms with accepted National Environmental Policy Act (NEPA) procedures provided for in 1502.21 of the Act's implementing regulations, 40 CFR Parts 1500-1508 (1992).

1.4.2 The original *YMDS EA* addressed the impacts associated with construction of facilities at 24 locations throughout interior Alaska. As part of this EA an alternatives analysis was completed and the following alternatives to the proposed action were considered (*YMDS EA,* Page 2-7, Section 2.5):

- *Alternate Location/Target Type* – The Yukon ACMI system could be moved to the Oklahoma Range (Donnelly Training Area). This would have required a permanent bridge across the Delta River and a road to facilitate access to the impact area in the Oklahoma Range. This alternative would not have allowed the full system to be installed due to the lack of airspace available in the Donnelly Training Area.
- *Do not install the YMDS, but use an existing ACMI in the Stony MOA* – Using the ACMI in the Stony MOA would have necessitated land acquisition and construction of a new air-to-ground training range. Lack of roads or other transportation infrastructure precluded the use of this area for routine electronic warfare threat operation.
- *Relocate the YMDS near another air force base* – The only locations that would be able to handle a system such as this one would be bases in the continental United States. Elmendorf AFB in Anchorage does not have a large enough training airspace. Locating the range at another base would require aircraft at Eielson to travel large distances to train, incurring significant costs in the process.
- *No Action* – Congress had specifically directed the Air Force to install an instrumented air-to-ground training and bomb scoring range to be located in Alaska. Pursuing a no action alternative would have violated this directive.

1.4.3 The alternatives analysis conducted for the original *YMDS EA* resulted in the position that no other viable alternatives existed and only impacts associated with the proposed action and the no action alternatives would be addressed in the EA. In addition, the *YMDS EA* analysis resulted in a "finding" that no significant impacts to the human environment would result from the construction of the YMDS system and published a Finding Of No Significant Impact (FONSI) decision document. This decision document, along with the body of the EA, is found in Appendix B of this EA. Since the action for which this EA is being written is a limited expansion of an existing system for which a FONSI was prepared (and no significant impacts have subsequently been documented), the same alternatives analysis has been applied to the scope of this EA.

1.5 Decision to be Made

1.5.1 As required by Air Force Instruction 32-7061, an Environmental Impact Analysis Process must be completed to evaluate potential environmental consequences of the proposed expansion of the YMDS system. The documentation requirements provided for in this Air Force Instruction closely parallel and fully conform to documentation requirements found in NEPA. The completion of this EA is intended to satisfy these requirements. The proposed action and the no action alternative are described in detail in Section 2.0 of this document. A description of the resources located at each of the sites is provided in Section 3.0, and the impacts that could result from constructing each one are discussed in Section 4.0.

1.5.2 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, other alternatives will be considered for which impacts may not reach the threshold of significance.

1.5.3 The EA, a draft FONSI (if applicable), and all other appropriate planning documents will be provided to the Eielson Vice Wing 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 public notice announcing Eielson's proposed action 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. At the end of the 30-day public comment period, if no substantive comments are received, the decision maker will sign the FONSI.

1.6 NEPA Actions that Influence this Assessment

1.6.1 *Environmental Assessment of the Expansion and Upgrade of Military Training Routes, Alaska, 11th Air Force, 1992.* As a result of bringing new aircraft to Alaska, the Air Force proposed an expansion of existing air space available for training fighter pilots. Many issues with respect to impacts of aircraft flights were analyzed in this EA.

1.6.2 *Yukon Measurement and Debriefing System, Environmental Assessment, 11th Air Force, 1993.* To upgrade training opportunities for the 354th Fighter Wing at Eielson AFB, an ACMI system was proposed for the Fort Wainwright and Yukon Ranges. This system is also intended to support large force exercises and joint training events for DoD combat aircrews.

1.6.3 *Alaska Military Operations Areas-Environmental Impact Statement (EIS), 11th Air Force, 1995.* This EIS was prepared to address the environmental impacts of restructuring the Air Force Special Use Airspace in Alaska. This document assesses several issues including airspace management, biological resources, recreational resources, subsistence, land use, air quality, and noise as they relate to operation of military aircraft in the area which contains the existing YMDS, as well as lands that would contain the new facilities.

1.7 Project Scoping/Significant Issues

1.7.1 Scoping for this project was initiated with federal and state agencies as well as local native groups. Locations of proposed TIS sites were provided to all entities perceived as having an interest in providing input. A list of agencies contacted is provided in Section 5.1 of this document.

1.7.2 The Bureau of Land Management's (BLM) Glennallen Field Office provided comments to Eielson with respect to issues they identified for these sites. These comments are provided in Section 9.0 of this document. To date, no other contacted group has provided written comments.

1.8 Federal and State Permits or Licenses Needed to Implement the Project

1.8.1 Section 106 of the National Historic Preservation Act requires project-specific identification of cultural resources. An archeological survey and Section 106 Consultation would need to be completed prior to implementing the proposed action.

1.8.2 Land use permits from the respective land managers/owners would have to be obtained prior to construction of facilities.

2.0 Description of the Proposed Action and Alternatives

Section 2.0 provides a description of all feasible alternatives considered to achieve the purpose and need described in Section 1.0. The proposed action and the no action alternative will be addressed.

2.1 Proposed Action – Construct Seven New YMDS TIS Facilities in the Yukon and Fox MOAs.

2.1.1 A TIS facility is comprised of an 8- by 8-foot equipment shelter, two 500-gallon propane storage tanks, a line-of-site data transmission tower, and a 60-foot diameter helicopter landing area. The equipment shelter would contain a propane-fired thermoelectric generator and a set of storage batteries. Attached to the equipment shed is a solar array for recharging the storage batteries. Figure 2-1 is the existing SR 1 TIS facility and is typical of what the additional seven proposed TIS sites would look like.

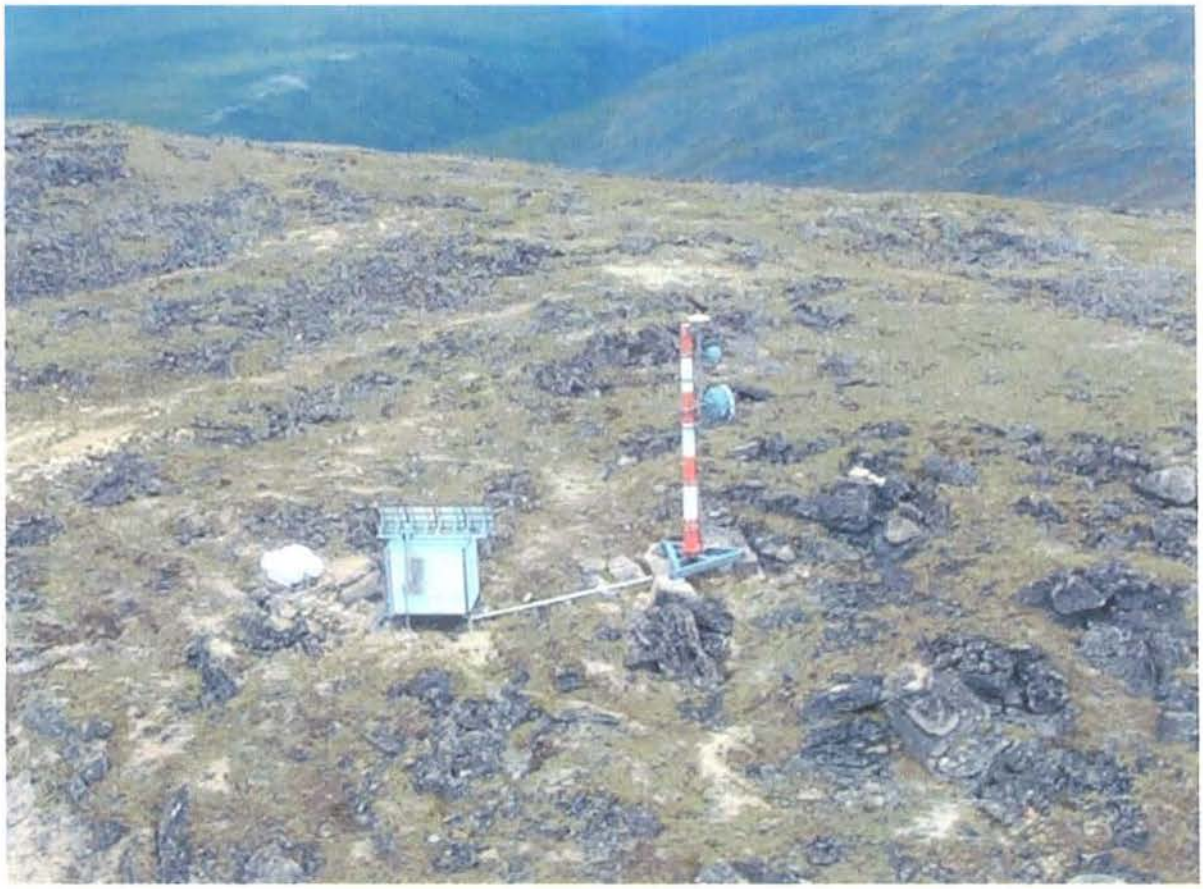

Figure 2-1 – Typical TIS Facility Configuration at SR 1

2.1.2 The configuration of the equipment at each of the proposed new TIS sites would vary slightly depending on terrain. In addition, the transmission tower would vary in height from 30 to 75 feet depending on its transmission requirements. Grounding rods would be installed by drilling or driving rods into the bedrock.

2.1.3 Access to six of the seven sites would be by helicopter. The seventh site, Taylor Mountain, will have road access. Equipment, construction materials, and system components would be hauled via flatbed trucks, on existing road systems, to a secured staging area located at the closest road system drop-off point to each of the sites. From this point all materials and personnel would be transported by helicopter to the TIS sites. Material transport from the staging area to a given site is estimated to require 10 round trips using a CH-47 Chinook helicopter over a 5 day period. A Bell 212 helicopter would be required for transporting personnel during the estimated 2 weeks necessary for site prep, construction, integration, and system testing. Helicopter trips for transporting personnel would require approximately two round trips daily between the staging area and the facility site. Once the TIS facility is constructed and operational, routine helicopter flights to perform maintenance would occur monthly.

2.1.4 Construction of the TIS facilities would require that a foundation be built for both the instrument shelter and the antenna/transmission tower. All of the proposed sites are on ridge tops and the geologic substrate varies from rock/rubble sized weathered bedrock to alpine tundra with a very thin layer of soil on the bedrock. Constructing a foundation would require some leveling of the ground and the pouring of concrete piers on-grade. The concrete piers would be anchored to bedrock with steel rods driven into the ground. All construction work would be done by hand.

2.2 Proposed Sites

There are seven proposed TIS sites, four in the vicinity of the Yukon MOAs and three in the vicinity of the Fox MOAs.

Table 2-1 – Proposed TIS Sites

Site Name	USGS Quad	GPS Latitude	GPS Longitude	Land Owner
SR 8	Eagle C-6	N 64 31.955	W 143 42.432	BLM
NR 8	Eagle D-4	N 64 51.819	W 142 34.075	BLM
SR 7	Eagle C-2	N 64 44.327	W 141 46.305	BLM
SR 9	Eagle A-3	N 64 01 33.2	W 142 18 56.2	State of AK
FR	Gulcana D-6	N 62 58 28.5	W 146 48 52.6	BLM
FR 1	Healy B-1	N 63 15 38.9	W 147 15 16.4	BLM
FR 2	Talkeetna Mt C-3	N 62 33 48.8	W 148 20 09.0	BLM

2.2.1 Yukon Military Operating Airspace Sites

South Remote 8 (SR 8)

South Remote 8 would be sited near the top of an unnamed mountain located on BLM land near its northeast boundary with the Yukon-Charley Rivers National Preserve lands. The ridge top has a crest elevation of 5,540 feet (Figure 2-2) and is oriented in an east to west direction. The facility would face in a westerly direction, overlooking the upper reaches of the Goodpaster River. A 30-foot high tower would be needed at this site. The proposed site has a thin layer of soil that is sparsely vegetated with typical alpine tundra vegetation. No alternate sites were considered for this facility.

Figure 2-2 – Proposed SR 8

Figure 2-3 – Proposed SR 8 TIS Site Looking West

North Remote 8 (NR 8)

The proposed NR 8 TIS site is near the top of a flat ridgeline that has an elevation of approximately 6,131 feet. The peak is located on BLM land near its northwest border with the Yukon-Charley Rivers National Preserve. The site is level, but has a rock/rubble surface with very little vegetation. A 30-foot monopole tower would be needed for this installation. An alternate site, approximately 3 miles to the west, was considered, but rejected due to lack of good line-of-sight transmission.

Figure 2-4 – Proposed NR 8 TIS Site

Figure 2-5 – Proposed NR 8 TIS Site Looking East

South Remote 7 (SR 7)

The proposed location for the SR 7 TIS is on a ridge top that runs between Mount Eldridge and Glacier Mountain. The ridge is also the site of an existing communications facility, including a BLM relay antenna and four other smaller antennas. The ridge top has an elevation of 6,133 feet and drops off steeply to the southwest. No alternate sites were available for consideration for this facility. The site for the SR 7 TIS would be either to the northwest of the existing BLM relay facility or to the southeast of the facility. Both areas would have adequate level areas to site equipment and facilities. A 30-foot high monopole tower would be installed at this location.

Figure 2-6 – Proposed SR 7 TIS Site

Figure 2-7 – Existing BLM Relay Facility at Proposed SR 7 TIS Site

South Remote 9 (SR 9)

The proposed location for the SR 9 TIS facility would be Taylor Mountain, a 5,051 foot elevation peak near Chicken, Alaska. The TIS equipment would be collocated with other facilities whose construction began during the summer of 2005 and will be completed during the summer of 2006. The Taylor Mountain facility includes a 7.2-mile long access road. Since an existing site was available for the SR 9 TIS facility, no alternate sites were considered.

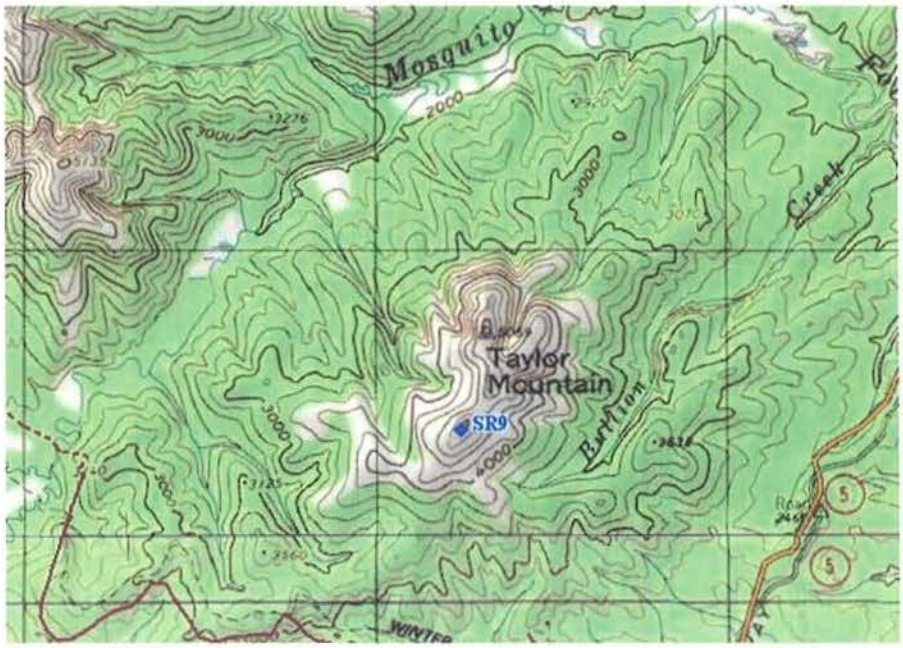

Figure 2-8 – Proposed SR 9 TIS Site

Figure 2-9 – Taylor Mt. SR 9 Facility Site

2.2.2 Fox MOA Sites

Fox Relay (FR)

The proposed FR site is located near the Denali Highway, 40 miles west of Paxson. The mountaintop has an elevation of 4,759 feet and is relatively flat. A preferred facility location would be on the north end of the mountaintop facing southeast towards the MacLaren River. The hilltop surface is rocky with a thin soil layer and a cover of alpine tundra vegetation. A 75-foot monopole would be required for line-of-site transmission at this site.

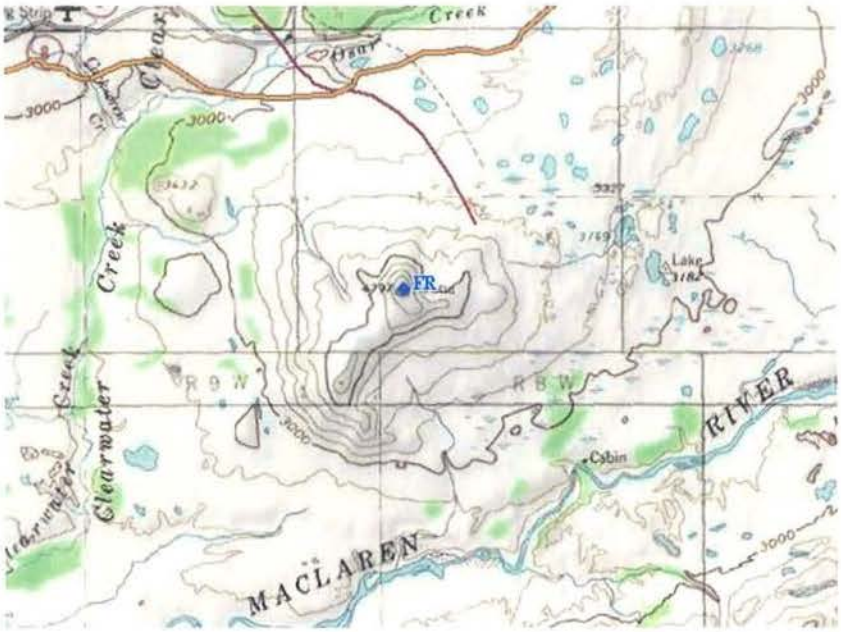

Figure 2-10 – Proposed FR TIS Site

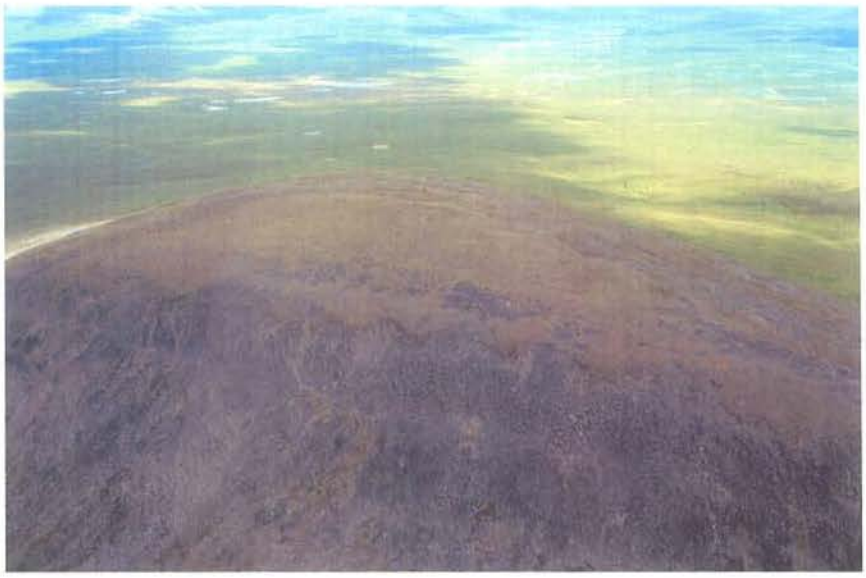

Figure 2-11 – FR TIS Proposed Site Looking SE at MacLaren River

Fox Remote 1 (FR 1)

The proposed FR 1 site is on a ridge top located north of the Denali Highway, midway between Paxson and Cantwell. The ridge top has an elevation of 6,225 feet and a rocky surface of fractured bedrock that supports a sparse community of alpine tundra vegetation. A 75-foot monopole tower would be needed at this site. The site overlooks the Susitna River.

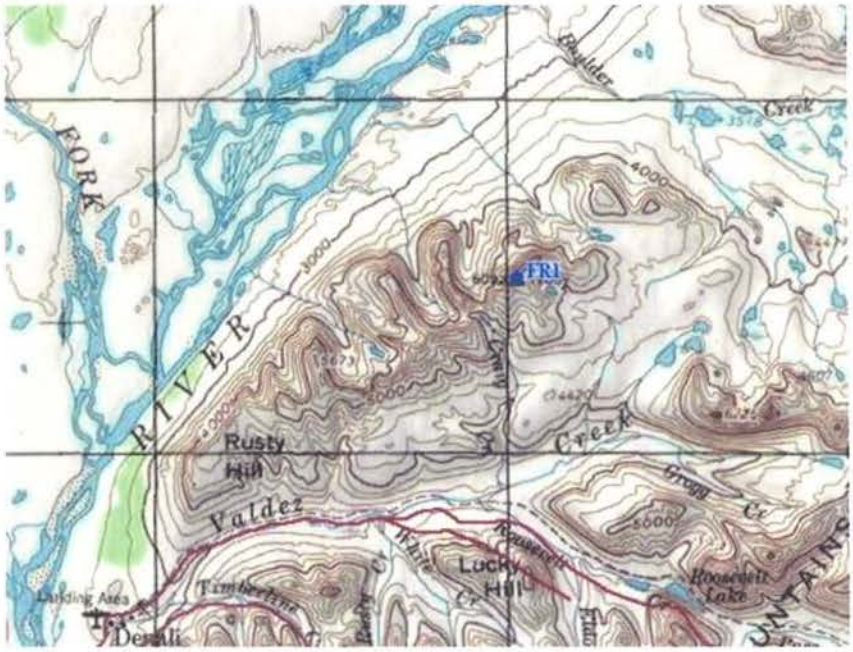

Figure 2-12 – Proposed FR 1 TIS Site

Figure 2-13 – Proposed FR 1 TIS Site Looking SE Towards the Susitna River

Fox Remote 2 (FR 2)

The proposed FR 2 TIS site would be located on an unnamed mountain in the Talkeetna Mountains at an elevation of 6,629 feet. The mountain top is relatively flat with a rocky surface, with almost no vegetation. A 30-foot monopole tower would be needed for this site.

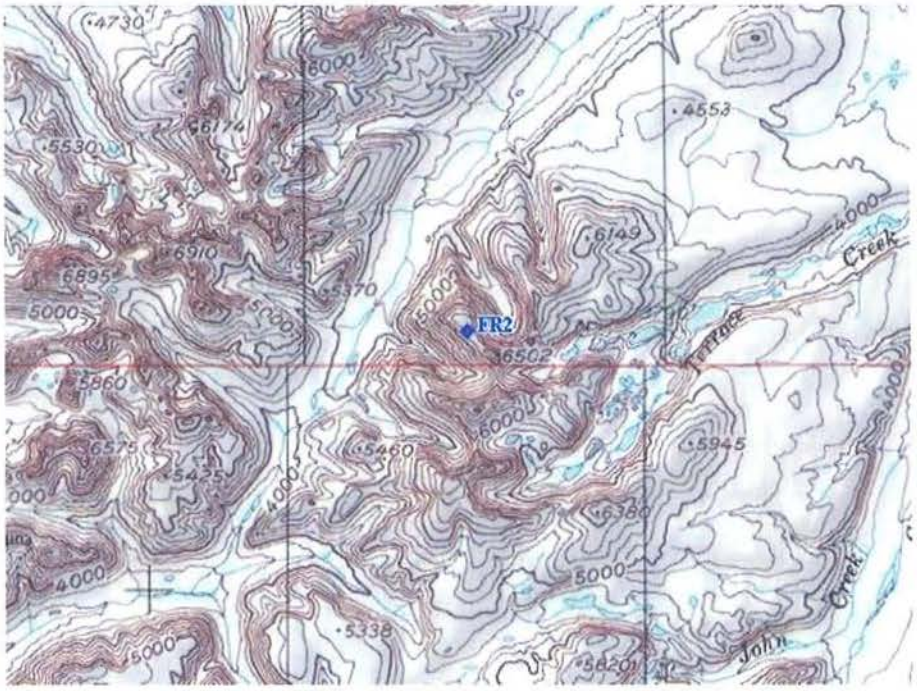

Figure 2-14 – Proposed FR 2 TIS Site

Figure 2-15 – FR 2 TIS Site Looking West with Proposed TIS Site in Center

2.3 No Action Alternative

The no action alternative would result in the continued use of the existing YMDS as it is presently configured.

2.4 Other Alternatives Considered

Some additional sites were analyzed during the initial project planning process. However, these sites were not given further consideration due to the engineering and technical criteria that a given location is required to meet. This includes line-of-sight transmission to other system components and accessibility for construction and maintenance.

3.0 Affected Environment

Section 3.0 describes the existing environment and resource components that would be impacted by the proposed project.

The resources discussed in this section are presented as a baseline for comparisons of environmental consequences. Unless otherwise specified, resource descriptions in Section 3 are regional descriptions that encompass the sites proposed in the Proposed Action. Since the sites cover two fairly distinct physiographic regions, the physical resource descriptions will be provided accordingly. Resource components discussed in the section are as follows:

- *Physical resources* which include topography, geology, soils, climate and air quality, ground and surface water, and noise.
- *Biological resources* including vegetation, wildlife, fish, and threatened or endangered species.
- *Cultural Resources* including archeological or historical resources.
- *Recreational resources*
- *Socioeconomic factors*

3.1 Physical Resources

3.1.1 Topography, Geology, and Soils

The sites proposed as locations for additional TIS facilities are found in two relatively distinct physiographic regions of Alaska. The four sites that would expand coverage in the Yukon MOAs are located in a part of interior Alaska that lies within the eastern portion of the Upper Yukon physiographic province. The remaining three sites that would expand coverage in the Fox MOAs have proposed locations that lie in the extreme northern portion of the South Central physiographic province, which is bounded to the north by the Alaska Range. Since these two physiographic regions are quite different, separate discussions of physical resources will be provided.

Upper Yukon Region (Yukon MOAs)

3.1.1.1 The portion of the Upper Yukon region within which the Yukon MOA sites would be built is known as the Yukon-Tanana Upland. It covers approximately 60,000 square miles in the northeast part of the state that lies between the Yukon River on the north and the Tanana River on the south. The region is primarily drained by the Upper Yukon River and its tributaries from the Canadian border west to Rampart, Alaska, and includes Hess Creek, Birch Creek, Beaver Creek, Charley River, Porcupine River, Chandalar River, and the upper portion of the Yukon River. The southern portion of the area is drained by the Fortymile River which drains into the Yukon River. The northern boundary of this subregion is the continental divide on the crest of the Brooks Range and the southern boundary is marked by the Tanana River-Yukon River divide. Rounded ridges with gentle slopes characterize the topography to the south with some domes rising to 5,800 feet above adjacent valley floors. Rugged ridges with alluvial outwash fans are common along the northern boundary. The main physiographic features in the central

portion are the Porcupine Plateau and the Yukon Flats. The Yukon Flats cover a broad area and consist of marshy, lake-dotted flats rising from 300 feet in altitude on the west to 600 to 900 feet on the north and east. Land ownership for the proposed sites in the Yukon MOAs is provided in Table 3-1.

Table 3-1 – Land Ownership

Facility	*Land Ownership*
SR 8	**Bureau of Land Management**
NR 8	**Bureau of Land Management**
SR 7	**Bureau of Land Management**
SR 9	**State of Alaska Department of Natural Resources**

3.1.1.2 The central portion of the Upper Yukon physiographic province is geologically complex and includes the Tintina fault zone. Thrust faults cut a sequence of highly deformed Paleozoic sedimentary and volcanic rocks containing limestone. Serpentine rocks and a wide variety of other igneous rocks also occur throughout the area. South of the Tintina fault zone fairly high-grade Mesozoic and Tertiary granitic rocks intrude metamorphic rocks. In the western portion of the region large areas are covered by volcanic rocks of Tertiary and Quaternary age. Coal-bearing rocks containing subbituminous coal can be found in the northeast part of the region. A coal deposit at Chicken on the South Fork of the Fortymile River contains a subbituminous coal seam 22 feet in width. Unconsolidated deposits accumulated during the Pleistocene period are concentrated in the river valleys and lowlands. The Fortymile Mining District has known occurrences of gold, iron, titanium, barium, garnet, tin, mercury, tungsten, thorium, silver, lead, copper, zinc, and antimony.

3.1.1.3 Soils in the upland areas consist of well-drained silty soils, chiefly loess over bedrock that varies in depth. Upland soils found on south-facing slopes are generally better drained than those found on north-facing slopes, which usually are underlain by discontinuous permafrost. Soils found at the peaks of summits are characteristically well drained shallow silt loam overlying very gravelly loam. Soil cover on the summits of the mountains where the four proposed TIS sites would be located consists of a well-drained gravelly silt loam less than 2 inches in depth interspersed with exposed areas of weathered bedrock that forms a rocky and rubbly surface. These rocks can be from a few inches to several feet in diameter. Soils in the alluvial plains of the streams that drain the region are generally well-drained sands and gravels to poorly drained silts and loams.

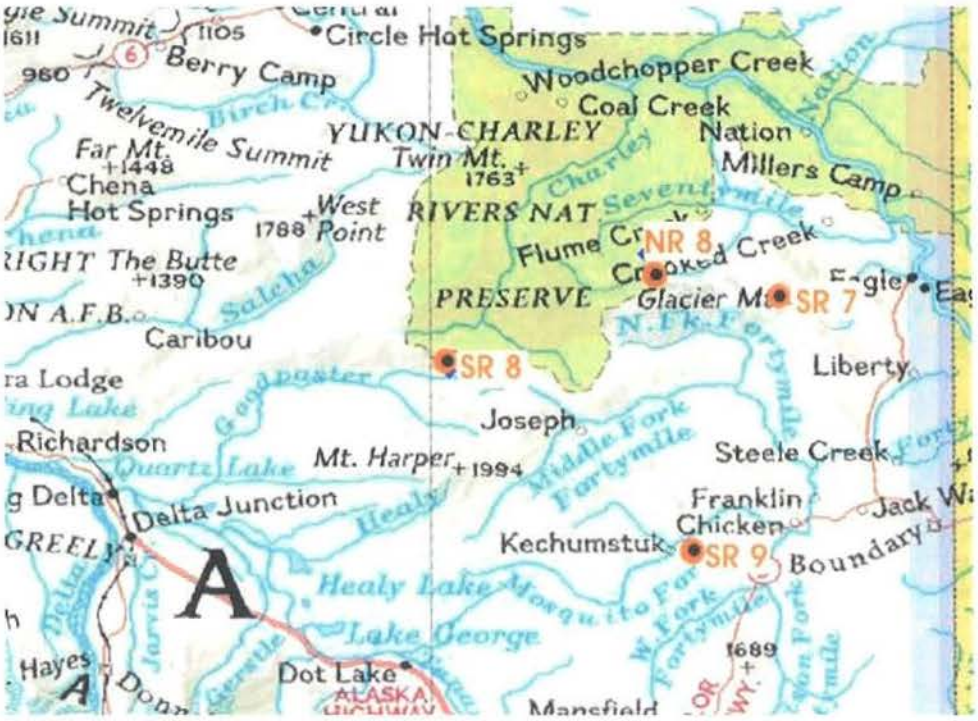

Figure 3-1 – Yukon MOA Sites

South Central Region (Fox MOAs)

3.1.1.4 The TIS sites proposed for expansion of the Fox MOAs lie within the extreme northern portion of the South Central physiographic province, which is bounded to the north by the Alaska Range. Extensive glacier systems characterize the Alaska Range in this area and provide source water for most of the large rivers in the region. This region includes the glacially fed Susitna River drainage that drains into the Gulf of Alaska and the Copper River Basin which drains into Prince William Sound. The rugged, sharp peaks of the Alaska Range to the north, including Mounts Deborah and Hess, which rise in altitude to 12,339 feet and 11,940 feet respectfully, mark the area in the vicinity of the proposed action. The West Fork Glacier and Susitna Glacier are typical of the alpine glaciers found in the area. The proposed TIS site locations FR and FR 1 are located in the Clearwater Mountains, which rise to 5,500 feet above adjacent valley floors. Valleys in the region are generally flat and alluvium-floored. The site FR 2 is situated further south and is located in the Talkeetna Mountains, a compact set of ridges that have elevations from 6,000 to 8,000 feet high. All three proposed TIS sites are on BLM land.

3.1.1.5 Geologically, the southern part of the Alaska Range and surrounding mountains consists of many parallel, glaciated, north-trending ridges underlain by granitic batholiths which are intruded into Paleozoic and Mesozoic volcanic and sedimentary rocks. Serpentine ultramafic rocks and a wide variety of other igneous rocks also occur throughout the area. The Denali Fault System, a prominent fault in the region, cuts the mountain flanks and runs parallel along the length of the Alaska Range. Mineral provinces occur throughout the region, mainly characterized by copper, molybdenum, gold, and silver. Unconsolidated deposits accumulated during the Pleistocene period are concentrated in the river valleys and lowlands. The Valdez

Creek placer mine located near FR 1 was the largest producing gold placer mine in the state before closing in the mid 1990s.

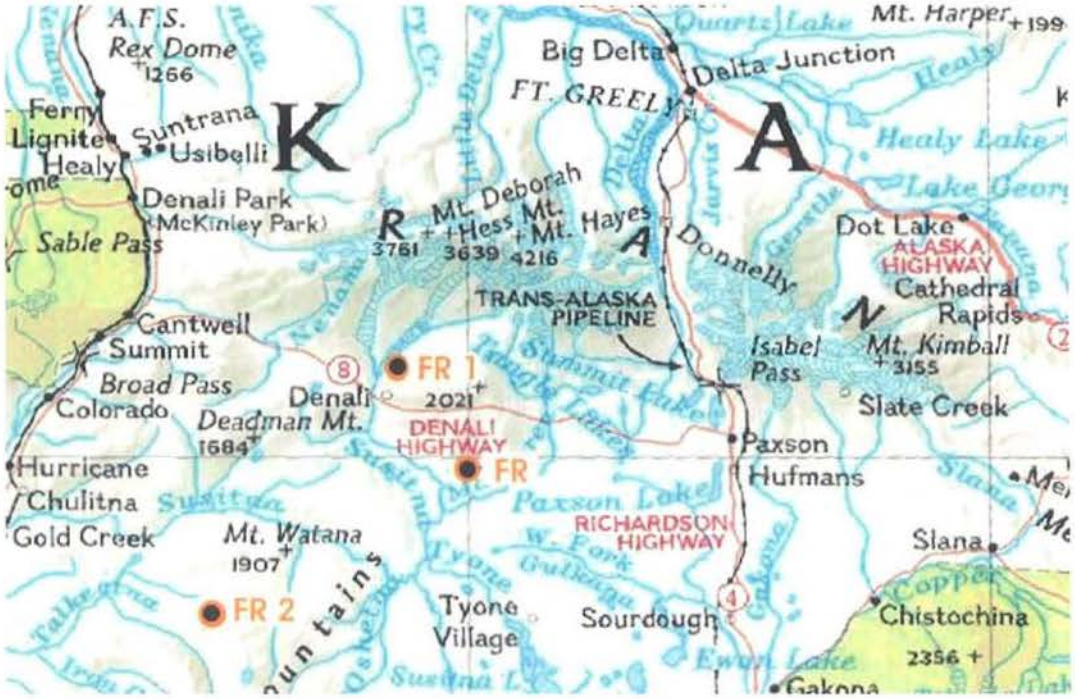

Figure 3-2 – Fox MOA Sites

3.1.1.6 Soils in the region are mantled with loamy soils of variable texture. Wet loams with thick surface organic mats occupy lowland areas along rivers. Soils in the Susitna River valley consist of poorly drained loamy soils with a thick surface layer of peat. Other poorly drained soils occupy lower slopes adjacent to valley bottoms in the Nenana River valley and the Monahan Flats located northwest of FR 1. Soil texture becomes more gravelly at higher elevations. Soils found at the peaks of summits are characteristically well-drained, shallow silt loam overlying very gravelly loam.

3.1.2 Climate and Air Quality

Upper Yukon Region (Yukon MOAs)

3.1.2.1 From the Canadian border west to the area surrounding the proposed project, the Upper Yukon physiographic province is classified as having a continental subarctic climate. The climate of the Fortymile area is continental, characterized by long, cold winters, low precipitation and a short vegetation-growing season. Extended periods of temperatures ranging from -50 °F to -60 °F are common and temperatures as low as -75° F have been recorded. Average weather values are not available from the Fortymile watershed, but values from a weather station at Eagle, Alaska, (approximately 40 miles north of the Fortymile River) are presented in Table 3-2.

Table 3-2 – Average Annual Weather Values for Eagle, Alaska 1949-1998[1]

Precipitation (inches)	*Average Minimum Daily Temperature °F*	*Average Daily Maximum Temperature °F*	*Snowfall*
12	12.5°	36°	55"

The frost-free period is generally from the third week in May until the end of August. May and June have the highest winds with average wind speeds of 7.7 and 7.2 miles per hour, respectively. During most of the year, the prevailing wind direction is from the north at an average of 5.15 miles per hour. However, in June and July the wind direction is typically from the southwest. Wind speed can vary with elevation and roughness of surrounding terrain.

3.1.2.2 The project sites fall outside the boundaries of any air quality control region. Existing conditions in the area are assumed to be in attainment with National Ambient Air Quality Standards.

South Central Region (Fox MOAs)

3.1.2.3 The northern portion of the South Central physiographic province is classified as having a continental subarctic climate. A wide range of extreme temperature changes from summer to winter, large mean annual/diurnal temperature changes, and extreme seasonal contrasts in sunlight duration characterize this climate. The region typically has clear skies and cold temperatures (lows of -60° F, highs of +40° F) in winter and hot, dry summers (lows of +30° F, highs of +90° F). This results in a low relative humidity and a high evaporation rate of surface waters, and a high sublimation rate of ice and snow. Annual precipitation averages slightly more than 12 inches. The frost-free period is generally from the third week in May until the end of August.

3.1.2.4 The project sites fall outside the boundaries of any air quality control region. Existing conditions in the area are assumed to be in attainment with National Ambient Air Quality Standards. Naturally occurring airborne loess is common along the Susitna River valley located near FR 1.

3.1.3 Ground and Surface Water

Upper Yukon Region (Yukon MOAs)

3.1.3.1 Groundwater is typically found in small quantities in upland areas in fractures and joints of underlying bedrock. The lack of groundwater in large quantities is attributed to high topographic relief found in the area. Groundwater is available in moderate to large quantities from the gravel deposits found in the alluvial plains of stream valleys. Depth to groundwater varies with topography and presence of permafrost. The major source of recharge for aquifers is precipitation in upland areas that enters the ground through infiltration. The groundwater quality in the region is unknown.

3.1.3.2 This entire project area is in the Yukon River drainage basin and rivers that drain the area flow north and south to the Yukon River. The major river that flows north in the vicinity of the project area is the Charley River. This river's entire watershed is within the boundaries of the Yukon-Charley Rivers Preserve. The Fortymile River flows south and drains a major portion of the project area and has its confluence with the Yukon River in Canada. Both the Fortymile and the Charley Rivers are designated as Wild and Scenic rivers. Most streams in the area freeze solid during the winter months and reach their peak flows during June and July. Lakes in the region are mainly thaw lakes located in valley floors, marshlands, and low mountain passes.

3.1.3.3 Wetlands are a predominant physical feature found within the Upper Yukon Region. The presence of extensive areas of permafrost has created perched water table conditions in many areas, resulting in seasonally persistent moist or saturated soil conditions. However, no wetlands are known to exist in the project areas.

South Central Region (Fox MOAs)

3.1.3.4 Groundwater supply is greatest in the floodplain alluvium along riverbeds and drainages throughout the region. Detailed groundwater data for the region is not available. The major source of groundwater recharge for aquifers is from influent seepage of glacier-fed streams and snowmelt. Groundwater at the proposed TIS sites is likely to be at great depths due to the site's elevations.

3.1.3.5 The entire FR 1 area is in the Susitna River drainage basin with streams flowing south to the Gulf of Alaska. Lakes in the region are mainly thaw lakes located in valley floors, marshlands, and low mountain passes. Butte Lake, located 18 miles southwest of FR 1, is 2 miles long and is the largest lake in the vicinity of the project area. Further east from the project area there are many large lakes including the Upper Tangle Lakes which is part of the Delta River Wild and Scenic River system. Further south and east from the Delta River, is the Gulkana River, a designated Wild River. Most streams in the area freeze solid during the winter months and reach their peak flows during June and July.

3.1.3.6 Wetlands are a predominating physical feature found within the South Central region. The presence of extensive areas of permafrost has created perched water tables in many areas, resulting in seasonally persistent moist or saturated soil conditions. Most wetlands occur at lower elevations and there are no known wetlands at the three proposed project sites.

3.1.4 Noise

3.1.4.1 All seven proposed TIS sites are located in remote areas where the only man-made noise that may occur is from military and civilian aircraft. The reason military aircraft use the airspace is that the sites are located within existing MOAs. As a consequence, military aircraft (including fighter jets and transport planes mainly from Eielson Air Force Base) fly in the vicinity on a regular basis. The use of this airspace for flying exercises was the topic of an EIS written in 1995. A major issue that was addressed in this EIS was the impact that noise would have on both human and wildlife populations that exist underneath this airspace. As part of the EIS process, input from the public as well as federal and state agencies was obtained for consideration. The frequency and duration of the aircraft activity was analyzed in light of this

input and a record of decision (ROD) was published which outlined in detail the precise number of flights that would be allowed and at what altitudes. The schedule of flights was developed to mitigate, to the extent possible, impacts to recreation, wildlife, and civil aviation. The schedule developed for the EIS is still in effect and is not being proposed for alteration as part of this EA process.

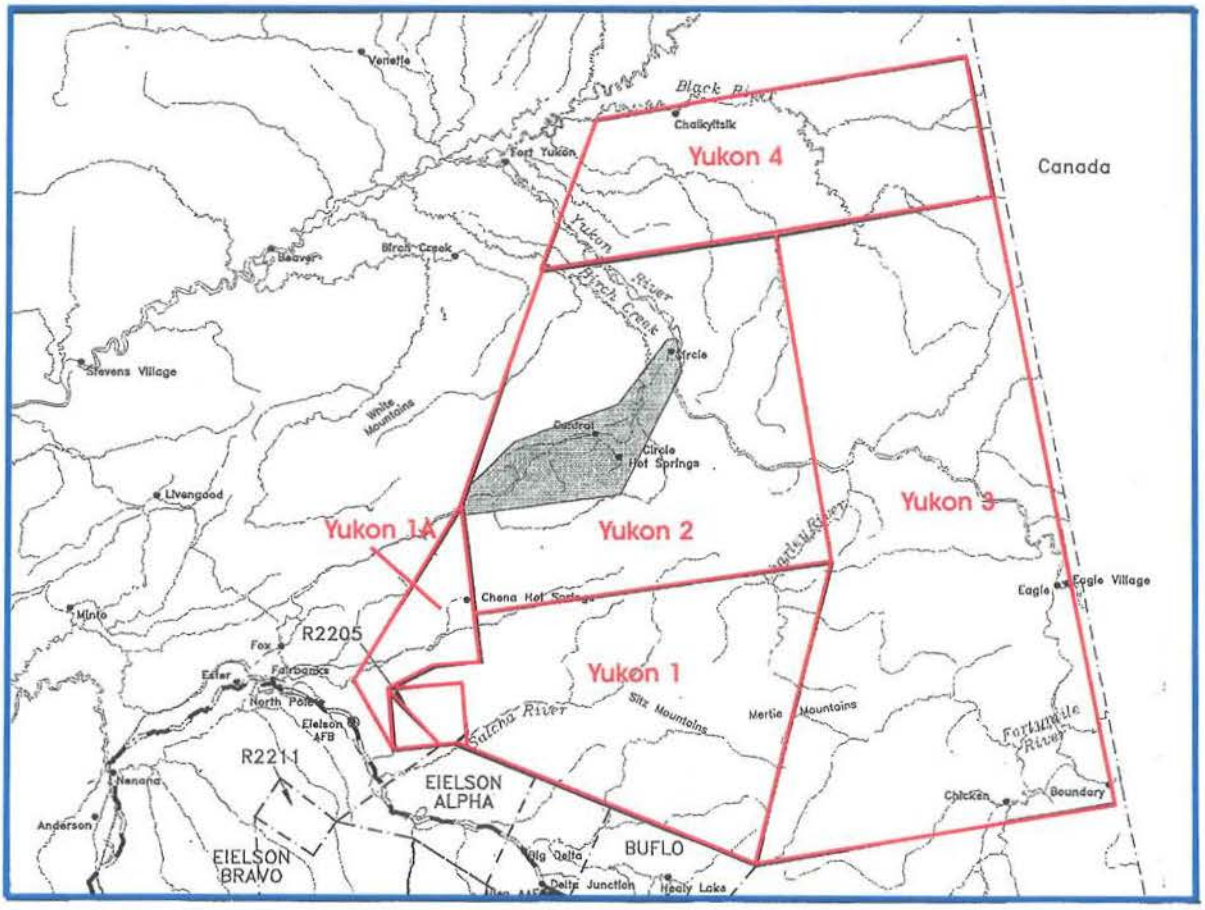

Figure 3-3 – Upper Yukon Region (Yukon MOAs)

3.1.4.2 Part of the mitigation proposed for the MOA EIS was to fund studies of the impacts of aircraft noise on potentially sensitive species. In 1999, a study was undertaken to assess the impacts of aircraft noise on Dall's sheep in the Yukon-Charley Rivers National Preserve. The results of this study (*The Effects of Military Jet Overflights on Dall's Sheep In Interior Alaska*, Lawler et al) indicated that the noise disturbance generated by military overflights during the study period did not cause significant affects on sheep behavior and habitat use. It was noted that the lack of a significant response could be the result of adaptive behavior as these animals have been exposed to these types of overflights for many years prior to the study.

3.1.4.3 The construction and maintenance of the TIS facilities at the proposed sites would result in some elevated noise levels, but they would be mostly temporary in nature. The construction of the sites would require approximately 10 round trips during a 5-day period with a twin engine Chinook helicopter to stage equipment and materials. An additional 28 round trips during a

2-week period with a single engine helicopter would be needed to transport personnel to the site. Once the facility is operational, no equipment noise would occur as the power generation system is run on propane. Maintenance flights to the operational facility would occur three to four times a year by a single engine helicopter.

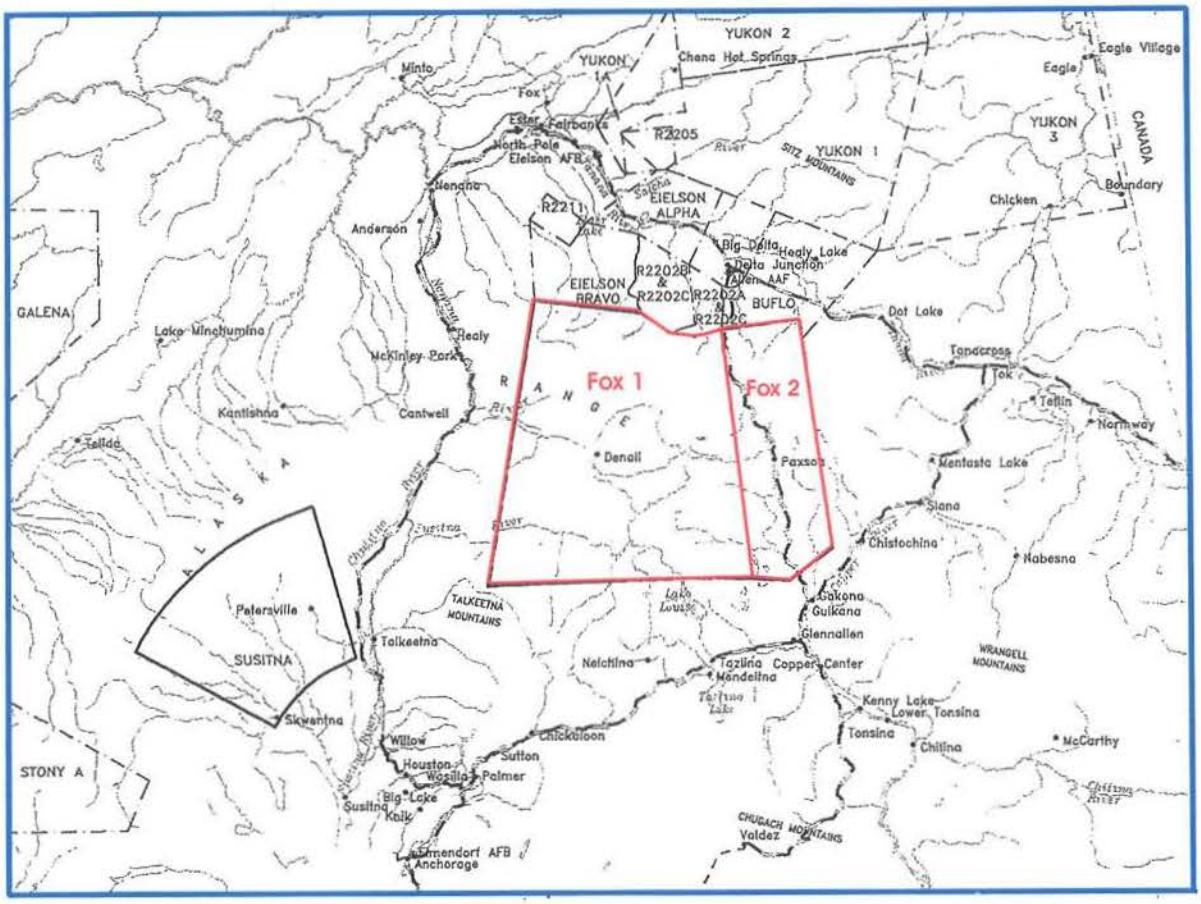

Figure 3-4 – Military Operating Air Space in the Vicinity of the South Central Region

3.2 Biological Resources

Upper Yukon Region (Yukon MOAs)

3.2.1 Vegetation

3.2.1.1 The Upper Yukon Region supports a variety of plant communities. Due to the variations in the surrounding terrain, the plant communities vary in relation to slope orientation, changes in elevation, and fire history. Changes in vegetation are also influenced by spatial differences in soil temperature, moisture content, soil fertility, and presence of permafrost. The major plant community types include upland mixed spruce-broadleaf forests, white and black spruce coniferous forests, herbaceous wetlands, and alpine tundra.

3.2.1.2 Upland mixed spruce-broadleaf forests tend to occur on well-drained sites with little permafrost. This forest type is commonly found on south-facing slopes. Tree species include white spruce, paper birch, quaking aspen, and balsam poplar. Willows, alder, wild rose, blueberry, and high-bush cranberry are common shrubs. Ridge tops with higher elevations usually consist of a tall shrub community characterized by dwarf birch and herbaceous species with widely scattered black spruce.

3.2.1.3 White and black spruce coniferous forests are common throughout interior Alaska. White spruce can be found on well-drained upland and flood-plain sites, especially where permafrost is lacking, and on low-elevation slopes with south, west, or east aspects. Black spruce forests tend to occur on poorly drained sites underlain by permafrost. Black spruce forests are common in low-lying areas, drainage basins, and north-facing slopes. Black spruce also occurs in closed canopy stands and as scrubby open stands of dwarf trees. Other species commonly occurring in white and black spruce forest type include tamarack, blueberry, low-bush cranberry, Labrador-tea, and feather moss.

3.2.1.4 Herbaceous wetland plant communities occur in poorly drained soils and are typically found where permafrost is present. Low growing shrubs such as willow and bog blueberry may be present, while some herbaceous wetlands consist primarily of graminoids and sedges.

3.2.1.5 Alpine tundra includes barren lands and is usually found on mountains, ridges, dry river terraces, alluvial fans, or on rubble slopes where bedrock is close to the surface. Low growing herbs are often present and may consist of mountain avens, dryas, lousewort, and fleabane. Graminoids such as bluejoint, Siberian fescue, and sweetgrass may be found along with lichens and mosses. These types of plant communities are typical of the four proposed TIS sites. The sites vary from having a full vegetative cover to other sites that have mostly a rock/rubble surface with only sparse patches of vegetative growth.

3.2.1.6 The areas associated with the two TIS sites that have been proposed for locations near the eastern and southern boundary of the Yukon-Charley Rivers Preserve (SR 8 and NR 8) have been included in an ecological unit mapping effort conducted by the National Park Service (Swanson, 2001). These two sites have been classified as *Upper Charley Mountain Tundra: high and rugged (MT1).* These areas have been described as "sparsely vegetated with considerable rubble and bedrock exposed at the surface in cliffs; patches of herbaceous plants or dwarf shrubs on gentle slopes." The other two sites proposed for this region (SR 7 and SR 9) have similar ecological characteristics. Both are above 5,000 feet in elevation and have rocky/rubbly surfaces with sparse growths of herbaceous plants.

South Central Region (Fox MOAs)

3.2.1.7 In general, the vegetative communities that occur in the South Central Region are similar to those found in the Upper Yukon Region. The Alaska Range and its southern foothills are characterized by high peaks, steep slopes, and broad valleys. As in the Upper Yukon Region, the distribution of plant communities is primarily determined by slope and aspect. The soils of upper hillsides are shallow and gravelly. Vegetation on these well-drained windswept, alpine slopes consists of mainly dwarf shrub communities. Slopes and drainageways that are more

protected support communities of dwarf and tall shrubs. Moderately drained slopes with stony silt loam soils support open, low dwarf birch dominated shrub stands. At higher elevations, alpine tundra is typically found on mountains, ridges, dry river terraces, alluvial fans, or on rubble slopes where bedrock is close to the surface. Characteristic shrubs include resin birch, dwarf arctic birch, crowberry, Labrador-tea, and mountain heath. Herbs present may consist of mountain avens, dryas, lousewort, and fleabane. Graminoids such as bluejoint, Siberian fescue, and sweetgrass may be found along with lichens and mosses.

3.2.1.8 Two of the proposed TIS sites, FR and FR 1 are well in excess of 6,000 feet in elevation. The soil at these two sites varies from sparse to bare fractured bedrock. Only a very sparse growth of vegetation is present. Site FR 2 is quite a bit lower in elevation and has a well established vegetative cover typical of alpine tundra.

3.2.2 Wildlife

Upper Yukon Region (Yukon MOAs)

3.2.2.1 Wildlife species in the surrounding areas are typical of those found in Interior Alaska. Large mammals likely to be found in nearby habitat include moose, black bear, brown bear, Dall's sheep and caribou during certain parts of their annual migration. According to the Alaska Department of Fish and Game, the moose population in the area is low; about 0.5 moose per square mile. The Fortymile caribou herd utilizes the surrounding area as its principle winter range. Since 1995, the Fortymile caribou herd has increased from a population of 22,000 to almost 40,000. The Fortymile caribou herd once numbered nearly 500,000 caribou and ranged across eastern Interior Alaska and the Yukon Territory. Periodic hard winters coupled with over harvest and high predation rates, drove the herd to less than 7,500 animals by the early 1970s. It is currently about 5 percent of its former size and occupies about 25 percent of its former range, mostly in Alaska. Its range lies in portions of four game management subunits (20B, 20D, 20E, and 25C). Small mammals present include gray wolf, red fox, wolverine, beaver, river otter, mink, snowshoe hare, red squirrel, lynx, marten and coyote. Most of these species, with the exception of Dall's sheep would not frequent the areas associated with the proposed project sites.

3.2.2.2 Migratory birds found in the area include passerines and a variety of shorebirds and waterfowl (i.e., swans, geese, loons, grebes and ducks). Most bird species that breed in Interior Alaska are migratory and are present only during the spring and summer months. Raptors found in the area include bald and golden eagles, falcons, hawks, kestrels, great horned owls, great gray owls, short-eared, and northern hawk owls. Non-migratory birds include ravens, jays, chickadees, songbirds, woodpeckers, grouse, and ptarmigan.

3.2.2.3 A bird inventory was conducted in the Yukon-Charley Rivers National Preserve during the breeding seasons of 1999 and 2000. Species distribution was recorded and correlated with the ecological unit mapping of the Yukon-Charley Rivers National Preserve that was completed in 2001. As previously indicated, the two proposed TIS site locations near the Preserve fall into the *Upper Charley Mountain Tundra: high and rugged (MT1)* ecological unit. Bird species recorded for this type of habitat are shown in Table 3-3.

Table 3-3 – Bird Species

Species	Number Sited
Common Raven	1
Northern Wheatear	2
American Pipit	7
Wilson's Warbler	2
American Tree Sparrow	1
Savannah Sparrow	11
White-crowned Sparrow	3
Common Redpole	2

South Central Region (Fox MOAs)

3.2.2.4 Large mammals that are likely to be found in nearby habitat include moose, caribou, grizzly bear, and black bear. The 33,000+ Nelchina caribou herd utilizes the areas near the proposed facility locations as its principle winter range and migrate further south to the foothills of the Talkeetna Mountains during spring for calving. Dall's sheep can be found in the Talkeetna Mountains to the south near the proposed FR 2 site. Other furbearers present include wolves, coyote, fox, lynx, arctic snowshoe hare, red squirrel, marten, beaver, mink, and short-tailed weasel.

3.2.2.5 Some of the more important waterfowl habitat in the region is the Nelchina Basin located approximately 75 miles southeast of the FR 1 site. The Nelchina Basin is located in an intermountain basin, which is liberally dotted with lake and stream systems. Lesser scaup, scoter, bufflehead, widgeon, mallards and goldeneyes are the most abundant duck species. Canada geese nest along the upper river systems in the region including the West Fork of the Susitna River not far from the proposed FR 1 TIS site. Trumpeter swans also nest throughout the basin and important nesting and brood rearing habitat is found along the Susitna and the McLaren Rivers. Other migratory birds common to interior Alaska include gulls, swallows, thrushes, sparrows, and warblers. Non-migratory birds include ravens, jays, chickadees, woodpeckers, grouse, and ptarmigan. Raptors include bald and golden eagles, hawks, kestrels, owls, and gyrfalcons (usually above 2,500 feet in elevation).

3.2.3 Fish

Upper Yukon Region (Yukon MOAs)

3.2.3.1 The Yukon River is used by king, silver, and chum salmon that migrate upstream to spawning grounds. Important spawning tributaries in the region include the Porcupine, Kandik, Nation, Chandalar, Hodzana, and Charley Rivers, as well as Beaver Creek. The Yukon Flats contain a number of lakes and provide excellent habitat for whitefish and northern pike. Grayling, northern pike, and whitefish are found throughout the main drainage of the Yukon River.

Southcentral Region (Fox MOAs)

3.2.3.2 Many of the streams throughout this region are glacier fed and are heavily silt-laden and do not support extensive fish populations. Butte Creek located south of FR 1 reportedly has grayling and whitefish. Lakes in the vicinity are primarily thaw lakes and are too shallow and oxygen deficient to support fish on a year round basis. They are extensively stocked by Alaska Department of Fish and Game with lake trout and coho salmon. Some streams in the area are stocked with grayling.

Table 3-4 – BLM-Alaska Sensitive Status Species Found in Southcentral Region

Common Name	Scientific Name
Canada lynx	*Lynx canadensis*
Trumpeter swan	*Cygnus buccinator*
Harlequin duck	*Histrionicus histrionicus*
Red-throated loon	*Gavia stellata*
Buff-breasted sandpiper	*Tryngites subruficollis*
Red knot	*Calidris canutus*
Blackpoll warbler	*Dendroica striata*
Gray-cheeked thrush	*Catharus minimus*
Olive-sided flycatcher	*Contopus borealis*
Townsend's warbler	*Denfroica townsendi*
American peregrine falcon	*Falco peregrinus tundrius*

3.2.4 Threatened or Endangered Species

Upper Yukon Region (Yukon MOAs)

3.2.4.1 According to U.S. Fish and Wildlife Service (USFWS), there are no known threatened or endangered species within the region or the proposed project area. However, the proposed project site is within the range of the American peregrine falcon (*Falco peregrinus anatum*), which was removed from the list of threatened and endangered species in 1999. The nearby Yukon-Charley Rivers National Preserve has the highest nesting density of peregrine falcons in North America. Due to its recent recovery from endangered status, the USFWS will monitor the American peregrine falcon on a regular basis for the next decade. If survey data indicate a reversal in recovery, the American peregrine falcon could be emergency listed at any time. Therefore, the USFWS recommends agencies avoid impacts to peregrine falcons to assure a healthy long-term population.

3.2.4.2 No federal or state listed threatened or endangered plant species occur within the region.

South Central Region (Fox MOAs)

3.2.4.3 According to the USFWS, there are no known threatened or endangered species within the region. However, the three proposed TIS sites are within the range of the American peregrine falcon (*Falco peregrinus anatum*), a species that was delisted in 1999. Peregrine falcons are an infrequent migrant to the area.

3.2.4.4 In addition to threatened and endangered species, the BLM has developed an Alaska Sensitive Status Species List. This list is provided in Table 3-4. Not all of these species occur in the vicinity of the proposed project areas, but many do.

3.3 Cultural Resources

Upper Yukon Region (Yukon MOAs)

3.3.1 No prehistoric or archeological sites have been documented in the immediate vicinity of the four sites proposed for TIS facilities in the Yukon MOA. Two of the sites, SR 7 and SR 9, have been previously surveyed. If it is determined that NR 8 and SR 8 require a survey, a Phase I archeological survey would need to be completed prior to implementing the proposed action.

Southcentral Region (Fox MOAs)

3.3.2 There are no known cultural resources within the immediate vicinity of the proposed TIS sites FR, FR 1, and FR 2.

3.4 Recreational Resources

Upper Yukon Region (Yukon MOAs)

3.4.1 Three of the four TIS sites proposed for the Yukon MOAs would be located on BLM lands. Two of the BLM sites are near its boundary with the Yukon-Charley Rivers National Preserve (Preserve). The Preserve is a 2.5 million acre wilderness area that contains 160 miles of the upper Yukon River drainage and the entire watershed of the Charley River, a designated Wild and Scenic River. The Preserve was formed in 1978 to protect the unique resource values that are contained within its boundaries, including peregrine falcon, wolf, caribou, and Dall's sheep populations. The area provides high value recreational opportunities. The other proposed site on BLM land in the Yukon MOA is located within the drainage of the Fortymile River, a designated Wild and Scenic River. The area receives heavy recreational use during the summer months. The fourth TIS site proposed for siting in the Yukon MOA would be on State of Alaska land that is also in the watershed of the Fortymile River. The area receives moderate to high levels of recreational use, mostly from caribou hunters.

South Central Region (Fox MOAs)

3.4.2 This region has many recreational opportunities available and is a popular destination for canoeing, hiking, wildlife viewing, photography, snowmobiling, hunting, trapping, and fishing.

Recreational and subsistence hunting of big game species including moose, caribou, bear, and Dall's sheep is also popular.

3.5 Subsistence

Upper Yukon Region (Yukon MOAs)

3.5.1 In this region subsistence hunting is carried out predominantly by residents of Eagle City, Eagle Village, and Chicken and hunting is concentrated along the Taylor Highway corridor. Eagle City hunts moose primarily along the Yukon River and its tributaries. In the summer, salmon fishing on the Yukon and berry picking are also important.

South Central Region (Fox MOAs)

3.5.2 Although there are no traditional use native villages in the immediate area covered by the Fox MOAs, there are a number of native villages just outside of the MOA boundary whose residents do conduct subsistence activities in the region. These villages include Mentasta Lake, Chistochina, Gulkana, Tazlina, and Gakona and are for the most part located on the highway system. The principal species harvested for subsistence in this region are moose, salmon, caribou, brown and black bear, waterfowl, furbearers, Dall's sheep, and small game. The typical seasonal sequence for these activities is beginning in fall hunting caribou, sheep, moose, and bear, trapping furbearers in winter, harvesting hare and muskrat in spring, and fishing in summer.

3.6 Visual Resources (Aesthetics)

All seven proposed TIS sites are on prominent ridge tops and most have extensive, unobstructed views for 360 degrees. All but two of the sites (SR 7 and SR 9) would have visual intrusions associated with the areas. Three sites are near Wild and Scenic River corridors that are popular boating and recreation areas. The visual intrusions would be partially mitigated by painting facilities a neutral color.

4.0 Environmental Consequences

Section 4.0 provides a discussion of direct and indirect impacts that could result from implementation of the proposed action and the no action alternative. The order of discussion is by resource in the order they were presented in Section 3.0.

4.1 Physical Resources

4.1.1 Topography, Geology, and Soils

4.1.1.1 Proposed Action

4.1.1.1.1 The primary disturbance to soils would result from the installation of the concrete pier foundations for the tower and instrument shed. Disturbance to existing soil and vegetation during construction has the potential to result in minor erosion. This would likely only occur if heavy rains fell during construction activities.

4.1.1.1.2 Depending on the area selected for staging of equipment, compaction of soils could occur due to operation of equipment and storage of materials. However, due to the shallow soil cover, the effect would be minimal. Overall, only minor disturbances to soils and little or no alterations to topography would occur during installation of the proposed TIS sites.

4.1.1.2 No Action Alternative

There would be no disturbance to soils under this alternative.

4.1.2 Climate and Air Quality

4.1.2.1 Proposed Action

Air quality may be temporarily diminished during construction due to emissions produced by construction equipment. Airborne particulate matter in the form of dust emissions may also increase if the construction occurs during dry summer months. However, since soil layers are generally very thin or non-existent at the proposed TIS sites, there would be little likelihood of impacts to surrounding areas from dust.

4.1.2.4 No Action Alternative

There would be no changes to existing air quality under this alternative.

4.1.3 Noise

4.1.3.1 The major source of noise associated with this project would be noise generated by helicopter engines traveling to and from the site. As stated previously, material transport from the staging area to a given site is estimated to require 10 round trips over a 5-day period using a CH-47 Chinook helicopter. A Bell 212 helicopter would be required for transporting personnel

during the estimated 2 weeks necessary for site prep, construction, integration, and system testing. Helicopter trips for transporting personnel would require approximately two round trips daily between the staging area and the facility site. Once the TIS facility is constructed and operational, routine helicopter flights to perform maintenance would occur twice a year. Since all site preparation and facility construction would be completed by hand tools, only minor amounts of noise would be generated from these activities.

4.1.3.2 A way to mitigate some of the impacts associated with helicopter noise on wildlife is to maintain minimum altitudes when flying in the vicinity of sensitive habitat. Also, using direct line routes from the staging areas to the project site will localize the areas exposed to noise disturbance. Finally, some areas can be avoided altogether during sensitive periods such as nesting and brood-rearing for birds and calving for caribou. Where time of year or direction of approach restrictions for a particular site has been recommended by an agency, flights will strictly adhere to these recommendations.

4.1.4 Ground and Surface Water

4.1.4.1 Proposed Action

Since there is no ground or surface water in the immediate vicinity of the proposed project areas, it is unlikely that any impacts to these resources would occur; either during construction or later during operation of the facilities. During facility construction, helicopters would fly to the sites carrying equipment, personnel, and materials. There would be a need for storage of fuel at the staging site to refuel the helicopters. There is a minor risk of spill during refueling. The contractor would have spill response available on site. No motorized equipment would be used at the TIS sites for construction as all site preparation and facility construction will be done by hand. This precludes the need for storage of fuels and the chance of spills at the construction sites.

4.2 Biological Resources

4.2.1 Vegetation

4.2.1.1 Proposed Action

The proposed locations for the new TIS facilities consist primarily of rocky surfaces with sporadic vegetative cover. Site preparation for constructing the foundations of the 8- by 8-foot instrument shelter and the monopole transmission tower, would result in disturbance to approximately 200 square feet of ground. The construction of the foundation piers would result in the loss of some vegetation. The propane fuel tanks would be mounted on a frame and set on the ground and require minor leveling. During construction, helicopters would land on an area designated as a helicopter landing pad. Some compression of soils and vegetation would occur from this activity. Overall, site preparation and construction work would not result in a significant loss of vegetation at any of the sites.

4.2.1.2 No Action

No loss of vegetation would result from this alternative.

4.2.2 Wildlife

4.2.2.1 Proposed Action

4.2.2.1.1 Mountain summits are used sporadically by wildlife in the area except for possibly Dall's sheep and a limited number of bird species. There is generally a lack of adequate forage and other food sources, and most species that would occupy these areas would only do so on a transitory basis. Since construction would cause minimal site disturbance and there would be similar habitat type nearby, no significant impacts to wildlife populations are anticipated with the proposed installation of the TIS facilities.

4.2.2.1.2 Some impacts to birds could occur as a result of bird collisions with transmission towers. The USFWS has compiled evidence that higher mortality rates do occur at towers greater than 200 feet aboveground and at towers that are lit with navigational warning lights. The towers proposed for construction would be less than 75 feet in height with no guy wires or navigational lights.

4.2.2.3 No Action Alternative

Implementation of this alternative would not result in any loss of wildlife habitat.

4.2.3 Fish

Implementation of the proposed action would have no impact on fish habitat. The potential for increased stream sedimentation due to construction activities is low because no fish streams are located in close proximity to the summit areas.

4.2.4 Threatened or Endangered Species

No known threatened or endangered species inhabit the proposed project areas and, therefore, these species would not be impacted by proposed action or the no action alternative.

4.3 Cultural and Historical Resources

Two of the proposed TIS sites have been surveyed for cultural resources (SR 7 and SR 9) and no resources were identified. Four of the remaining sites were deemed by the land managers to have a low likelihood of cultural resources (FR 1, FR 2, SR 8, and NR 8) due to their elevations (above 6,000 feet) and terrain (step and rocky). The remaining site, FR, will have Phase 1 cultural resource survey conducted if it is determined by the land managers to be appropriate prior to any construction. In addition, if during construction there is any finding of archeological evidence, a qualified archeologist would evaluate the site prior to any further disturbance.

4.4 Recreational Resources

4.4.1 As previously discussed, all of the seven proposed TIS sites are on prominent ridge tops and most have extensive unobstructed views for 360 degrees. Four sites are near Wild and Scenic River corridors that are popular boating and recreation areas. All of the proposed TIS sites are in areas that are designated as high value recreation areas. The main source of impacts to recreation resources would be from noise associated with helicopter flights.

4.4.2 During construction, up to four flights per day could occur. These flights would take place during summer months when most recreation is non-hunting related. There would be the potential for some noise disturbance as described in Section 4.1.3 which could result in temporary disturbance to boaters and hikers in the area. This disturbance would be temporary in nature. Post construction, a similar type of disturbance could occur during one of the two maintenance flights per year.

4.5 Subsistence Resources

Subsistence activities such as hunting, fishing, or berry picking are typically not conducted in areas associated with the proposed TIS sites. The elevations and terrains do not provide suitable sites for subsistence activities. It is not expected that construction and operation of these sites would significantly impact subsistence activities.

4.6 Environmental Justice

4.6.1 Executive Order (EO) 12898, *Environmental Justice in Minority Populations and Low-Income Populations*, was issued by President Clinton on 11 February 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 US Air Force must conduct an environmental justice analysis of all potential impacts that may result from the proposed actions.

4.6.2 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 US Air Force.

4.6.3 The proposed TIS sites are on public lands in remote locations. The closest towns are small villages at least 10 miles away. None of the nearby villages exhibit characteristics of low-income or minority populations that are not exhibited in rural Alaska population as a whole.

4.6.4 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.

4.7 Cumulative Impacts

4.7.1 A cumulative impact is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Individual actions may result in minor impacts, but collectively may result in significant impacts from actions taking place over a period of time.

4.7.2 Cumulative impacts associated with the construction and expansion of military airspace, facilities, and training have been addressed in previous environmental documents. These documents include *Alaska Military Operations Areas-EIS* (US Air Force 1995); *Alaska Army Lands Withdrawal Renewal-Final Legislative EIS, US Army, 1998; Ft. Greely Proposed Resource Management Plan and Final EIS, U.S.D.I., Bureau of Land Management, 1989; Ft. Greely Integrated Natural Resources Management Plan and Environmental Assessment 1998-2002, US Army Alaska, 1999*; *Fort Wainwright Resource Management Plan and Final EIS, U.S.D.I., Bureau of Land Management, 1989; Integrated Natural Resources Management Plan 1998-2002, US Army Alaska Volume 3, Fort Wainwright;* and *Integrated Natural Resources Management Plan, Eielson Air Force Base, 1998.* The lands covered by these documents are mainly lands that have been withdrawn for military use in Alaska. The cumulative impact discussions in these documents have arrived at the conclusion that significant cumulative impacts from military activities have not occurred in the state of Alaska.

4.7.3 The lands on which the currently proposed facilities will be sited are not lands withdrawn for military purposes. The lands are a combination of federal (BLM) and state (Department of Natural Resources) managed lands. They are, however, contiguous with existing military withdrawn lands that have already experienced impacts from activities and facility construction similar to that being proposed in this EA. The cumulative impact analyses that have been completed for the military withdrawn lands as part of the NEPA documents listed in Section 4.7.2 have all concluded that no significant cumulative impacts have resulted from those actions. The actions currently proposed would result in minor impacts at the seven proposed TIS facility sites for a total acreage impact of less than 2 acres. These activities would not likely result in significant cumulative impacts.

4.8 Unavoidable Adverse Impacts

The unavoidable impacts from implementation of these actions would be the disturbance of upland soils during construction of facility foundations. Some visual impacts to the landscape with the addition of TIS facility structures would exist for as long as they were in place. This will be mitigated to some extent by painting the facilities colors that would blend with the background.

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

Very little, if any, long-term loss of productivity would result from construction of the proposed TIS facilities. Short-term benefits, however, would be significant. Installation of additional facilities would extend the coverage capabilities that presently exist in portions of the MOAs.

4.10 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term. Irretrievable commitments are those that are lost for a period of time. There are no identifiable irreversible commitments associated with the proposed action. The only irretrievable commitments may be the loss of existing vegetation in those areas that must be cleared for the installation of the TIS facilities.

4.11 Mitigation

The proposed project would incorporate standard, best management practices designed to mitigate impacts to the environment. In addition, various mitigation measures were recommended by land managers for a specific proposed TIS facility location.

Table 4-1 – Wildlife/Habitat Issues and Recommended Mitigation

Site Location	Wildlife/Habitat Issues	Mitigation
FR	Nelchina caribou herd winter range, spring and summer moose range, Trumpeter Swan nesting habitat nearby, migratory bird obstruction from monopole towers.	No tower lights, facilities painted non-obtrusive color, all helicopter flights to and from site from the north in a direct line, and aircraft will maintain minimum 1000 feet above ground level (AGL).
FR 1	Nelchina caribou winter range, Delta caribou calving nearby, Trumpeter Swan nesting along Susitna River, migratory bird obstruction from monopole towers.	No tower lights, facilities painted non-obtrusive color, no flying in Susitna River corridor May 1 to August 31, approach site from minimum 1,300 feet AGL.
FR 2	Nelchina caribou calving ground, Dall's sheep range, migratory bird obstruction from monopole towers.	No tower lights, facilities painted non-obtrusive color, no activity May 1 to June 15, maintain minimum 1,000 feet AGL for all helicopter flights.
SR 7	High use recreational area, facilities will create visual impact.	No tower lights, facilities will be painted a neutral color to reduce visual impact.
NR 8	High use recreational area, facilities will create visual impact.	No tower lights, facilities will be painted a neutral color to reduce visual impact.
SR 8	High use recreational area, facilities will create visual impact.	No tower lights, facilities will be painted a neutral color to reduce visual impact.
SR 9	High use recreational area, facilities will create visual impact.	No tower lights, facilities will be painted a neutral color to reduce visual impact.

5.0 List of NEPA Process Participants

5.1 List of Agencies and Persons Consulted

Person	Agency	Information
James Nolke	USAF, 354th Civil Engineering Squadron Environmental Planning Eielson AFB AK, phone 907-377-3365	Environmental
Steven Curley	USAF 354th Combat Training Squadron Eielson AFB AK, phone 907-377-1400	USAF Operations
Capt Aubrey Ireland	USAF 354th Combat Training Squadron Eielson AFB AK, phone 907-377-1400	USAF Operations
Sarah Conn	Northern Alaska Ecological Services U.S. Fish and Wildlife Service Fairbanks AK, phone 907-456-0103	Wildlife Biology
Judith Bittner	State Historic Preservation Office Anchorage AK, phone 907-269-8718	Cultural and Historical Resources
Bruce Rogers	Bureau of Land Management Glennallen Field Office Glennallen AK, phone 907-822-3217	Natural Resource Information
Jobe Chakuchin	National Park Service Yukon-Charley Rivers National Preserve Fairbanks AK, phone 907-455-0629	Resource Information
Thomas Liebscher	National Park Service Yukon-Charley Rivers National Preserve Fairbanks AK, phone 907-455-0620	Resource Information
Robert Layne	Alaska Department of Natural Resources, Fairbanks AK, phone 907-451-2735	Lands Division, Permits
Frank Maxwell	Alaska Department of Natural Resources Fairbanks AK, phone 907-451-2728.	Lands Division, Permits
Gordon Cantwell	Native Village of Cantwell	DoD Gov't. to Gov't. Consultation
William Miller	Village of Dot Lake	DoD Gov't. to Gov't. Consultation
Isacc Juneby	Native Village of Eagle	DoD Gov't. to Gov't. Consultation
Darin Gene	Native Village of Gakona	DoD Gov't. to Gov't. Consultation
Ben Saylor	Healy Lake Village	DoD Gov't. to Gov't. Consultation

Lorraine Titus	Northway Village	DoD Gov't. to Gov't. Consultation
Jerry Isaac	Tanacross Village Council	DoD Gov't. to Gov't. Consultation
Donald Adams	Village of Tetlin	DoD Gov't. to Gov't. Consultation

6.0 Bibliography

Alaska Regional Profiles Yukon Region, Volume 6. University of Alaska, Arctic Environmental Information and Data Center, 1976.

Alaska's Wildlife and Habitat. State of Alaska Department of Fish and Game, 1973.

Freeman, L.H. *Guidelines for NEPA Documents.* Franklin Quest Co., Shipley Associates Division, Bountiful, Utah, 1995.

Lawler, James P. et. al. *The Effects of Military Jet Overflights on Dall's Sheep in Interior Alaska, Report to the Department of the Air Force,* 2004.

Resources of Alaska – A Regional Summary-Joint Federal State Land Use Planning Commission, 1974.

Swanson, David K. *Ecological Units of Yukon-Charley Rivers National Preserve, Alaska, National Park Service*, 2001.

Environmental Impact Statement of Alaska Military Operations Areas, Volumes 1-3, US Air Force, 1995.

U.S. Army Alaska, Department of the Army, 1998. *Alaska Army Lands Withdrawal Renewal.* Final Legislative Environmental Impact Statement, Volumes 1-2.

Viereck, L.A.; Dyrness, C.T.; Batten, A.R.; and Wenzlick, K.J. *The Alaska Vegetation Classification.* US Department of Agriculture, US Forest Service, 1992.

7.0 Glossary

Erosion – The wearing away of soil or organic matter by flowing water or wind.

Loess – Unstratified deposits of silt and loam that are primarily deposited by the wind.

National Environmental Policy Act – Federal law requiring impacts that might result from a proposed action by a federal agency be addressed in a systematic way.

Mitigate – To reduce or negate the effects of an environmental disturbance or impact.

MOA – Military Operations Air Space.

Permafrost – Permanently frozen subsoil.

Physiographic – A region that contains the same general physical characteristics.

Recharge – Surface water which percolates through porous soils to become part of the ground water.

TIS - Tracking and Instrumentation Subsystems.

Upland – The higher parts of a region or tract of land.

Wetlands – Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions.

YMDS – Yukon Measurement and Debriefing System (see EA for description).

8.0 National Historic Preservation Act, Section 106 Consultation

11 January 2006

Jim Nolke
354 CES/CEVP
2310 Central Ave Ste 100
Eielson AFB AK 99702-2299

Judith E. Bittner
State Preservation Officer
550 W 7th Avenue Suite 1301
Anchorage AK 99501-3565

Dear Ms Bittner

Eielson AFB is proposing to expand their Yukon Measurement and Debriefing System (YMDS) in the vicinity of the Yukon and Fox Military Operating Air Space located in the general vicinity of Paxson and Eagle, Alaska respectively. The YMDS will be expanded by constructing small instrument stations (TISs) at seven new sites. Each TIS will consist of a small instrument shed, an antenna/tower, and two propane fuel tanks and will have a footprint of less than 500 square feet. These sites are on ridge tops or peaks whose elevations are in excess of 5,000 foot above sea level and for the most part have rock/boulder substrates with little or no vegetation. One of these sites is an existing BLM communication relay site. I have attached a list of the sites, their coordinates, and the current landowners.

We have been in contact with the land owners of these sites which includes the Bureau of Land Management, Yukon-Charley Preserve (U.S. Park Service), and the State of Alaska. We are in the process of project scoping and gathering what resource information is available with respect to these locations. An important part of this process will be to see what cultural resource information exists. In the event no information exists for a given sight and it is felt that information is needed to satisfy Section 106 consultation with your office, we will conduct a Phase 1 cultural resource survey of these sites. In the meantime, if your office has on file any information with respect to these sites, we would appreciate hearing from you.

Sincerely,

Jim Nolke

Jim Nolke
Environmental Planning Manager

TIS Sites

Site Name	USGS Quad	GPS Latitude	GPS Longitude	Land Owner
SR 7	Eagle C-2	N 64 44.327	W 141 46.305	BLM
SR 8	Eagle C-6	N 64 31.960	W 143 42.430	BLM
SR 9	Eagle A-3	N 64 01 33.2	W 142 18 56.2	State of AK
NR 8	Eagle D-4	N 64 51.851	W 142 34.384	BLM
FR	Gulcana D-6	N 62 58 28.5	W 146 48 52.6	BLM
FR 1	Healy B-1	N 63 15 38.9	W 147 15 16.4	BLM
FR 2	Talkeetna Mt C-3	N 62 33 48.8	W 148 20 09.0	BLM

9.0 Scoping Comments

RECREATION AND VRM COMMENTS

These communication sites will impose minimal impacts upon recreational opportunities and therefore I offer no further comments associated with the recreational portion of the analysis of this EA.

From a Visual Resource Management (VRM) perspective all sites fall within Classes III or IV as defined below per BLM-VRM nationally designated classes within the Glennallen Field Office (GFO) planning area.

FR1: Class IV
FR: Class III
FR2: Class IV
SR7: managed by the Northern District Office

Under these two classes the VRM objectives are as follows:

Class III Objectives:

- To partially retain the existing character of the landscape.
- Level of change to the landscape could be moderate.
- Management activities may attract attention, but should not dominate the view of the casual observer.
- Change should repeat the basic elements found in the predominant natural features of the landscape—form, line, color and texture.

Class IV Objectives:

- To provide activities that require major modifications of the landscape.
- Level of change to the landscape can be high.
- Management activities may dominate the view, the major focus of attention.
- Note—still minimize impacts through location and design by repeating form, line, color and texture.

Findings and conclusions: The communication sites fall within the scope of VRM class objectives and are acceptable management activities for the designated sites as proposed. The distance from any "high use" site, road or trail will not attract attention nor dominate the view of the casual observer. However, these sites will not repeat the basic elements (form, line, color or texture) found in the predominant natural landscape given the engineering nature of the project structures and federal safety regulations that require specific colors for high altitude communication towers. If these sites were located closer to high use sites, roads or trails, under the same class this analysis would recommend relocation because they do not meet the basic objective elements.

Will Runnoe
Recreation Planner
2/3/06

Cultural Comments for Air Force Communication Sites

Site Names	Comments
SR7	I was informed by Robin Mills, NFO Eastern Zone archaeologist, that there are no cultural resource concerns for this location.
FR	This location on Round Mountain is north of Ben French's Cabin (49 GUL 269), which is a feature along the historic West Fork Trail from Sourdough to Valdez Creek. This trail was used by miners at Valdez Creek to transport mining equipment and supplies prior to the completion of the Alaska Railroad's line to Cantwell in 1917 (Dessauer and Harvey 1980:23,115-120). An ATV trail exists between 49 GUL 269 and the top of Round Mtn., a 4797 ft mountain that is the current project area; this trail may be the

West Fork Trail and be associated with additional pre 1917 historic features. Additionally, the majority of early historic mining trails followed earlier native trails; the West Fork Trail is likely to be one of these trails since, the miners followed a native guide during their first use of this trail in 1904 (Dessauer and Harvey 1980:22). It is therefore recommended that this ATV trail and the top of Round Mtn. be investigated by a qualified archaeologist for any historic or prehistoric remains associated with use of these trails.

FR1 This is a peak, 6092 ft high, several miles north of the Valdez Creek mining district. There are no reported cultural resources within a mile of this location and it is unlikely to affect any heritage resources.

FR2 This is a 6500 ft. peak in the Talkeetna mountains. There are no reported cultural resources within a mile of this location and it is unlikely to affect any heritage resources.

SR8 & NR8 The height of these mountain peaks (above 5,000 feet) makes them unlikely to contain cultural resources and do not require any additional cultural resource work.

John Jangala
GFO Cultural Resources specialist

Wildlife / Habitat Issues with Proposed Military Comm Sites within GFO

Proposed TIS Locations	General area description	quad / GPS locatio	Proposed structure	Frequency of Use	Wildlife / Habitat Issues	Recommended Mitigation
FR	near Denali Hwy, 40 miles west of Paxson above Maclaren River on mountaintop at 4,759 feet elevation	Gulkana D-6; N62 58 28.5 W 146 48 52.6	8-ft X 8-ft equipment shelter, two 500-gallon propane storage tanks, 75-foot monopole, and 60-foot diameter helipad	all access by helicopter; 2-week construction period; routine maintanence once per month	•Nelchina caribou herd traditional winter range •spring and winter range for moose •dispersed TRSW nesting habitat within 1 mile along Maclaren River •in-flight obstruction for birds	No site specific mitigation other than "common to all" mitigation.
FR 1	Valdez Creek area north on Rusty Hill ridgeline, overlooking the Susitna River; elevation 6,225 feet	Healy B-1; N 63 15 38.9 W147 15 16.4	8-ft X 8-ft equipment shelter, two 500-gallon propane storage tanks, 75-foot monopole, and 60-foot diameter helipad	all access by helicopter; 2-week construction period; routine maintanence once per month	• Nelchina caribou traditional winter range •Delta caribou herd calving within 2 miles northwest •adjacent to moose winter range •concentrated use of TRSW nesting habitat within 1 mile on Susitna River •in-flight obstruction for birds	•avoid flying within Susitna River corridor to access comm site from May 1 to August 31 to avoid disruption of TRSW nesting and brood-rearing activities; maintain at least 1,300 feet AGL (1/4 mile vertical buffer) when crossing perpendicular to Susitna River during this time.
FR 2	unnamed mountain in western Talkeetna Mountains at elevation 6,629	Talkeetna Mountain C-3; N 62 33 48.8 W 148 20 09.0	8-ft X 8-ft equipment shelter, two 500-gallon propane storage tanks, 30-foot monopole, and 60-foot diameter helipad	all access by helicopter; 2-week construction period; routine maintanence once per month	•within Nelchina caribou calving grounds •near Dall sheep range •in-flight obstruction for birds	•recommend finding an alternate comm site location outside of NCH calving area •otherwise, no construction activity from May 1 to June 15 to protect caribou calving

*FAA requires all towers greater than 199 feet tall or located within 3.8 miles (6.1 km) of airports and near major travel corridors to be equipped with warning lights.

Mitigation Common to All Proposed Comm Sites

•recommend co-locating proposed comm tower at existing tower site or other structure, if possible

•avoid the installation of lights on towers*

•security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site

•towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use

•all construction and maintenance-oriented aircraft will use direct flight paths to and from comm site and maintain at least 1,000 feet AGL in flight (per EARMP ROP-F&W-b3)

Kari Rogers- GFO Wildlife Biologist 06 February 2006

10.0 Public Notice

USAF ANNOUNCES ENVIRONMENTAL ASSESSMENT

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

Extend the coverage of the Yukon Measurement and Debriefing System in the Yukon and Fox Military Operating Air Spaces by the installation of 7 new Tracking and Instrumentation Subsystems (TIS). These facilities would be comprised of a 30 to 50-foot monopole tower, a 10-foot by 10-foot instrument shed, and two 500-gallon propane fuel tanks.

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 June 27, 2006. To get a copy of the EA, to comment, or for more information contact Jim Nolke, Eielson AFB Environmental Flight, at (907) 377-3365, or by mail at 354 CES/CEVP, 2310 Central Ave, Ste 100, Eielson AFB, AK 99702-2299.

This public notice appeared in the Fairbanks News-Miner on 26 May 2006.

DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

17 Jul 06

MEMORANDUM FOR 354 CES/CEVP

FROM: 354 FW/JA

SUBJECT: Environmental Assessment – FONSI for new Tracking and Instrumentation Subsystems in Fox and Yukon MOAs

1. I have reviewed the proposed Environmental Assessment (EA), Finding of No Significant Impact and Finding of No Practical Alternative for the construction of seven new Tracking and Instrumentation Subsystems (TIS) in portions of the Fox and Yukon MOAs, to ensure compliance with 32 C.F.R. Part 989, as incorporated by reference in AFI 32-7061, *The Environmental Impact Analysis Process*. These TIS facilities consist of a 30 to 70-foot monopole antenna, an 8 by 8-foot equipment shelter, and a helicopter landing area. I find the assessment to be legally sufficient.

2. If you have questions, please feel free to contact me at 377-4114.

SUZETTE D. SEUELL, Maj, USAF
Deputy Staff Judge Advocate