ENVIRONMENTAL ASSESSMENT
for the
UPGRADE AND CONSTRUCTION OF THE EIELSON AIR FORCE BASE RAIL LINE

Eielson Air Force Base, Alaska

Prepared by:

Tutka, LLC
620 Whitney Road, Suite B
Anchorage, AK 99501

Prepared for:

354th Fighter Wing
Eielson Air Force Base, Alaska

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)
and
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)
for the
Upgrade and Construction of the Eielson Air Force Base Rail Line
Eielson AFB Air Force Base, Alaska

NAME OF PROPOSED ACTION. Upgrade and Construction of the Eielson Air Force Base (Eielson AFB) Rail Line.

The Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) and its implementing regulations (Council on Environmental Quality, 40 CFR 1500-1508). The Finding of No Practicable Alternative (FONPA) was prepared in accordance with the Secretary of the Air Force Order 791.1 and Executive Order 11990 (May 24, 1977), "Protection of Wetlands."

DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE.

The Proposed Action would support fuel needs based on Eielson AFB's Operations Plan (OPLAN). The OPLAN requires a fuel off loading capability to support a daily delivery requirement in an austere arctic environment. In order to support the mission of Eielson AFB, a viable secondary means of fuel supply is necessary. Eielson AFB is currently only capable of receiving a limited amount of fuel by rail car and truck and both are currently inadequate to support the required delivery rate as outlined in the OPLAN. The affected rail line extends from the Central Heating and Power Plant (CHPP) to the off load fuel area (Mullins Pit Road) which has not been upgraded since 1950 and is severely degraded. The rail line in this area is a mixture of 70, 75, and 90 pound rail line joined by compromising bars to splice the different lane weights. Over 300 Linear Meters (LM) of rail line south of E-11 has been ruled unserviceable, reducing the capacity to receive railcar shipments in large quantity. Additionally there is only one line near the E-2/E-11 fuel farms for receiving railcars. A second line, complete with switches and road crossings, is required to store and transfer railcars while shipments are being unloaded and delivered. This second line would make it possible for Eielson AFB to receive deliveries of up to 50 railcars and meet their re-supply rate and mission goal. At present if a 50 railcar shipment were received, railcars would be backed up at the power plant requiring huge amounts of man-hours in railcar shuffling. The continuous transfer of cars over the undersized rail and rotted ties would likely damage or destroy a compromising bar resulting in a potential spill, an inoperable rail, and no secondary re-supply means.

By repairing sections of the existing rail line and construction of a secondary line, the Proposed Action would accomplish the purpose and need to meet mission objectives as outlined in the OPLAN. Both the pipeline and the secondary means of supply via rail car must be available to successfully meet the OPLAN requirements.

Under the No Action Alternative, the existing rail line would not be repaired and construction of new rail line and catwalk would not occur. Eielson AFB would continue to operate with an

unreliable rail system which is currently inadequate to support the required delivery rate as outlined in the OPLAN.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES.

This EA provides an analysis of the potential environmental consequences under the Proposed Action and No Action Alternative. Environmental resources evaluated in detail for potential environmental consequences were land use and visual resources, noise, cultural resources, infrastructure, physical resources, hazardous materials and waste management, biological resources, and air quality. According to the analysis, implementation of the Proposed Action would not result in significant adverse impacts to human health of the natural environment. A summary of the potential impacts of the Proposed Action is presented below by resource category.

Physical Resources

Geology/Soils: The Proposed Action would result in minor impacts to soils. Impacts on soil would be excavation of approximately 46,224 cubic yards (CY) of overburden and 59,994 CY of existing ballast for the proposed new rail line construction and improvements. The overburden consists primarily of organic material and unconsolidated silty sands and gravels, while the existing ballast consists of crushed rock substantially fouled by vegetation and organic materials. Both the excavated overburden and the old ballast could be reused as fill material at various sites on Eielson AFB. A layer of approximately 165,228 CY of new, crushed rock ballast would replace the existing ballast and the excavated overburden.

Floodplains: The Proposed Action would result in rail renovation on 0.16 acres of land located within the 100-year floodplain. No new construction is proposed to occur within the 100-year floodplain. The Proposed Action would result in low risk and low impact, as the rail line renovation will occur on track already built upon the 100-year floodplain.

Wetlands: The Proposed Action would result in new rail construction and rail renovation on approximately 0.54 acres of wetlands. The Proposed Action will have a low impact on wetland loss and mitigation would occur to avoid, reduce, or compensate for any adverse impacts from loss of wetland vegetation.

Air Quality: Short-term air quality impacts would originate from temporary construction activities while long-term impacts could develop from increased rail operations of the Proposed Action.

Groundwater/Surface Water: There is low potential of groundwater and surface water impacts during construction activities and operational activities.

Infrastructure: The Proposed Action would improve the safety and efficiency of fuel delivery by rail car to Eielson AFB. As an additional benefit, the improved track operations, to include rail car staging and maneuvering, would increase the safety and efficiency of coal deliveries to the CHPP; effectively enhancing the mission at Eielson AFB.

Noise: Noise impacts associated with implementation of the Proposed Action would consist of short-term construction noise and long-term intermittent noise from the operation of locomotives on the rail line. Noise impacts would be less than significant when compared to nearby flight line operations.

Contaminated Sites: There are contaminated sites identified near the area of the Proposed Action. The majority of contamination is petroleum, oils, and lubricants (POL). The sites near the Proposed Action are under a current remediation and/or monitoring program and with pre-

emptive measures in place, the potential for impacts from contaminants would be less than significant.

Biological Resources
Vegetation: The Proposed Action would result in the loss of 0.57 acres of vegetation consisting primarily of deciduous trees and shrubs resulting in minor impacts.

Wildlife Resources: The Proposed Action would result in the loss of a small amount of bird habitat with the clearing of the vegetation. There may be the possibility of minor disruptions to wildlife movement in the area during the construction phase. Increased activities such as operation of heavy equipment could result in temporary displacement of wildlife. However, these impacts would be limited in duration and scope.

Threatened and Endangered Species: Based on the most recent consultation with USFWS, no impacts to threatened and endangered species would result from any of the alternatives considered in this EA.

Cultural and Historical Resources: Based on State Historic Preservation Office (SHPO) correspondence, a concurrence of "No Historical Properties Adversely Affected" by the Proposed Action was received. Under any circumstances where cultural resources are discovered on base lands, all activities would cease until a cultural resource specialist evaluated the find.

CONCLUSION.

Finding of No Significant Impact: On the basis of the findings of the EA, with the incorporation of best management practices for resources described herein, as well as incorporation of specific regulatory permit requirements, implementation of the Proposed Action would not result in significant adverse impacts to human health or the natural environment. Therefore, a FONSI is warranted, and preparation of an Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969 (Public Law 91-190) is not required.

This FONSI is based on the contractor-prepared EA, which has been evaluated by the U.S Air Force. The EA adequately and accurately discusses the environmental issues, proposed mitigation, and impacts of the Proposed Action and provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required.

Finding of No Practicable Alternative: Pursuant to Executive Order 11990, *Protection of Wetlands*, the authority delegated in the Secretary of the Air Force Order 791.1 and the written regulations accomplished pursuant to the Order, and in consideration of the above information, there is no practicable alternative to implementing the Proposed Action in minimizing potential harm to wetlands.

The U.S. Air Force, as represented by Eielson AFB, a federal agency during the development of the EA concurs with the EA findings and adopts the EA and FONSI/FONPA for military use.

JAMES N. POST III
Brigadier General, USAF
Commander

14 May 2012
Date

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September 2011

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The U.S. Air Force, as represented by Eielson AFB, a federal agency during the development of the EA concurs with the EA findings and adopts the EA and FONSI/FONPA for military use.

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Signature Date

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FIGURES

APPENDICIES

1.0 PURPOSE AND NEED OF A RAIL LINE AT EIELSON AIR FORCE BASE

The United States Air Force (USAF) has prepared this Environmental Assessment (EA) to analyze the potential consequences associated with the Proposed Action of repairing an existing rail line as well as constructing a new rail line. The Proposed Action would support fuel needs based on Eielson Air Force Base's (Eielson AFB) Operations Plan (OPLAN). The OPLAN requires a fuel off loading capability to support a daily delivery requirement in an austere arctic environment.

1.1 Background

Eielson AFB is located in central Alaska within the Fairbanks North Star Borough (FNSB), approximately 120 miles south of the Arctic Circle and 23 miles southeast of Fairbanks. Eielson AFB is located on the Tanana River Valley on a low, relatively flat, floodplain terrace that is approximately two miles north of the active river channel (Figure 1-1, Project Location and Figure 1-2, Area Map).

The 354th Fighter Wing is the host unit at Eielson AFB and is assigned to the 11th Air Force, headquartered at Elmendorf AFB in Anchorage. The wing supports operations, maintenance, mission support, and medical group functions and is host to ten tenant units.

The primary mission of Eielson AFB is to support the launch, recovery, and maintenance of aircraft. A major component of this mission is providing fuel for aircraft. Eielson AFB maintains a storage capacity of more than 20 million gallons of aircraft fuel, and they must be capable of resupplying fuel at a delivery rate as outlined in the OPLAN.

1.2 Purpose

The purpose for the Proposed Action is to meet the OPLAN's capability of storing more than 20 million gallons of aircraft fuel while maintaining the required daily resupply rate. Currently Eielson AFB is supplied with fuel via a pipeline with direct connection to a refinery located in North Pole, Alaska. If the fuel line were to be damaged, Eielson AFB would not be able to meet their primary mission to fuel aircraft at the required supply rate.

In October and November of 2002, the interior of Alaska had two significant earthquakes measuring 6.7 and 7.9 on the Richter scale. The latter quake damaged the Alaska Pipeline support system which required the pipeline to be shut down several days for repair. The likelihood that another natural disaster could occur and damage the current supply line from North Pole to Eielson AFB is high.

1.3 Need

In order to support the mission of Eielson AFB, a viable secondary means of fuel supply is necessary. Eielson AFB is currently only capable of receiving a limited amount of fuel by rail car and truck and both are currently inadequate to support the required delivery rate as outlined in the OPLAN. By repairing sections of the existing rail line and construction of a secondary line, the Proposed Action would accomplish the purpose and need to meet mission objectives as outlined in the OPLAN. Both the pipeline and a secondary means of supplying fuel by rail must be available to successfully meet the OPLAN requirements.

Figure 1-1, Project Location

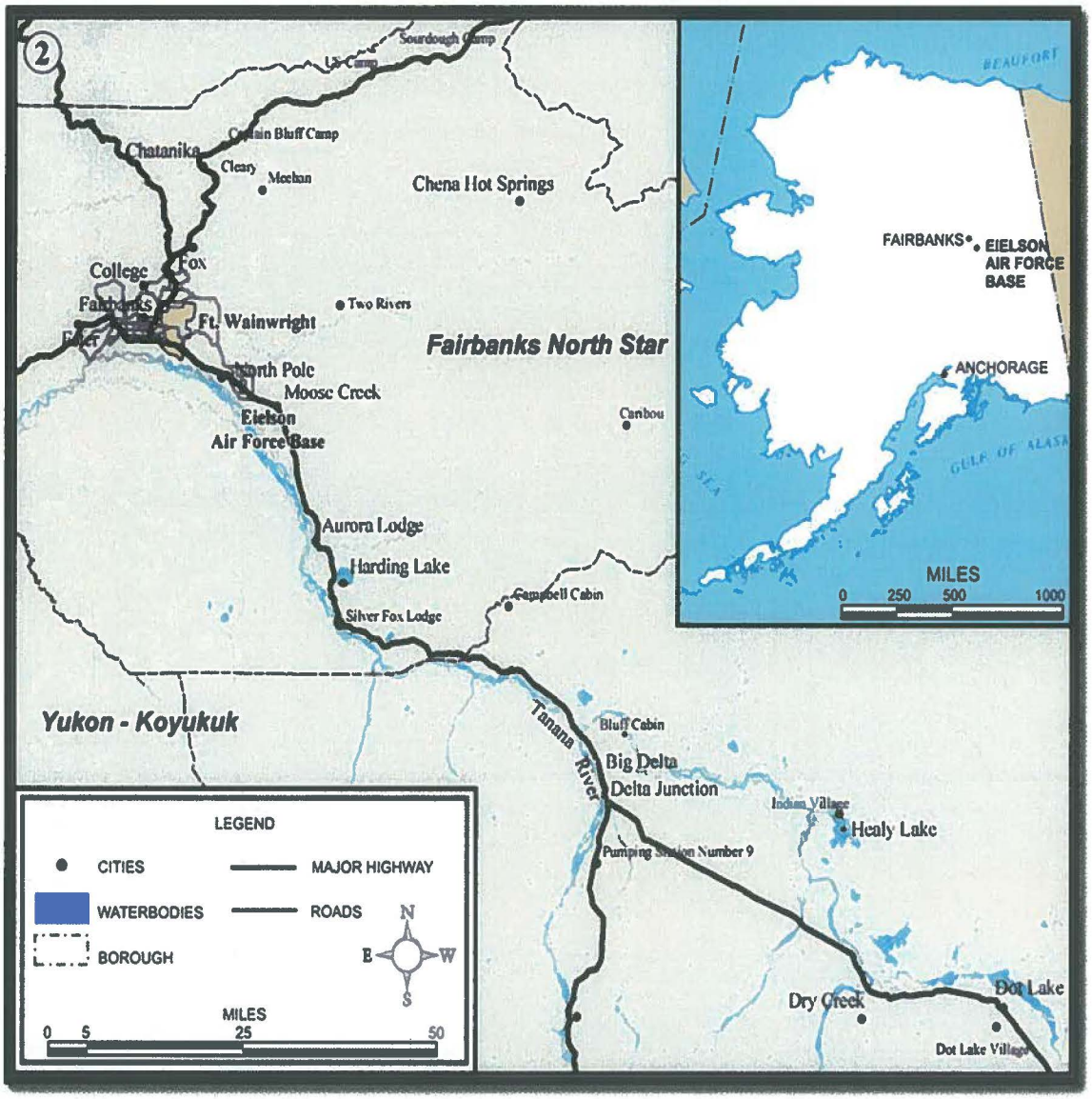
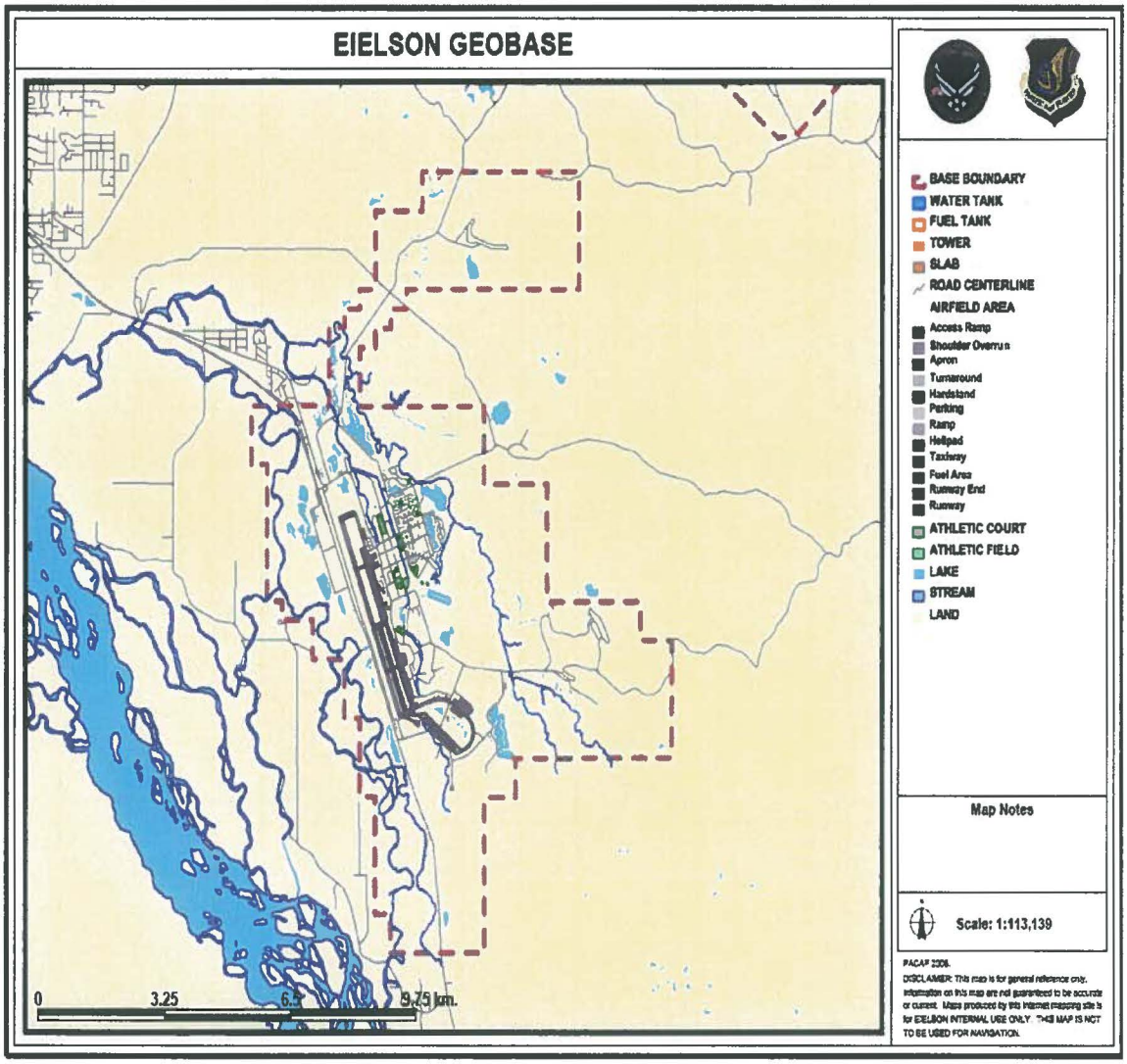


Figure 1-2, Area Map



1.4 Decision to be Made

As required by Title 32 of the Code of Federal Regulations (CFR) Part 989, the Environmental Impact Analysis Process (EIAP) will be used to determine the potential environmental consequences of constructing the proposed rail line for secondary fuel supply. This EA is intended to satisfy these requirements.

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.

The EA, a draft FONSI (if applicable), and all other appropriate planning documents will be provided to 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 will be published in accordance with 32 CFR 989.15(e)(2). The EA and the draft FONSI will be made available to interested agencies and the public. All interested parties will have sufficient time to comment on the decision to the Air Force. If, at the end of the public comment period, no substantive comments are received, the decision maker will sign the FONSI.

Two Executive Orders (EOs), 11988 (*Floodplain Management)* and 11990 (*Protection of Wetlands)*, require the heads of federal agencies to find that there is no practicable alternative before the agency takes certain actions impacting wetlands or floodplains. The proposed action would impact the 100-year floodplain and jurisdictional wetlands. To address this requirement, the Secretary of the Air Force's designated agent, will sign a document that addresses the issue of floodplains and wetlands that may be associated with actions the Air Force proposes to take. This document, known as a Finding of No Practicable Alternative (FONPA), will state which alternative, the proposed action or the no action alternative, will be selected as the appropriate course of action. The FONPA will be combined with the FONSI into one document. It will contain documentation that there is no practicable alternative to the proposed action and that all practical measures to minimize harm to floodplains and wetlands have been incorporated into the project design. It will also state whether any mitigation will be required.

1.5 Scope of the Environmental Assessment

The focus of this EA is the repair of an existing rail line and construction of a new rail line to support fuel needs at Eielson AFB.

Relevant issues raised from various agencies in the scoping meeting are listed in this section and discussed in detail in Sections 2 and 3. Potential issues were determined to be relevant to the analysis of the proposed action if they fell within the scope of the proposed action, if they suggested different actions or mitigation, or if they otherwise influenced the decision on the proposed action. Public scoping meetings normally carried out for NEPA projects will not occur for this project since the project area is located entirely on a military base and will have little to no impact on the surrounding area. A list of agencies contacted and consulted is included in Section 6. This EA focused on the following categories:

- Floodplains: Under the proposed action a portion of the rail line for secondary fuel supply would be located within the 100-year floodplain.

- Wetlands: Under the proposed action, a portion of the rail line extension would impact wetlands.
- Air Quality: Fairbanks North Star Borough (FNSB) is in a maintenance area for carbon monoxide (CO) and non-attainment for particulate matter of 2.5 microns or less ($PM_{2.5}$). Construction of the proposed action is outside of the maintenance area for CO and the non-attainment boundary for the $PM_{2.5}$.
- Contaminated Sites: Activities conducted at Eielson AFB throughout its history have generated areas of known contamination, which have been identified through Air Force contractor studies. Contaminated sites include: unlined inactive landfills, shallow trenches used for disposal of fuel tank sludge, drum storage sites, and numerous other disposal or spill areas. Portions of the proposed project area are concurrent with areas identified under a Federal Facilities Agreement signed by representatives of the Air Force, the State of Alaska, and the Environmental Protection Agency (EPA).
- Cultural and Historical Resources: Based on State Historic Preservation Office (SHPO) correspondence, it was recommended that two Alaska Heritage Resources Survey (AHRS) sites and the rail line be evaluated for eligibility for inclusion to the National Register of Historic Places (36 CFR 800.4) and the nature of project effects on any eligible historic properties be assessed (36 CFR 800.5). It was determined the proposed action would not adversely affect the two AHRS sites or the rail line.

1.6 List of Federal Permits, Licenses, and Entitlements

The Clean Water Act, 33 U.S.C. §1251 et. seq. Sections 401 and 402 requires a state issued permit, the Alaska Pollutant Discharge Elimination System (APDES) permit, and compliance with provisions of permits regarding discharge of effluents to surface waters and additional wetland protection. A Storm Water Pollution Prevention Plan (SWPPP) would need to be developed and a Notice of Intent (NOI) would need to be filed prior to construction in accordance with the APDES General Permit for Discharges from Large and Small Construction Activities AKR100000. A Section 404 permit is also required under the Clean Water Act (33 USC 1344, Section 404) when wetlands are affected by the discharge of dredged or fill material or construction activities. A Section 404 permit will be submitted to the United States Army Corps of Engineers (USACE) because a portion of the rail line extension will be impacting wetlands.

Executive Order (EO) 11988: Floodplain Management requires that where there is no practicable alternative to development in floodplains and wetlands, Federal agencies are required to prepare a floodplains and wetlands assessment and design mitigation measures. For floodplain involvement, Federal agencies must issue a Floodplain Statement of Findings.

EO 12088: Federal Compliance with Pollution Control Standards [43 FR 47707 October 17, 1978] requires Federal Agencies to consult with EPA and State Agencies regarding the best techniques and methods for the prevention, control, and abatement of environmental pollution. Hazardous Communication Standard [29 CFR 1910.1200] requires compliance to ensure that works are informed of all chemical hazards in the workplace and are trained to handle them.

Hazardous Materials Transportation Law [49 USC 5105127 et seq.] requires compliance with the requirements governing hazardous materials and waste transportation; applies primarily to the construction phase.

Migratory Bird Treaty Act [16 USC 703 et seq.] requires consultation to determine whether construction or operation of project facilities has any impacts on migrating bird populations.

NEPA [42 USC 4321 et seq. 40 CFR 1500-1508] and Air Force Instruction (AFI) 32-7066 and 32-7061, which directs all Federal agencies in the implementation of NEPA.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action, repair and construction to upgrade the existing rail line to include an off-loading structure; and the No Action Alternative (Alternative 1), continued use of the existing rail line. A summary of the potential environmental effects of both alternatives is also presented.

2.1 Proposed Action

Under the Proposed Action, the USAF would remove and replace substandard railroad track and provide new rail spurs needed to support daily fuel delivery requirement to support en route strategic aircraft and the Pacific Air Bridge Mission. At the current time, Eielson AFB's primary source of fuel is delivered via pipeline. If the pipeline becomes compromised or unavailable, and fuel is not delivered continuously, then the mission becomes impossible as there is no viable secondary means to resupply fuel that would meet the Air Force's mission.

The proposed action introduces a secondary means to supply fuel via railcar to meet mission goals and not disrupt trains delivering coal to the CHPP. Without the fuel line or railcar, Eielson AFB would deplete its fuel supply within a few short weeks. Eielson AFB would not be able to adequately resupply its existing fuel storage capacity should the fuel line be disabled. This is a redundant capability because both the pipeline and the railcar capability must be available to successfully meet the OPLAN requirements.

The affected rail line extends from the Central Heating and Power Plant (CHPP) to the off load fuel area (Mullins Pit Road) which has not been upgraded since 1950 and is severely degraded. The rail line in this area is a mixture of 70, 75, and 90 pound rail line joined by compromising bars to splice the different lane weights. Over 300 Linear Meters (LM) of rail line south of E-11 has been ruled unserviceable, reducing the capacity to receive railcar shipments in large quantity. Additionally, there is only one line near the E-2/E-11 fuel farms for receiving railcars. A second line, complete with switches and road crossings, is required to store and transfer railcars while shipments are being unloaded and delivered. This second line would make it possible for Eielson AFB to receive deliveries of 50 railcars and meet their re-supply rate and mission goal. At present if a 50 railcar shipment were received, railcars would be backed up at the power plant requiring huge amounts of man-hours in railcar shuffling. The continuous transfer of cars over the undersized rail and rotted ties would likely damage or destroy a compromising bar resulting in a potential spill, an inoperable rail, or no secondary re-supply means.

2.1.1 Upgrade Rail Line and Construction of Overhead Shelter

The proposed action consists of removing and replacing 3,048 Linear Meters (LM) of outdated substandard railroad track with new 115 pound (lb) rail, constructing 2,438 LM of new 115 lb secondary rail line to include road crossings and switches, and constructing a new off loading facility to support six railcars at E-11 to provide safety, power, and lighting to the catwalk fueling areas.

The removal and replacement sections would occur along the existing track. New rail construction would begin southwest of Spruce Lake, cross Quarry Road east of Thunderbolt Road, and continue parallel to Quarry Road, where it would intersect the existing rail east of Cargain Road, immediately west of the existing Petroleum, Oil, and Lubricant (POL) storage facility. The proposed overhead shelter, catwalk, and header would be constructed in front of the POL facility. New track construction would resume at the POL facility and continue east towards Mullins Pit Road, to the existing alignment with spacing of at least 15 feet (4.572 meters) between the center of the existing track to the center of the proposed track. At Mullins Pit Road, the track would follow the existing alignment where it turns south to Mullins Pit Road and would terminate just over 91 LM past the existing alignment with a wye and a switch. The Eielson AFB Rail Overview is provided in Figure 1-3, Project Action Area Overview.

The major proposed action elements are as follows:

- Provide a new siding and turnouts near the round house spur.
- Reconstruct existing track from existing wye through the ammo spur at the south end of the railroad track.
- Provide new track to correct crossing at Quarry and Cargain Roads.
- Provide new track to provide additional railcar storage capacity at E-11 and south to the munitions area.
- Provide catwalk and canopy at the E-11 offloading facility to enhance fuel offloading operations.
- Provide modifications to the fuel piping to accommodate the new rail configuration.

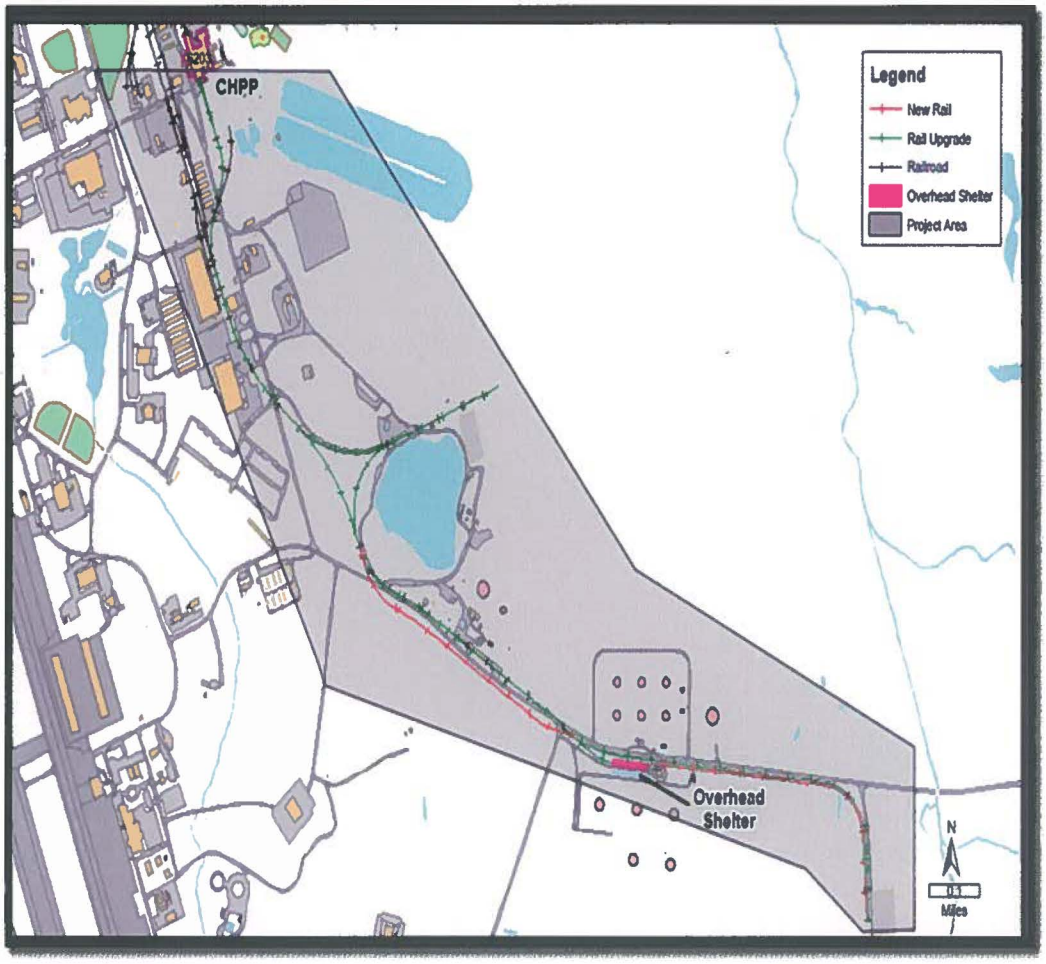
The construction of the proposed action would result in the removal of approximately 46,224 cubic yards (CY) of overburden and 59,994 CY of old ballast with the subsequent placement of approximately 165,228 CY of new ballast. If testing does not reveal the presence of contaminants, then the overburden and old ballast can be reused on base for fill material. The applicable discovery of contamination demands materials be stored and disposed of according to applicable State of Alaska Statutes and in coordination with the base Installation Restoration Program (IRP) Office.

2.2 No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing rail line would remain in disrepair and a new rail line and catwalk would not be constructed. Eielson AFB would continue to operate with an unreliable rail line and track system as a secondary means of satisfying its fuel needs and would not meet the requirements outlined in the OPLAN.

The rail line that extends from the CHPP to the fuel offload area has not been upgraded since 1950 and is severely degraded. If the primary fuel supply (pipeline) became unavailable and the secondary fuel supply was activated, there would be an increase in rail car activity on inadequate lines. If a 50-car shipment were received under current conditions, there would be a bottleneck reaching the CHPP requiring a prohibitive quantity of labor maneuvering railcars and interfacing with the necessary coal deliveries to the CHPP. Furthermore, the continuous transfer of cars along the undersized rail and decomposed ties could damage or destroy a compromising joint bar resulting in potential spills. The no action alternative could result in a damaged or disabled rail line, jeopardizing the mission by leaving the base with no secondary means of fuel supply.

Figure 1-3, Proposed Action Area Overview



2.3 Justification for Lack of Alternative Alignments

In accordance with 32 CFR 989.9, no reasonable alternative to the proposed action was identified. The existing POL facility and existing roadways create a physical limitation, the current fuel offloading locations at the POL facility produce operational constraints, and the presence of wetlands in the area are an environmental concern. Furthermore, there was no reasonable alternative to meet the OPLAN requirement for the capability of storing more than 20 million gallons of aircraft fuel with the required daily resupply rate.

2.4 Alternatives Considered and Eliminated from the Study

The project's purpose and need was used as a foundation to identify potential alternatives. A number of alternatives were evaluated and based on that evaluation; the alternatives considered did not meet the purpose and need of the proposed project. Below is a brief description of the alternatives considered during the evaluation process.

Supplementary rail configurations and methods of delivery were considered, but were eliminated from further analysis due to compulsory geometry of the rail lines, wetlands and flood plains in the area, as well as petroleum contamination in several source areas in the Operable Units (OU). Additional rail configurations could also affect mission critical activities as well as the operational demands of managing 50-car shipments without negatively impacting the operability of the CHPP.

Truck delivery was also considered but removed from further analysis considering it would not meet the mission objectives to support the daily fuel delivery requirement to support the OPLAN. Delivering the amount of fuel to support the OPLAN at Eielson AFB would require over 100 trucks per day, which is operationally impractical to achieve. The existing infrastructure is not capable of supporting a 100 truck per day fuel delivery and transfer. In addition, obtaining the service for fleet of fuel trucks to execute over 100 deliveries per day would be logistically difficult and not feasible. Truck delivery does not meet fuel requirements outlined in the OPLAN and would not accomplish the purpose and need.

In accordance with Council on Environmental Quality (CEQ) regulations, agencies need only consider reasonable alternatives, not those failing to meet the purpose and need. The alternatives considered fail to meet the purpose and need and do not meet the OPLAN requirements.

2.5 Summary of Potential Environmental Consequences

The table below compares the alternatives by summarizing their environmental consequences for the specific resource categories.

Table 2.5-1 Summary of Potential Environmental Consequences		
Resource	**Proposed Action**	**No Action Alternative**
Soil Removal	Approximately 46,224 CY	0 CY
Ballast Removal	Approximately 59,994 CY	0 CY
Floodplains Impacted	Approximately 0.16 Acres	0 Acres
Wetlands Impacted	Approximately 0.54 Acres	0 Acres
Groundwater and Surface Water	None with protective measures	None with protective measures
Vegetation Loss	Approximately .88 Acres	0 Acres

Table 2.5-1 Summary of Potential Environmental Consequences

Resource	**Proposed Action**	**No Action Alternative**
Air Quality	Long term impact from increased locomotive emissions	No additional increase
Noise	Increase due to locomotive traffic	No additional increase
Infrastructure	Increase in safety and efficiency	No additional increase
Contaminated Sites	Potential impact	No impact
Wildlife Resources	Potential impact	No additional impact
Cultural and Historic Resources	No Adverse impact	No impact

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the affected environment (existing conditions) and the environmental consequences for the Proposed Action and No Action Alternative. This section also describes recommended mitigation measures for the Proposed Action.

Recreational, socioeconomic factors, and environmental justice were also reviewed; however, such resources are not present in the vicinity of the Proposed Action, and a detailed analysis is not presented in this section. The site of the Proposed Action is located on federal lands designated for military operations. The Proposed Action will not occur near any population centers that are disproportionately inhabited by minorities or low income groups. The closest residential area does not exhibit characteristics of low-income or minority populations that are not exhibited in the Fairbanks area population as a whole. No recreational activities occur or are likely to occur within the vicinity of the Proposed Action.

3.1 Physical Resources

Eielson AFB encompasses approximately 19,789 acres and is isolated from major urban areas. The portion of Eielson AFB that contains the proposed project area lies on the abandoned floodplain of the Tanana River, with elevations ranging from 525 to 550 feet above Mean Sea Level (MSL). The surface of the floodplain is relatively smooth and slopes gently downward to the northwest at a gradient of about six feet per mile.

3.1.1 Geology and Soils

Affected Environment

The geology of the area is classified as Precambrian and Paleozoic-age metamorphic rocks of the Yukon-Tanana crystalline complex, formally known as the Birch Creek Shist. The rocks have been intruded by igneous rocks of Mesozoic and Cenozoic age referred to as the Eielson plutons. The igneous and metamorphic rocks have been overlain by younger sedimentary Pleistocene and Holocene loess deposits. These deposits originated from the floodplain of the Tanana River and the foothills of the Alaska Range. The loess varies in depth from a few inches on the ridge tops to 40 to 100 feet in the valleys.

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

Environmental Consequences of the Proposed Action

The proposed action would result in minor impacts to soils. Impacts on soil would be excavation of approximately 46,224 CY overburden and 59,994 CY existing ballast for the proposed new rail line construction and improvements. The overburden consists primarily of organic material and unconsolidated silty sands and gravels, while the existing ballast consists of crushed rock substantially fouled by vegetation and organic materials. Both the excavated overburden and the old ballast could be reused as fill material at various sites on Eielson AFB. A layer of approximately 165,228 CY of new, crushed rock ballast would replace the existing ballast and the excavated overburden.

During construction, best management practices (BMPs) would be used to ensure soil impacts would be limited. Exposure time of soils will be minimized and exposed soils within the proposed project area would be re-vegetated to minimize soil erosion. All construction conducting land disturbing activities would not be undertaken until the appropriate APDES stormwater permits have been obtained.

Environmental Consequences of No Action

There would be no impacts to soils from this alternative.

3.1.2 Floodplains

Affected Environment

Floodplains are a predominate feature on Eielson AFB lands. The developed portion of Eielson AFB is primarily an area filled by gravel to elevate potential building sites above the 100-year floodplain of nearby watersheds. Approximately 33 percent, or 6,444 acres, of Eielson AFB is designated as floodplain.

EO 11988, Floodplain Management, states that structures should not impede or channelize stream flow. Where there are no alternatives to development within a floodplain, EO 11988 also requires a FONPA to demonstrate that all practicable measures have been taken to minimize harm to the floodplain.

Portions of the proposed action would be located within the 100-year floodplain (Figure 3-1, Floodplains Map).

Environmental Consequences of the Proposed Action

The proposed action would result in rail renovation on 0.16 acres of land located within the 100-year floodplain. No new construction is proposed to occur on the 100-year floodplain. The Proposed Action would result in low risk and low impact, as the rail line renovation will occur on track already built upon the 100-year floodplain.

Environmental Consequences of No Action

There would be no impacts to floodplains from this alternative.

3.1.3 Wetlands

Affected Environment

Wetlands are a predominant physical feature of Eielson AFB lands. For the most part, the developed areas of the base, and portions of the elevated hills to the east, are classified as uplands. However, some segments of the developed area of the base, as well as major portions of the undeveloped areas, are designated Section 404 wetlands by the USACE. Based on current delineation figures for wetlands on Eielson AFB, 51 percent of the undeveloped areas of the base are wetlands. This includes 9,391 acres of vegetated wetlands and 742 acres of lakes, ponds, and streams.

Environmental Consequences of the Proposed Action

The construction of the new rail line extension impacts wetlands near the Cargain Road crossing (0.2 Acres), again near Quarry Road past the fuel tanks (0.3 Acres), and a small portion along Mullins Road (0.04 Acres) (Figure 3-2, Wetlands Map). The wetlands generally consist of standing water, assorted grasses, and dwarf birch wetlands. The wetlands analysis included information from Tom Slater, USAF Natural and Cultural Resources Technician, who conducted a wetlands assessment as well as reviewing previously existing information and wetland inventory maps (The wetlands assessment is available at the Eielson AFB Natural Resources Office). Mitigation would occur to avoid, reduce, or compensate for any adverse impacts from loss of wetland vegetation. Procedures regarding the wetland loss would be

Figure 3-1, Floodplains Map

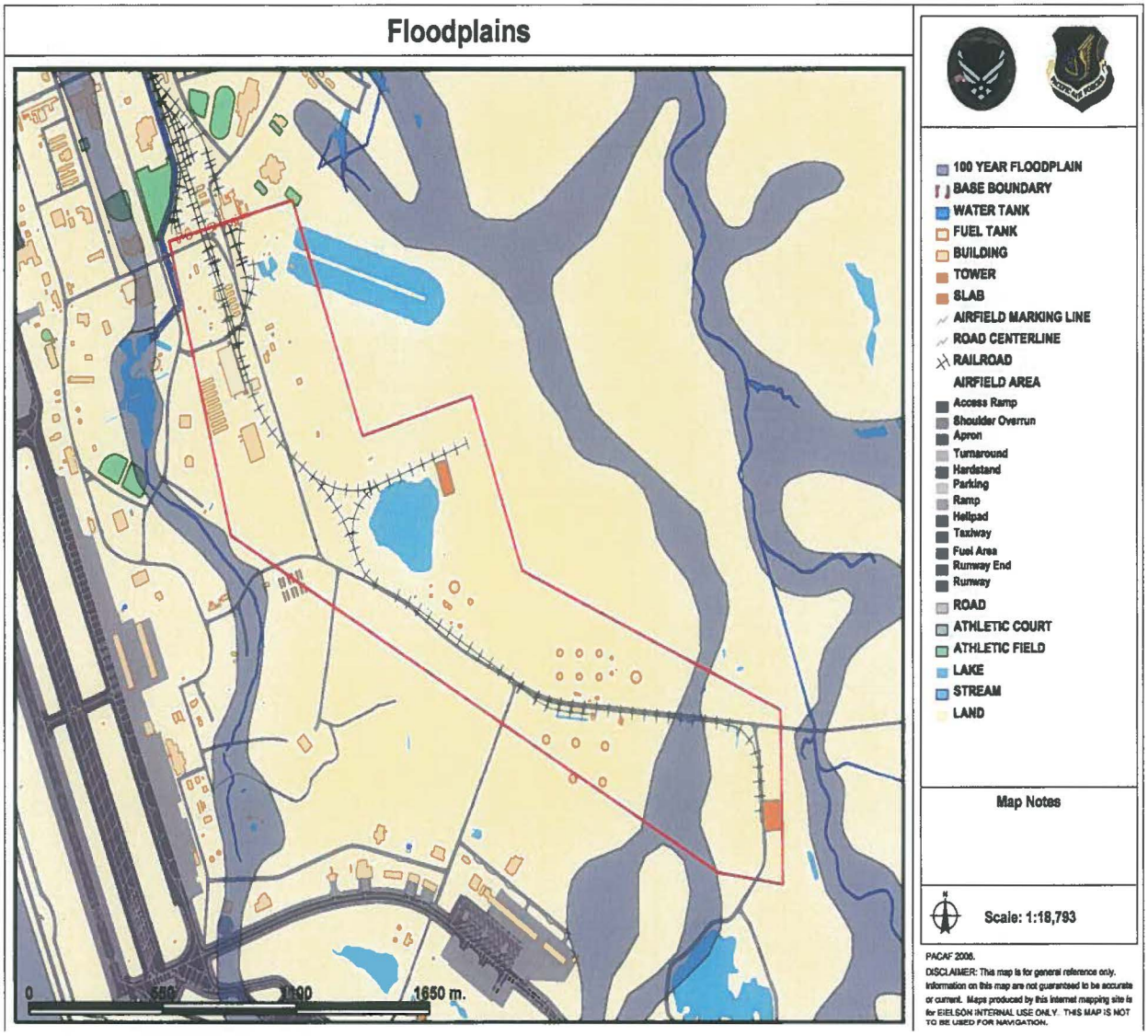
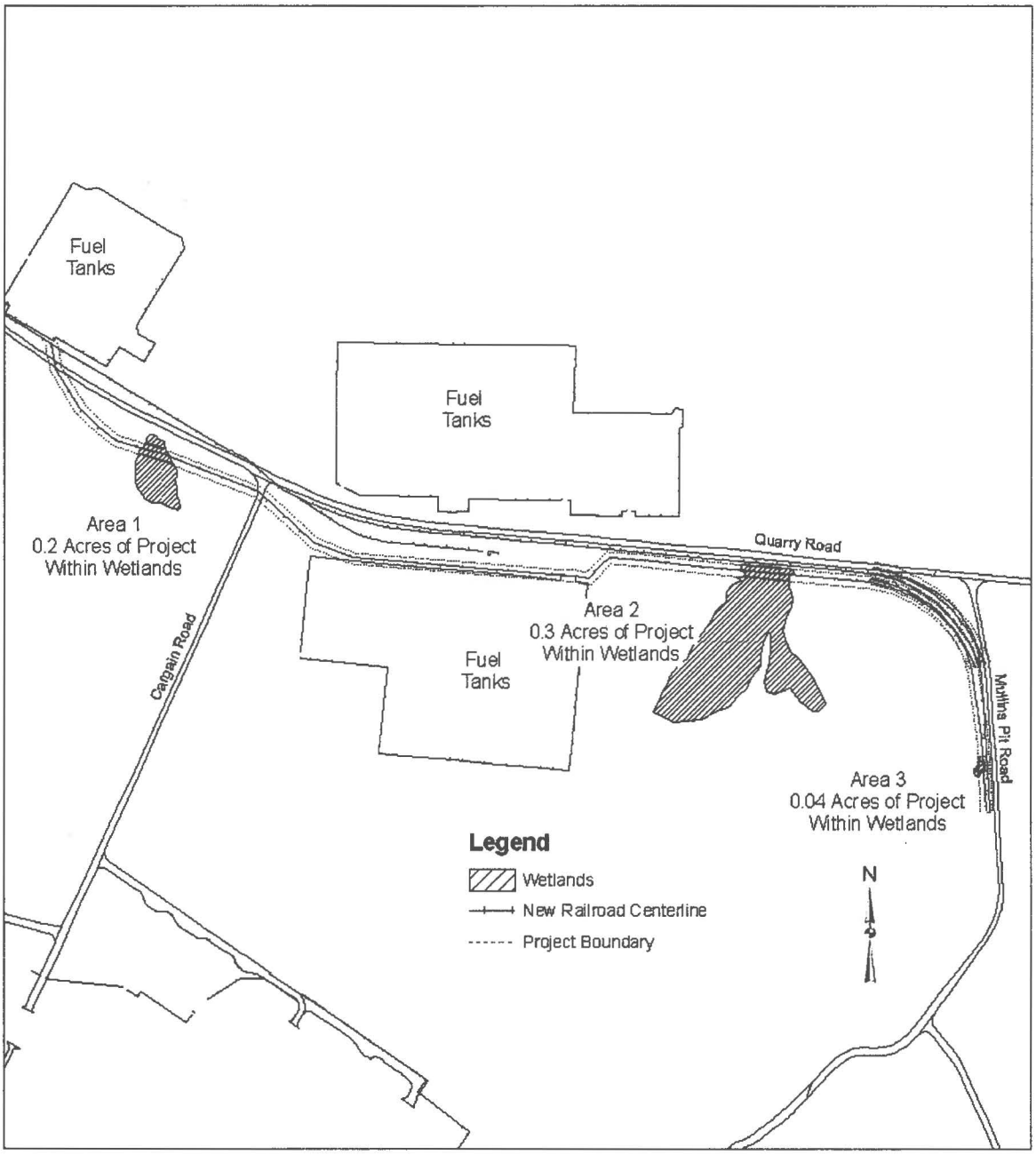


Figure 3-2, Wetlands Map



addressed in the USAF Finding of No Practicable Alternative (FONPA), the USACE wetland permit, and would meet the requirements of EO 11990.

Environmental Consequences of No Action

There would be no impacts to wetlands under this alternative.

3.1.4 Air Quality

Affected Environment

Air quality is generally good at Eielson AFB. The FNSB is in attainment for carbon monoxide (with a maintenance designation), but is in non-attainment for $PM_{2.5}$. The proposed action is outside the non-attainment boundary for $PM_{2.5}$. The Clean Air Act designates areas as attainment, non-attainment, maintenance, or unclassified with respect to national ambient air quality standards (NAAQS). Non-attainment areas are locales that have recently violated one or more of the NAAQS and must satisfy the requirements of State or Federal Implementation Plans (SIPs or FIPs) to bring them back into conformity with the applicable air quality standards. Significant temperature inversions during winter, coupled with low winds and a restricted geographic basin often serve to concentrate air pollutants in the Fairbanks-North Pole area. Pollutants of concern include carbon monoxide, emitted primarily from motor vehicles, and particulates, which are the result of combustion of a variety of fossil fuel types. Major particulate emission sources include coal burning power plants, residential wood stoves, forest fires, vehicle emissions, and road dust.

Emissions sources on Eielson AFB are operated in accordance with state Air Quality Control regulations and include operating permits and operational limits. As required by Section 18 Alaska Administration Code (AAC) 50.045(d), compliance with the Eielson AFB Fugitive Dust Emission Plan will include:

Fugitive dust emissions (airborne dust generated by vehicles operating on unpaved surfaces, transfer or transport of dust producing materials, soil stockpiling, etc.) shall be controlled at the construction site, at long haul routes, and at staging areas. Water spraying shall be conducted as necessary, determined by contracting officer, to minimize fugitive dust generation. Traffic speeds on all unpaved road surfaces will be limited to 15 mph. Any uncontaminated dirt or mud, which is tracked onto paved roadways, shall be cleaned away that day. Depending on conditions, the roadway will be watered before cleaning or if a street sweeper is used, it will have a water system that controls dust around the sweeper during operation.

Environmental Consequences to the Proposed Action

Short-term air quality impacts would originate from temporary construction activities while long-term impacts could develop from increased rail operations of the proposed action.

Air quality issues would arise from the increased vehicular traffic directly related to an increase of construction workers, emissions from construction equipment, and particulate matter from ground disturbing activities. Due to the limited scope and temporary nature of the construction activities, the short-term air quality impact would be less than significant.

Long-term air quality impacts would develop from new or increased rail traffic on the proposed new and improved rail as well as associated maintenance activities. Rail activity would

potentially increase by a maximum of 50 railcars per day if the secondary fueling option were employed.

EPA has estimated average emission rates, given in grams per brake horsepower-hour (g/bhp-hr), for uncontrolled locomotives and those required to meet the various emission standards. (Office of Transportation and Air Quality EPA-420-F-09-025 April 2009). The oldest locomotives operated by the Alaska Rail Road to deliver fuel on the Eielson AFB rail line were manufactured in the early 1970s, and have been remanufactured several times to various standards. Emissions have been calculated using the emission rates for uncontrolled locomotives to represent the worst case scenario, and are shown in Table 4-1.

Table 4-1 Uncontrolled Emission Rates					
	PM_{10}	$PM_{2.5}$	HC	NO_X	CO
Emission Rates g/bhp-hr	0.32	0.31	0.48	13.0	1.28

Based on a runtime of four hours per delivery, 600 bhp (two locomotives at 300 bhp), and a maximum of 40 deliveries per year, the tons per day (TPD) and tons per year (TPY) emissions are shown in Table 4-2.

Table 4-2 Proposed Action Emission Rates					
	PM_{10}	$PM_{2.5}$	HC	NO_X	CO
Emission Rates TPD	0.008465	0.008211	0.012698	0.343921	0.033863
Emission Rates TPY	0.338630	0.328471	0.507945	13.756845	1.354520

As previously stated, FNSB is in attainment for CO (with a maintenance designation), but is in non-attainment for $PM_{2.5}$. Construction of the proposed action is outside the maintenance area for CO and the non-attainment boundary for $PM_{2.5}$; however, locomotive trips originating from the Petro Star refinery in North Pole occur within the sensitive areas. 40 CFR Subpart B §93.150(a) prohibits any department, agency or instrumentality of the Federal Government from engaging in, supporting in any way or providing financial assistance for, licensing, permitting, or approving any activity which does not conform to an applicable implementation plan. Projects typically undergo a conformity analysis and determination to prove that the proposed action would not violate this regulation, unless the type of action or emission rate is below the threshold. §93.153(b) (2) identifies the emission rates in TPY that would exempt a project in a maintenance area from a conformity analysis. 40 CFR Subpart B §93.153(b) (1) identifies the emission rates in TPY that exempt projects in non-attainment areas from a conformity analysis. The CO threshold for a maintenance area is 100 TPY and the $PM_{2.5}$ threshold for a non-attainment area is 100 TPY. As is shown in Table 4-2, the proposed action would potentially emit 1.354520 TPY of CO and 0.328471 TPY of $PM_{2.5}$ (based on EPA guidance of 0.97 x PM_{10}), both of which are too insignificant to warrant a conformity analysis.

Environmental Consequences of No Action

There would be no construction impacts to air quality under the no action alternative.

3.1.5 Groundwater and Surface Water

Affected Environment

Eielson AFB is located over a shallow unconfined aquifer. The aquifer is approximately 250 feet thick, extends to bedrock, and has a regional gradient of about five feet per mile flowing to the north-northwest. The water table varies from the surface in adjacent wetlands to ten feet below ground level in developed areas. The base uses the local aquifer for its drinking water and monitors groundwater quality in a number of locations as part of its Installation Restoration Program (IRP). For more information on the IRP, see section 3.1.8 Contaminated Sites. Localized contamination of the aquifer has been identified in the industrial area of the base, but the overall quality of groundwater at Eielson AFB is good.

Aquatic bodies on Eielson AFB include streams, wetlands, and lakes. There are approximately 28 miles of streams; 10,133 acres of wetlands; 12 lakes (11 are man-made); 80 ponds (10 are naturally-occurring and 70 man-made) totaling 560 acres. There are 6,770 acres of land within the 100-year floodplain on the main base. The man-made lakes and ponds were created during the excavation of gravel deposits for use as fill material for construction projects on base.

Approximately 51 percent, or 10,133 acres, of Eielson AFB is classified as wetlands, with 9,391 acres being vegetated wetlands and the remainder being lakes, ponds, and streams. Wetlands and low gradient alluvial streams comprise most of the surface water resources on Eielson AFB, with wetlands dominating the low-lying areas within and surrounding the installation. Most wetland areas were created as a result of surface waters becoming trapped in the thawed layer over the permanently frozen subsurface (permafrost). Flood periods tend to occur during spring snowmelt and during the middle to late summer, when heavy rains or warm air quickly brings glacier fed mountain streams to flood capacity. Several lakes and extensive wetlands surround the airfield in the cantonment area. Among these are Bear, Polaris, Moose, Hidden, Pike, Rainbow, Scout, Grayling, and Tar Kettle lakes. Creeks that can be found in the vicinity of the airfield include French and Moose creeks.

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

Environmental Consequences to the Proposed Action

Construction and/or operation of the proposed project could generate impacts to ground and surface waters. There is potential risk associated with the release of hazardous materials, primarily POL. Implementation of the Eielson AFB Oil and Hazardous Substances Discharge Prevention and Contingency Plan would minimize potential impacts.

The possibility of an accidental release of POL from construction equipment exists throughout construction of the proposed action. According to contractual requirements for working on Eielson AFB, contractors must keep their equipment in good repair to minimize spill risk. Additionally, contractors are required to comply with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. Seq. as amended by the Water Quality Act of 1987, P.L. 100-4, by developing a SWPPP and filing a NOI prior to construction (in accordance with the Alaska Pollutant Discharge Elimination System General Permit for Discharges from Large and Small Construction Activities AKR100000); thereby minimizing the risk and achieving less than significant impacts to ground or surface water, Earth moving activities could cause minor localized siltation, however silt fences would be used to decrease such an occurrence.

There is a risk of an accidental release during fuel transfer operations with the proposed action; however, this same risk applies with the current situation. Practices such as maintaining equipment and providing annual training for personnel are already in place and would continue to be implemented to reduce the possibility of an accidental spill with the proposed action. Furthermore, the fuel transfer sites are already located within a containment area and a plastic primary containment device is placed under the connections to catch any minor release. With these current and continuing practices in place, the possibility of impacts to surface and ground water would be less than significant.

Environmental Consequences of No Action

There is a risk of an accidental release during current fuel operations as mentioned in the paragraph above, however, the no action alternative would not result in further environmental consequences than what already exists.

3.1.6 Infrastructure

Affected Environment

The infrastructure improvements found within and adjacent to the proposed project area generally consist of the existing rail line, surfaced roads, and the E-2/E-6/E-11 bulk fuel storage facilities, which include 14 storage tanks and associated piping and mechanical equipment.

Eielson AFB is serviced by a roadway network comprised of approximately 45 miles of paved road. The roadway system is primarily utilized by military and civilian employees of Eielson AFB. The existing rail system on Eielson AFB consists of 9.86 miles of railroad track, some of which is in disrepair as discussed in Section 1.3 for the Proposed Action. The primary function of the rail system is to carry coal to the CHPP as well as deliver munitions on a limited basis. Currently depending on the need, there are approximately four to ten railcars per day delivering coal to the CHPP; which is directly related to the demand for heat and electricity. Therefore, deliveries tend to be higher in the winter months and lower in the summer months resulting in an average of 197,100 tons of coal per year. Munitions deliveries are much more infrequent and are dependent on mission need, which varies throughout the year.

Environmental Consequences of the Proposed Action

Construction of the proposed project would improve the safety and efficiency of fuel delivery by rail car to Eielson AFB. As an additional benefit, the improved track operations, to include rail car staging and maneuvering, would increase the safety and efficiency of coal deliveries to the CHPP; effectively enhancing the mission at Eielson AFB.

Environmental Consequences of No Action

The no action alternative would leave Eielson AFB with an outdated rail system which is currently inadequate to support the required delivery rate as outlined in the OPLAN.

3.1.7 Noise

Affected Environment

Aircraft generate, by far, the most noise on Eielson AFB. Noise levels associated with aircraft during flying hours can exceed 80 decibels (dB) in the vicinity of the flight line; however, the proposed project area falls outside of the 65-dB contour. A 65-dB level is not recommended for housing areas by EPA standards (Noise Effects Handbook, US EPA, 1981). The closest housing to the proposed action is located approximately 340 feet to the northeast, and is separated by athletic fields. Figure 3-3 is a chart that provides a scale of noise levels associated with typical daily activities.

Environmental Consequences of the Proposed Action

Noise impacts associated with implementation of the proposed project would consist of short-term construction noise and long-term intermittent noise from the operation of locomotives on the rail line. Noise impacts would be less than significant when compared to nearby flight line operations.

Short-term noise impacts from construction would occur, predominantly from the operation of earth moving equipment and the installation of ballast and rail. Construction noise is temporary in nature, relatively low decibel, and dissipated along the length of the proposed project, further minimizing impacts. Additionally, the proposed project area is surrounded by industrial areas and open land, with no sensitive receptors present. Therefore, short term noise impacts would be less than significant.

Long-term noise impacts would occur from the operation of locomotives along the existing and proposed rail line. As with construction noise, this would be intermittent and distributed along the length of the rail line. The closest sensitive receptors reside in temporary lodging 241 feet south east of the existing rail line, and in the base housing 340 feet north east of the existing rail line (Figure 3-4 Sensitive Noise Receptors). The audible impact would be similar to that already experienced by residents during daily (on average) coal deliveries. Due to the existing ambient noise and the intermittent occurrences, noise impacts of the proposed action would be less than significant.

Environmental Consequences of No Action

Long-term noise impacts already occur from the operation of locomotives along the existing rail line and if rail traffic is increased to meet refueling needs it would create a more significant noise impact. There would be no noise impacts derived from construction under the no action alternative.

3.1.8 Contaminated Sites

Affected Environment

Activities conducted at Eielson AFB throughout its history have generated areas of known contamination, which have been identified through Air Force contractor studies. Contaminated sites include: unlined inactive landfills, shallow trenches used for the disposal of fuel tank sludge, drum storage sites, and numerous other disposal or spill areas.

Figure 3-3 Noise Levels

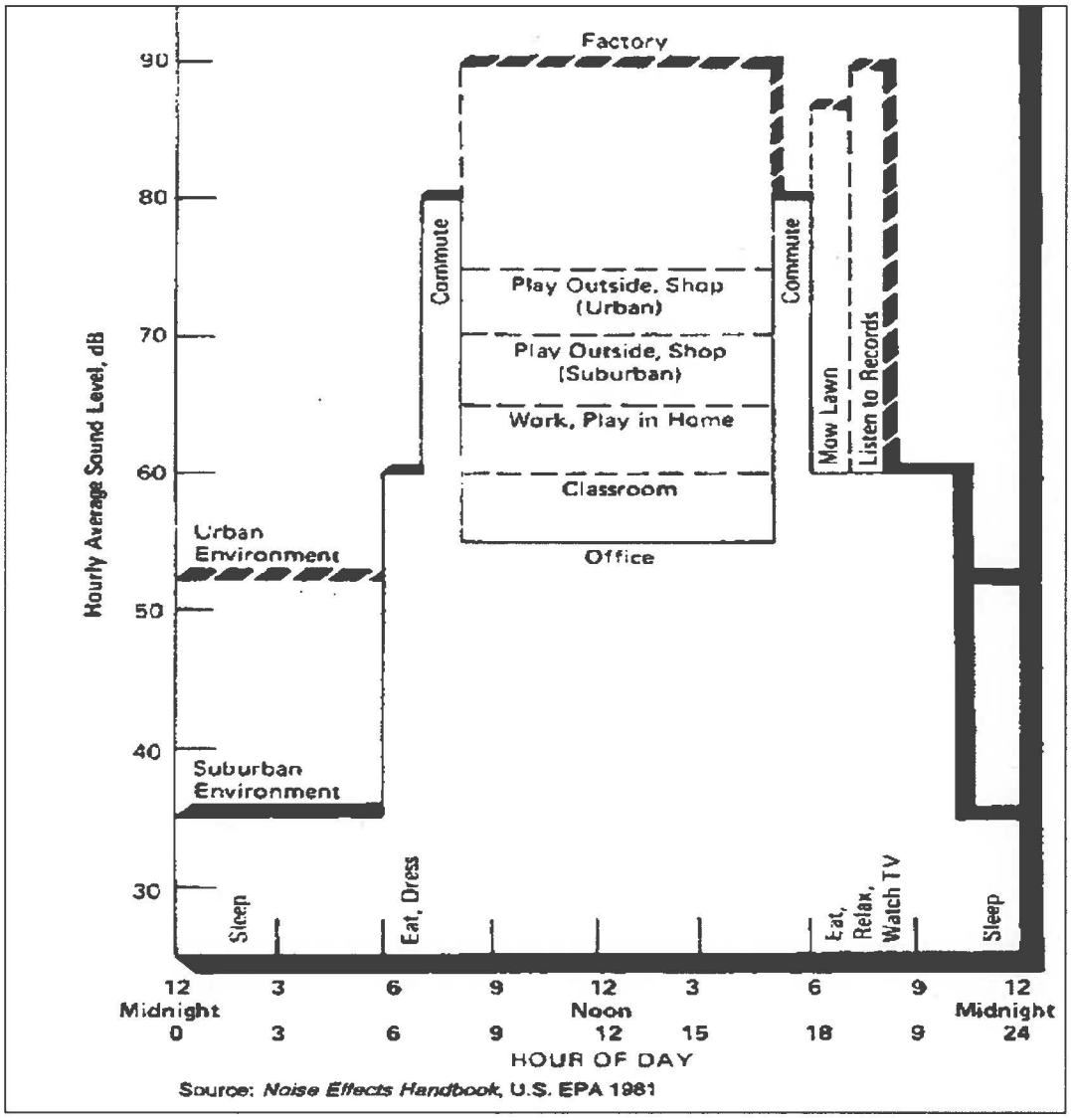
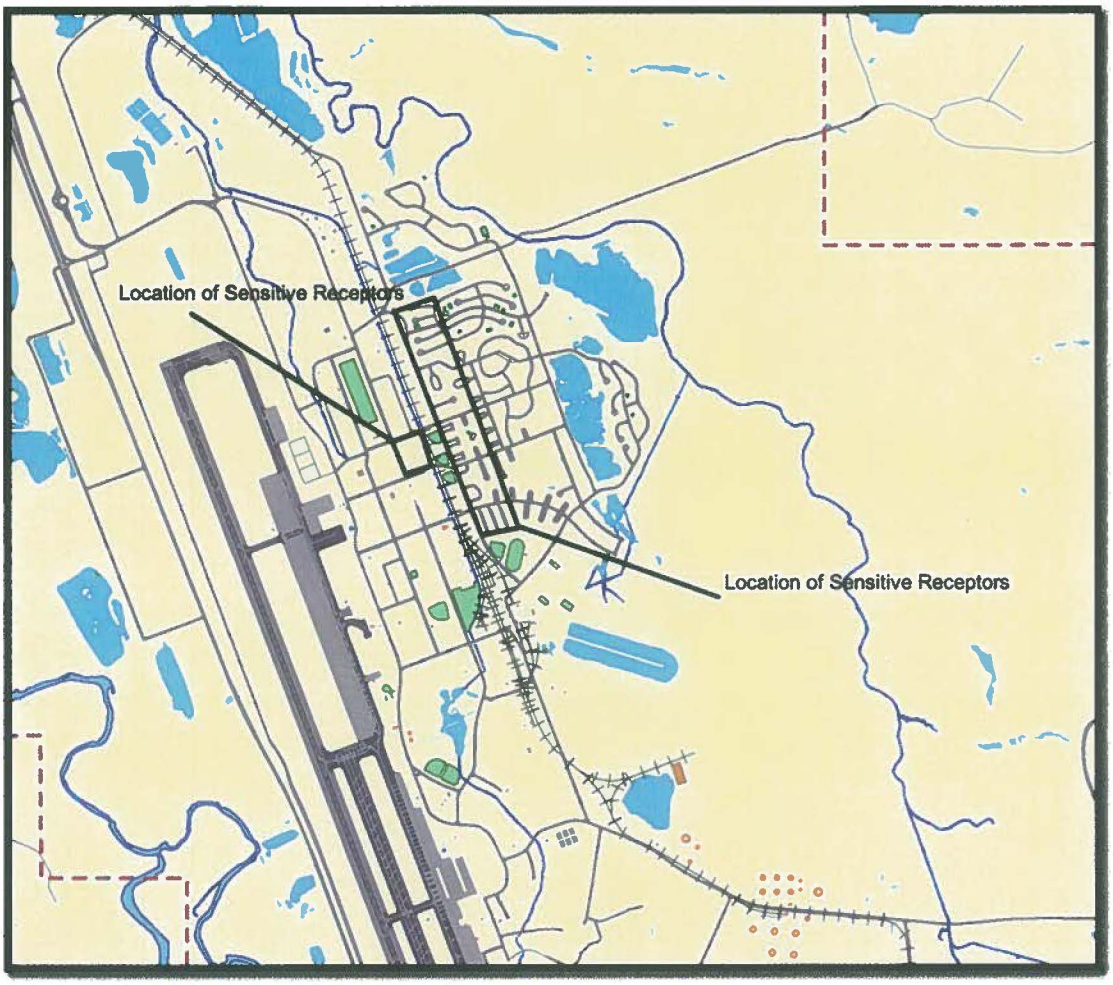


Figure 3-4, Sensitive Noise Receptors



On October 25, 1990 Administrative Docket Number: 1089-07-14-120, a Federal Facility Agreement (Agreement) for Eielson AFB was signed. The signatories include representatives from the following: 343 Tactical Fighter Wing (host unit at Eielson AFB at the time of signing), 11th Air Force, Alaska Department of Environmental Conservation (ADEC), State of Alaska Attorney General, and Region 10 of the United States Environmental Protection Agency (USEPA). The general purpose of the Agreement is to ensure that past and present activities are investigated and appropriate removal and/or remedial actions are taken. Additionally, the Agreement establishes the procedural framework for developing, implementing, and monitoring the appropriate response on base in accordance with Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the National Contingency Plan, Superfund guidance and policy, Resource Conservation & Recovery Act of 1976 (RCRA) guidance and policy, as well as state law.

The areas of potential and/or known contamination are divided into operable units (OUs) based on the commonalities in contaminates and/or facility type. There are three OUs and nine individual sites within the vicinity of the proposed action. OU1 contains one site ST-48 (Power Plant Area). Under the Agreement, this site is undergoing bioventing and continued monitoring. OU2 contains sites ST-16 (MOGAS Fuel Line Spill), ST-19 (JP4 Fuel Spill), ST-40 (Power Plant Sludge Pit), DP-28 (Fly Ash Disposal Site), S-14 (E-2 Fuel Storage Railway Spill Area), and ST-10 (E-2 POL Storage Area). Of the sites in OU2, all except ST-19 are subject to monitoring only. ST-19 is subject to monitoring and institutional controls, which prohibit the extraction and use of groundwater from within the site. OU4 contains sites ST-27 (E-11 Fuel Storage Area) and DP-25 (E-6 Fuel Storage Area) (Figure 3-5 Operable Units). Under the Federal Facility Agreement, ground water will be monitored for these sites and no further remedial actions will take place while contaminant concentrations, if any, remain at acceptable screening levels.

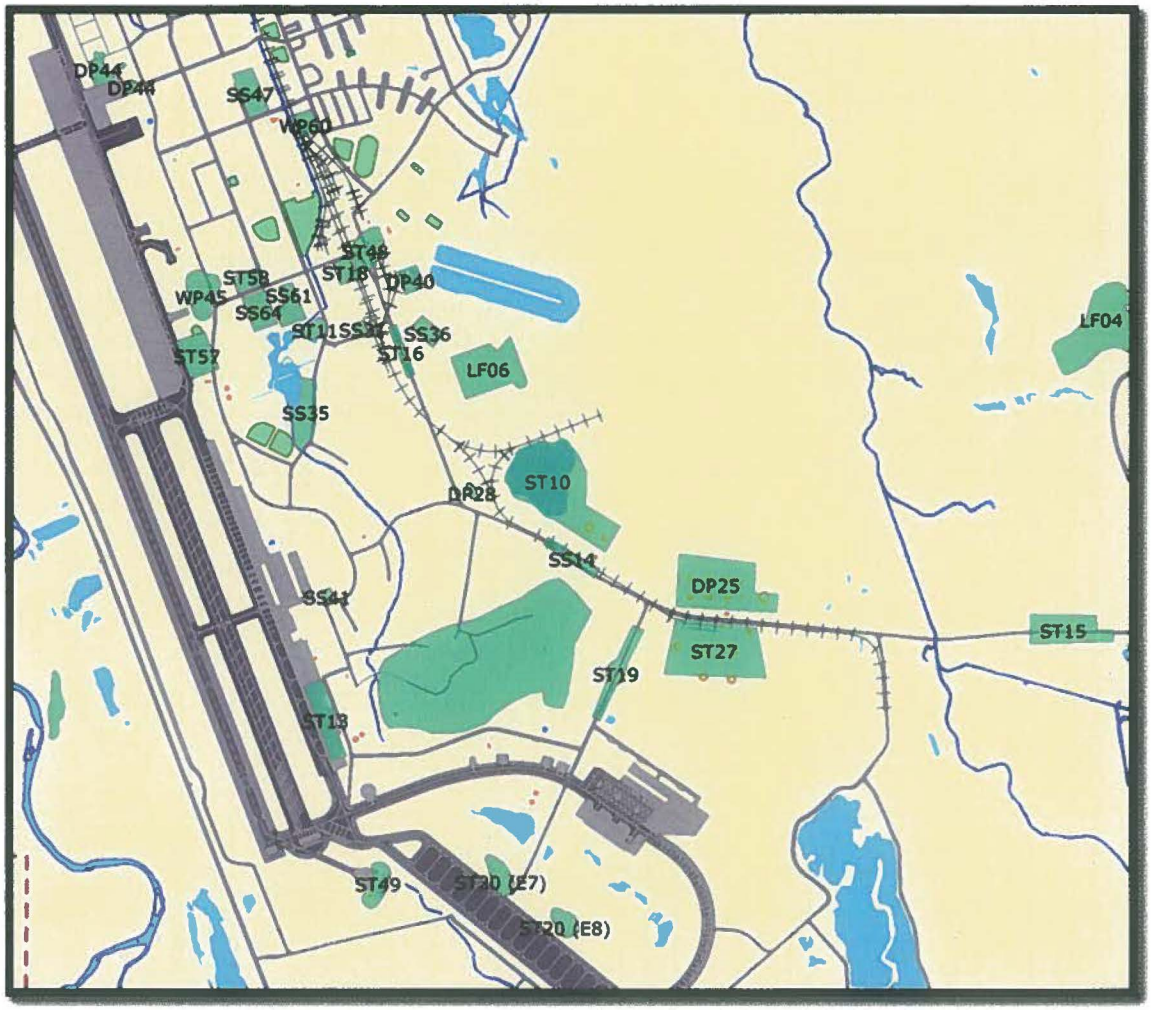
Environmental Consequences of the Proposed Action

The proposed project would be constructed adjacent to eight known areas of contamination and would coincide with one area (S-14 E-2 Fuel Storage Railway Spill Area) in front of the E-2 POL. As mentioned in the above section, these areas are subject to a Federal Facility Agreement signed by representatives from Eielson AFB, the State of Alaska, and EPA. During construction, there is the potential to encounter contaminated soils. If excavation is necessary, the top two feet of soil shall be set aside for possible reuse, as it is normally weathered. Below that level the soil shall be removed in levels and stock-piled so that it may be returned to the same level from which it came. The soil shall be examined for visual changes in soil character and screened for volatile organic material using a photoionization detector (PID). Soil that fails the screening shall be separated from the other soil so that it does not contaminate the soil that passes the screening, and set aside for disposal. Soil that must be disposed of shall be handled in accordance with applicable State of Alaska Statutes and in coordination with the base Installation Restoration Project Office. With these measures in place, the potential for impacts from contaminates would be less than significant.

Environmental Consequences of No Action

Under the no action alternative, there would be no impacts due to contaminates encountered during excavation, and the sites would continue to be managed according to the Federal Facility Agreement.

Figure 3-5, Operable Units



3.2 Biological Resources

3.2.1 Vegetation

Affected Environment

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

The northern boreal forest of Interior Alaska is a fire dependent ecosystem. It is a mosaic of vegetation types made up of a few primary species of wide ecological amplitude that respond to specific combinations of physical site characteristics. These characteristics are mainly topographical and include slope and aspect and other physical characteristics such as microclimate, soil temperature, and moisture regimes. These in turn influence the type of vegetation that will be found there

The vegetative community associated with the proposed project area consists primarily of black spruce, shrubs and grasslands.

Environmental Consequences of the Proposed Action

The proposed action would result in the loss of 0.57 acres of vegetation consisting primarily of deciduous trees and shrubs resulting in minor impacts.

Environmental Consequences of No Action

No impacts to vegetation would result from the No Action Alternative.

3.2.2 Wildlife Resources

Affected Environment

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

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

Environmental Consequences of the Proposed Action

In interior Alaska, the U.S. Fish and Wildlife Service has designated primary migratory bird breeding and nesting season to be between May 1 and July 15. Construction would occur before May 1 or after July 15 to avoid impacts to migratory and nesting birds. Construction personnel would also adhere to Migratory Bird Treaty Act guidelines for the duration of the project.

The proposed action would result in the loss of a small amount of bird habitat with the clearing of the vegetation. There may be the possibility of minor disruptions to wildlife movement in the area during construction phase. Increased activities such as operation of heavy equipment could result in temporary displacement of wildlife. However, these impacts would be limited in duration and scope.

Environmental Consequences of No Action

No impacts to wildlife resources would occur with this alternative.

3.2.3 Threatened and Endangered Species

Affected Environment

No threatened or endangered species, as designated by the United States Fish and Wildlife Service (USFWS), typically occur in the proposed project area. This was the conclusion of an Eielson AFB contract study entitled *Biological Survey, Final Report 1994,* which addressed the potential for the presence of endangered species on base lands (The *Biological Survey, Final Report* is available at the Eielson AFB Natural Resources Office). Potentiality of threatened or endangered species is reaffirmed on an annual basis, most recently August 2011, by an informal consultation between USFWS and the Chief of Natural Resources, Mr. Ronald Gunderson, of Eielson AFB. As with each meeting since the original survey, the 2011 conclusion was that there are no endangered species on base lands, which is documented in the Eielson AFB Integrated Natural Resources Management Plan (INRMP). Should any threatened or endangered species become resident to Eielson AFB managed lands, consultation with USFWS will be initiated (R. Gunderson, personal communication, April 14, 2010).

Environmental Consequences of the Proposed Action

Based on the most recent consultation with USFWS, no impacts to threatened and endangered species would result from any of the alternatives considered in this EA.

Environmental Consequences of No Action

No impacts to threatened and endangered species would occur with this alternative.

3.2.4 Cultural and Historical Resources

Affected Environment

Based on initial consultation with the SHPO, it was recommended that two AHRS sites, Building 6248, Jet Fuels Complex Pump House (FAI-1763) and Building 6247, Jet Fuels Complex Pumping Conveyance (FAI-1764) and the rail line be evaluated for eligibility for inclusion to the

National Register of Historic Places (36 CFR 800.4) and the nature of the project effects on any eligible historic properties be assessed (36 CFR 800.5).

Environmental Consequences of the Proposed Action

A finding of "No Historic Properties Adversely Affected" was determined by SHPO on July 6, 2011 (File No. 3130-1R Air Force) for the Proposed Action. Neither the repair of the existing track or construction of the new track would adversely affect the two AHRS sites (FAI-1763 and FAI-1764) (106 Consultation Response is included in Appendix B). Also it was found that the Proposed Action would serve to preserve the continuity of the rail system and the Proposed Action does not change the current use of the existing rail line.

Environmental Consequences of No Action

No impacts to cultural and historical resources would occur with this alternative.

3.3 Mitigation and Best Management Practices

As defined in CEQ Regulation 40 CFR 1508.20, "mitigation" includes:

- Avoiding the impact altogether;
- Minimizing impacts by limiting the degree or magnitude of the action;
- Rectifying the impact through repairing, rehabilitating, or restoring;
- Reducing or eliminating the impact over time by preservation and maintenance operations; or
- Compensating for the impact by replacing or providing substitute resources or environments.

Based on this definition, the following mitigation measures for the proposed rail line would address impacts to the environment.

Affected Environment	Mitigation Measures
Physical Resources	
Soils, Wetlands, Groundwater, and Surface Water	• Compliance with the provisions of the Clean Water Act, 33 U.S.C §1251 et. Seq. as amended by the Water Quality Act of 1987, P.L. 100-4, by preparing a SWPPP and filing an NOI prior to construction in accordance with the APDES General Permit for Discharges from Large and Small Construction Activities AKR100000; • Establish the minimum project limits necessary for construction and restrict equipment access to areas outside of the limits;

	• Protect and restore the vegetative buffer areas near wetlands in the area by using silt fences or other construction techniques to prevent siltation into wetlands, where practicable; and • Re-vegetate exposed soils.
Affected Environment	**Mitigation Measures**
Contaminated Sites	• Educate the construction contractor about the Eielson AFB Oil and Hazardous Substances Discharge Prevention and Contingency Plan; and • If excavation is required below the first two feet of soil, the soil shall be examined for visual changes in soil character and screened for volatile organic compounds using a photoionization detector. Soil that fails the screening shall be separated from the other soil to prevent contamination and set aside for disposal.
Biological Resources	
Wildlife Resources	• Schedule construction activities before May 1 and after July 15 to avoid potential disruption to migratory and nesting birds.
Cultural Resources	• In the event any signs of cultural or historic resources are encountered during construction, the cultural resource specialist would be notified immediately and all activities would cease until a professional archeologist evaluates the finding.

3.4 Cumulative Impacts and Irreversible and Irretrievable Commitments of Resources

3.4.1 Cumulative Impacts

The National Environmental Policy Act (NEPA) process requires that the issue of cumulative impacts be addressed in an environmental assessment.

The CEQ has stated in their NEPA regulations (1508.7) that: "*Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to past,*

present, and reasonably foreseeable future actions. . ." and *". . .can result from individually minor, but collectively significant actions taking place over a period of time."*

The likelihood of significant cumulative impacts is small and no further analysis is necessary for geology and soils, air quality, groundwater and surface water, infrastructure, noise, contaminated sites, vegetation, wildlife, threatened and endangered species, and cultural and historical resources. Wetlands and floodplains required additional analysis to address the impacts.

Eielson AFB has, over the years, been very cognizant of the issue of cumulative impacts to wetlands and floodplains. This is due to the fact that the base was, to a large extent, built by filling wetlands and floodplains, and that expansion of Eielson AFB facilities beyond the original footprint of the base often requires the use of additional wetlands and/or floodplains. Of the 19,789 acres that constitute Eielson AFB lands, 51 percent are designated wetlands and 33 percent are designated floodplains.

The proposed action will result in minor impacts to a small segment of existing floodplains (approximately 0.16 acres) and wetlands (approximately 0.54 acres). The no action alternative would have no impact to the 100-year floodplain or wetlands within the proposed action. Neither project will result in cumulatively significant impacts to the environment on Eielson AFB lands.

3.4.2 Irretrievable Commitments of Resources

The NEPA CEQ regulations require environmental analyses to identify "...any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented" (40 CFR Section 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) which cannot be replaced within a reasonable time frame. Building construction material such as ballast, railroad ties, rail, and the gasoline usage for construction equipment would constitute the consumption of nonrenewable resources. These resources are currently plentiful and the amount of these resources required by this project would be minimal. Irreversible resource commitments associated with the proposed action is the loss of approximately 0.54 acres of wetlands and 0.16 acres of 100-year floodplain and associated vegetation that will be impacted from construction.

4.0 LIST OF PREPARERS

The following individuals were responsible for the content of this EA.

Tutka, LLC
Amber Huckaba, Environmental Scientist
B.S. Science
Years of Experience: 10
EA: Draft EA Author and Revisions

Keith Guyer, P.G, Project Manager
B.S. Geology
Years of Experience: 30
EA: Draft EA Review

5.0 LIST OF AGENCIES AND PERSONS CONSULTED

Table 6.1 Project Scoping		
Name and Agency / Position	**Contact Information**	**Scoping Topic**
Mr. Alan Simmons, Hazardous Materials / Tanks and Spill Reporting Manager	907-377-3836 alan.simmons@eielson.af.mil	Hazardous Materials / Spill Response
Mr. Austin Hill, Terminal Superintendent Alaska Rail Road	907-458-6023	Rail Operations / Locomotive Information
Mr. Bill Rice, Base Community Planner	907-377-2922 william.rice@eielson.af.mil	Land Use
MSgt Cory Proulx, Section Chief Fuels Information Services Center	907-377-4190 corey.proulx@eielson.af.mil	Fuel Operations / Needs Analysis
TSgt David Kolnes, Heavy Equipment Operator	907-377-3016 david.kolnes@eielson.af.mil	Rail Construction
Mr. David Wilson, Engineer	907-377-1736 david.wilson@eielson.af.mil	General Engineering / Materials Calculations
Ms. Heidi Durako, Water Program Manager	907-377-1678 heidi.durako@eielson.af.mil	Water Quality / Stormwater
Mr. Jeffrey Albright, Operator CHPP	907-377-3414 jeffrey.albright@eielson.af.mil	Rail Operations / Rail Design Guidelines
Mr. Marty Overlin, Superintendent CHPP	907-377-3151 overlinmr@eielson.af.mil	Project Background / Rail Operations
Mr. Ronald Gunderson, Chief Natural and Cultural Resources	907-377-5182 ronald.gunderson@eielson.af.mil	Natural and Cultural Resources
Ms. Ruth Forrester, Base Environmental Planner	907-377-3365 ruth.forrester@eielson.af.mil	Base Environmental Planning
Mr. Stephen Parker, Installation Restoration Project Manager	907-377-5209 stephen.parker@eielson.af.mil	Contaminated Sites / Installation Restoration Plan
Mr. Thomas Slater, Natural and Cultural Resources Technician	907-377-5182 thomas.slater@eielson.af.mil	Natural Resources / Wetlands
Ms. Amber Huckaba, Tutka, LLC/Air Force Subcontractor	907-272-8010 amber@tutkallc.com	Revisions to Draft EA
Mr. Keith Guyer, Tutka, LLC/Air Force Subcontractor	907-272-8010 keith@tutkallc.com	Draft EA Review
Judith E. Bittner, Office of History and Archaeology, State Historic Preservation Officer	907-269-8721	Cultural and Historical Resources

APPENDIX A - GLOSSARY

Alluvial - Sediment deposited by flowing water.

Council on Environmental Quality (CEQ) – Created by the National Environmental Policy Act, the CEQ is a division of the Executive Office of the President that coordinates federal environmental efforts in the United States and works closely with agencies and other White House offices in the development of environmental and energy policies and initiatives.

Compromising Joint Bar - A joint bar used for joining rails of different height or section.

Decibel - A unit of measurement for describing sound intensity.

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

Executive Order 11988 - Mandate to federal agencies to follow the NEPA process to ensure the protection of floodplains.

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

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

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

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

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

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

Permafrost - Permanently frozen subsoil occurring in perennially frigid areas.

Richter Scale- An open-ended logarithmic scale for expressing the magnitude of a seismic disturbance (as an earthquake) in terms of the energy dissipated in it; with 1.5 indicating the smallest earthquake that can be felt, 4.5 an earthquake causing slight damage, and 8.5 a very devastating earthquake

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

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

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

100-Year Floodplain - The 100 year floodplain refers to an area which would be subject to a 1% chance of flooding in any given year, or a 63.4% chance of flooding in a given 100 year period.

APPENDIX B – AGENCY DOCUMENTATION