



U.S. Department of the Interior  
Bureau of Land Management  
Glennallen Field Office  
P.O. Box 147  
Glennallen, Alaska 99588  
<http://www.blm.gov/ak/st/en/fo/gdo.html>

## **Environmental Assessment Raptor Trail access to F-22 Crash Site**

**Applicant: United States Department of Air Force  
Case File Number: AA-092885  
DOI-BLM-AK-A020-2011-0010-EA**



**Location:**  
Section 19, T.33N, R.9E, Seward Meridian

**Prepared By:**  
Joseph Hart  
Realty Specialist  
April 5, 2011

## **1.0 Introduction**

In November of 2010, a United States Air Force (USAF) F-22 fighter jet crashed during training near the Denali Highway on Federal public lands administered by the Bureau of Land Management (BLM). Immediate search and rescue efforts were performed and once the crash site was discovered, all appropriate actions and authorizations were permitted under emergency conditions to determine the extent of the loss. Upon the completion of those assessment actions and due to pending winter weather conditions, time and the need to plan the recovery, only minimal mitigation actions were initially taken to prevent further environmental damage to the area. A majority of the crashed aircraft remained as well as some human remains.

The USAF views their requirement to protect classified materials, investigate the crash site, clean up any hazardous materials, and recover human remains with dignity as a non-discretionary action.

In February of 2011, the USAF contracted, planned and submitted an application to access the site across Federal public lands, to locate and recover any remaining human remains and mitigate the site to a natural condition. The completed application was received by the GFO on March 7, 2011, and the BLM is now analyzing the impacts of the USAF's plans on the environment and the wilderness characteristics of the area as required by law (section 1.3).

### **1.1 BLM's Purpose and Need**

The purpose of the action is to provide the USAF with access from the trailhead located at approximately milepost 80 of the Denali highway South to a crash site located along the Watana Creek, a total of 14.3 miles on public land managed by BLM. The need for the action is established by BLM's responsibility under FLPMA to respond to a request for a ROW grant for access over existing BLM trails and to perform clearing along the trail to provide a travel route that accommodates their equipment and supplies to perform their recovery operations, and exclusive control to approximately 290 acres for their recovery operations. The USAF intends to retrieve crash debris related to the November 2010 aircraft accident, and exclusive control of the site is requested because military security measures require that only authorized personnel access the debris.

### **1.2 Decisions to be Made**

The decisions to be made are whether to issue of a right-of-way grant for a term of three years to the USAF for access over a total of 14.3 miles on an existing route on public lands managed by the BLM, and a right-of-way allowing exclusive control of 290 acres of land at the crash site for recovery operations. If the decision is made to grant these ROWs, then appropriate terms and conditions will also be a part of the decision.

### **1.3 Decision Framework and Policy**

The East Alaska Resource Management Plan (EARMP) of September 2007 and the Federal Land Policy and Management Act (FLPMA) provide the overall long term management direction for the BLM Glennallen Field Office. The EARMP and FLPMA are the decision documents and legal basis for the integrated long term resource planning on BLM Glennallen Field Office managed lands. They establish the direction and goals for the BLM to follow for the management of these lands and resources. The proposed action and alternatives are consistent with the EARMP and FLPMA. Specifically, the proposed action is consistent with the following sections of the EARMP:

## I. LANDS AND REALTY

### *I-1: Goals*

- Provide a balance between land use (rights-of-way, land use permits, leases and sales) and resource protection that best serves the public at large.

## T. TRAVEL MANAGEMENT AND OHV USE

### *T-1: Goals (OHVs)*

- Manage trails to minimize resource impacts and reduce user conflicts.
- Manage OHV use associated with permitted and development activities to provide for access while protecting resources

The proposed action would be subject to an array of laws, regulations, and acts to include:

- Alaska National Interest Lands Conservation Act of 1980 (ANILCA) Section 810
- National Historic Preservation Act as Amended 1992
- The Bald Eagle Protection Act of 1940 (as amended 1959, 1962, 1972, and 1978)
- Migratory Bird Treaty Act of 1918 (as amended 1936, 1960, 1969, 1974, 1978, 1986, and 1989)
- North America Wetlands Conservation Act of 1989 (as amended 1990 and 1994)
- Executive Order 11987 of May 1977 (Exotic Organisms)
- Executive 11990 of May 1977 (Protection of Wetlands)
- Secretarial Order 3310 of December 2010, Protecting Wilderness Characteristics on Lands Managed by the Bureau of Land Management

### **1.4 Land Status**

The crash site is located on public lands managed by the BLM. The land is currently selected by the State of Alaska.

The existing access trail traverses both public lands managed by the BLM as well as lands owned by the State of Alaska (Figure 1). The BLM managed lands are also selected by the State of Alaska. The initial portion of the trail from the Denali Highway to the unnamed lake south of Butte Creek is a State of Alaska conveyance priority one.

There are no Alaska Native Claims Settlement Act (ANCSA) selections on any lands affected by the proposed action.

### **1.5 Scoping and Issues**

Public notice for this EA was posted on March 17, 2011, on the BLM Glennallen Field Office Website NEPA log: [HTTP://WWW.BLM.GOV/AK/ST/EN/INFO/NEPA/GFO\\_NEPA\\_REGISTER.HTML](HTTP://WWW.BLM.GOV/AK/ST/EN/INFO/NEPA/GFO_NEPA_REGISTER.HTML). No comments have been received.

An interdisciplinary team was assembled and met on March 8, 2011. Internal scoping revealed the following as issues to be addressed in the EA:

- Stream crossings – Riparian degradation;
- Hunting Season – State Subsistence use in the area;

- Non-native invasive weeds and potential for their spread;
- Travel management – trail widening to reach the site, trail reroutes to reach the site, improved access throughout the area;
- Archaeology – Site protection for cultural/historical sites along the route;
- Impacts to Lands with Wilderness Characteristics (LWC).

## 2.0 Proposed Action and Alternatives

### 2.1 Applicant's Proposal

The USAF is requesting a right of way to access the site where the USAF F-22 jet crashed in November 2010. The crash site is located on federal lands managed by the BLM. The USAF is requesting authorization to access the crash site via an overland route, set up a camp near the crash site, conduct initial search and recovery operations for human remains and aircraft parts, and conduct environmental characterization and cleanup. Excavation of the crash site is required to complete recovery and cleanup operations. Access to the site would be via an existing trail (Figure 1). The Air Force is proposing to utilize this existing trail by making minor improvements and to maintain the trail during the recovery/cleanup efforts so as to minimize any permanent environmental impact.

#### Site Access

The Air Force and its contractors would access the crash site via an overland route on an existing trail. The crash site is approximately 17.5 miles from the Denali Highway via the trail system. The proposed access route to the site begins 53 miles along the Denali Highway east of Cantwell. At this point, the access trail begins on a southerly course towards Snodgrass Lake.

Access would be conducted using tracked vehicles and mobilization would occur prior to the ground thawing to minimize environmental impacts. Mobilization activities are anticipated to occur during April 2011 in order to take advantage of the frozen ground and reduce impacts to the surrounding landscape. The trail will be reconditioned using a D6 Envirogroomer (Figure 2) and Tucker Sno-cats with trail groomers. Once the trail has been prepared using the groomer, a Caterpillar 120 excavator, Caterpillar D6 dozer, and Caterpillar 299 skidsteer would be driven to the site. Arctic Steiger tractors (Figure 3) with wide rubber tracks and tracked trailers would be used to haul the camp equipment, storage containers, spill containment equipment, and fuel tanks (empty during transport) to the site. Snow machines and/or ATVs (6-wheeler or Argo) will be used for personnel transportation at the crash site.

If mobilization cannot be accomplished prior to spring thaw, then a Caterpillar D6 Enviro-Groomer would be used to make minor trail improvements, clear brush in the lower reaches of the trail, potentially reshape water crossings, and reroute parts of the trail to avoid wetland areas currently impacted by the existing trail. All rerouting will be conducted under the direction and guidance of the BLM Glennallen Field Office. Low water crossings would be forged during summer access and those crossings would be made perpendicular to the water bodies. In the winter, Butte Creek would be crossed directly over the frozen surface. In the summer, the Butte Creek crossing will be assessed as to the best way to cross. Possible ways include direct crossing on a gravel streambed during periods of low water, and temporary bridge during periods of high water. Temporary bridging consisting of 8'Wx14'Lx1'D crane mats would be utilized to cross smaller creeks during mobilization, but the trail may also be rerouted to avoid these wet areas. GeoBlock or a similar product

would be utilized at other wet areas encountered along the trail to stabilize the areas and prevent significant trail damage. Some of the equipment and fuel would be mobilized to the site using helicopters. Helicopter

transport is riskier to personnel and is highly weather dependent.

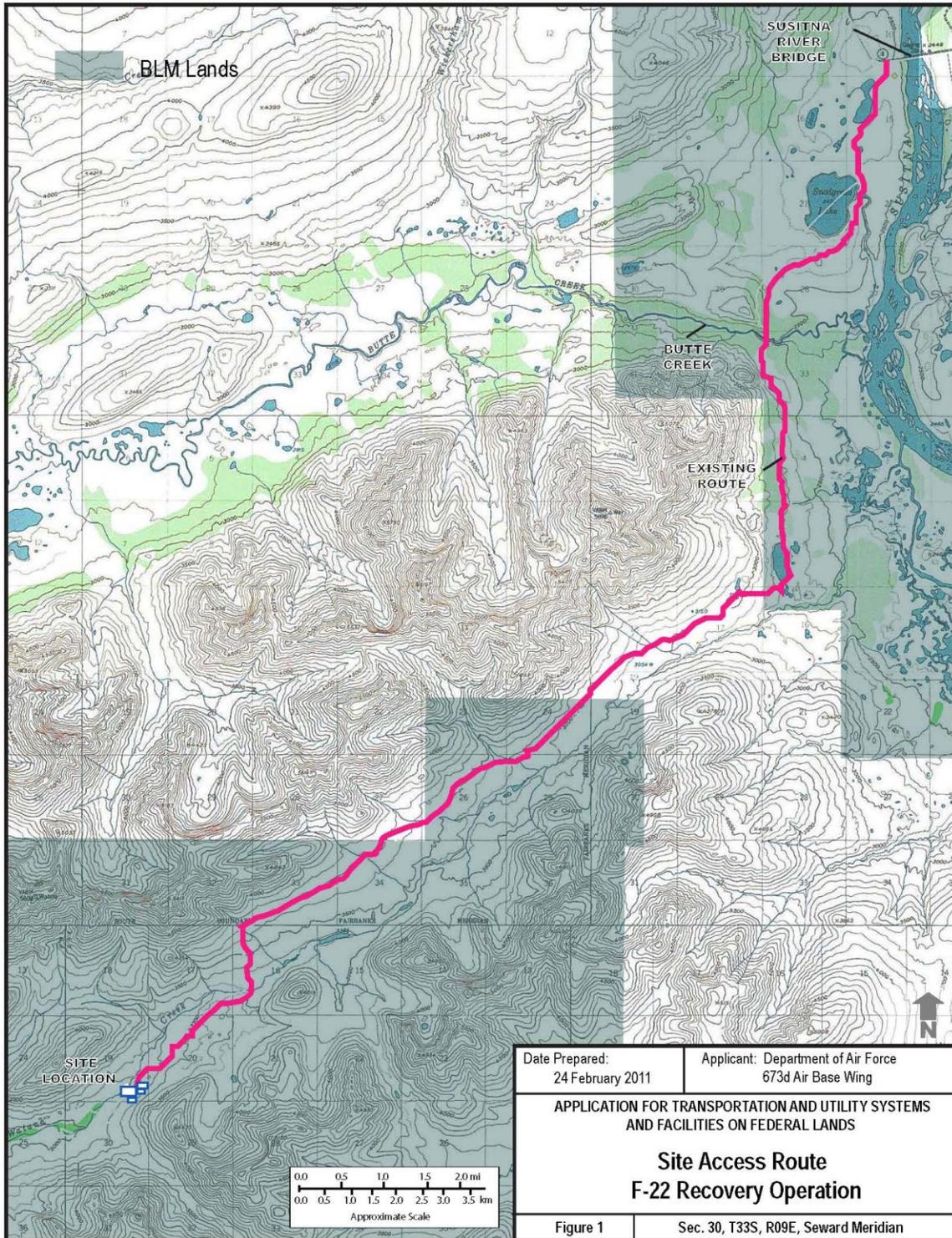




Figure 2. D6 with envirogroomer.

Demobilization would take place following completion of site activities. Alternatives being considered are immediate demobilization from the crash site via the overland trail, or demobilization after the ground freezes and sufficient snow cover is present to minimize potential damage to the environment.

All work will be performed according to all applicable OSHA, EM 385-1-1, and contractor safety standards which include but are not limited to: competent person training for operators, First Aid/CPR training for supervisors, Level D PPE at all times including safety glasses, hardhats, safety toe boots, and safety vests. All vehicles will have first aid kits, fire extinguishers, and either mounted or hand held VHF radios. Spill kits will accompany all equipment and personnel will be trained in spill response activities. Additionally, all work will be performed in accordance with an approved Health and Safety Plan for the recovery operation.



Figure 3. Arctic Steiger tractor with trailer.

### Camp Facilities

The Air Force would mobilize a temporary camp to house up to 24 personnel required to perform aircraft recovery operations and site restoration activities. All camp operations would be conducted in accordance with the ADEC Camp Applications Permit. Camp facilities would be hard-sided modular units placed inside a bermed containment area on a 20-mil liner. Site preparation may require grading to allow a level area to set up and maintain the camp. Camp facilities may cover an area less than 1 acre in size.

Fuel would be stored in double-walled tanks that are placed within portable secondary containment units set up at the site. Maximum capacity for on-site fuel storage would be 2500 gallons. Generators would be used at the camp site and would also be placed in secondary containment. A spill response plan would be prepared. Spill response materials would be available at the camp. Spill response training would be conducted for site personnel; a spill response drill would be executed.

As currently planned, human waste would be gathered in the specialized “Pacto” toilets, which compress the waste. The waste would then be incinerated in the ADEC-approved camp incinerator along with inert trash.

Disposal of gray water would be through either direct discharge to the ground surface or an ADEC-approved absorption field would be installed. The selected option would be designed in accordance with ADEC’s *Water Program Guide: Graywater Treatment and Disposal Systems*.

Drinking water would be obtained from Watana Creek, upstream from the operations area. The water would be filtered and treated in accordance with ADEC regulations.

Ash from the incinerator would be stored in a locking conex container and would be removed from site regularly. All non-recovery site hazardous and non-hazardous waste (i.e. soil contaminated with fuel from the aircraft) generated would be properly labeled, transported, and disposed according to RCRA CESQC regulations.

Helicopter aerial transport to and from the recovery site would be required occasionally to bring in personnel and to remove human remains and sensitive aircraft components. There may also be certain tools and supplies necessary to support crash site operations that may be transported via helicopter aerial transport.

#### Search and Recovery Efforts

Initial efforts will be to perform surface sweeps in the immediate vicinity of the crash site to search and recover human remains, personal effects, and sensitive aircraft parts. These searches will be conducted on foot and personnel will perform exhaustive search of small grid areas. Recovered remains and parts will be handled in accordance with prescribed procedures. Surface debris will be removed by hand or excavator depending on weight/size. Any subsurface debris will be removed via excavator while minimizing impacts. The total grid search and recovery will be conducted within an approximate 1600-foot radius of the impact crater. This area is approximately 185 acres. Exclusive use rights to the area surrounding the crash site are requested to be a 2000-foot radius, or approximately 290 acres. The Air Force estimates that these initial ground sweeps will take approximately 2 weeks to complete.

Upon completion of the ground sweeps, excavation will begin at the crash site for buried aircraft items. The impact crater is about 100 feet from a creek flowing down the valley and high groundwater is expected. The Air Force expects to excavate and de-water the crater to recover aircraft parts. All de-watering activities will be coordinated with the ADEC, to include treatment to remove contaminants if indicated by initial chemical testing. Contaminated material to include water, gravels, and soils will be handled, stored, and disposed of in accordance with ADEC regulations and these processes will obtain ADEC approval prior to implementation.

Once the analytical data from the environmental investigation become available, they will be presented to ADEC and BLM. Cleanup levels will be developed for the site in accordance with 18 AAC 75. These cleanup levels will be protective of human health and the environment.

USAF would then develop a Remedial Action Plan that would be submitted to ADEC and BLM for review and approval. The plan would propose remedial techniques to address the fuel contamination. Following ADEC and BLM review and comment, USAF would implement cleanup at the site. The purpose of cleanup will be protection of human health and the environment; this includes addressing contamination migration to groundwater and protection of Watana Creek.

Upon completion of the aircraft recovery, environmental site investigations, remedial actions, and site restoration would proceed with coordination and approval by ADEC. Environmental investigation would be conducted to determine the extent and types of fuel contamination from the crash remaining at the site. Draft copies of all work plans would be submitted to BLM and ADEC for comment/review/approval. At the completion of these activities, the camp and equipment will be consolidated to a location ready to demobilize.

Human remains and aircraft parts would be recovered from the crash site. Environmental site characterization, remediation, and restoration would also be performed. Mobilization of equipment is

anticipated to take place in April 2011 to take advantage of the frozen ground and minimize impact to the environment along the access route. Demobilization is anticipated to take place in late summer over an improved trail or winter 2011 when the ground is frozen. The work zone is approximately 185 acres. Trail improvements would occur on approximately 17.5 miles of trail.

The project needs are met by recovery of human remains and aircraft parts, as well as, environmental characterization and cleanup to eliminate human health and environmental risks.

#### Site Restoration

Site restoration will be conducted by placing clean fill in the impact crater, replacing excavated soil, replacing excavated sod and/or topsoil's re-grading the site, fertilizing and re-vegetating with commercially available native seed as specified by BLM. The proposed excavation techniques will be designed to preserve the available topsoil to the extent practicable. The excavation site will be regarded to approximate original contour the surface left rough, and re-vegetated to minimize erosion stabilize the area and to accelerate the establishment of vegetation.

#### Design Features or Mitigation

Best management practices would be utilized to minimize environmental impacts. Silt fencing will be placed down gradient from excavations to protect the surrounding environment. Straw wattle will be used in other areas where erosion may be a concern. Best management practices would be properly maintained, and revised as appropriate.

### **2.2 Alternatives being considered by the BLM**

The NEPA requires that a reasonable range of alternatives to address the issues be developed for analysis. Based on the issues, the interdisciplinary team developed four alternatives for consideration.

Alternative 1: Is the No Action alternative as required by NEPA.

Alternative 2: (The BLM Proposed Alternative) This alternative is the action as proposed by the applicant with the following travel restrictions; winter-time access (defined as 6" of frozen ground or 12 inches of snow) for heavy equipment, and year-round access for ATV's and tracked vehicles less than 8-feet in width (Figure 3).

Alternative 3: This alternative is the action as proposed by the applicant with year-round overland access with no size restrictions.

Alternative 4: This alternative analyzes the cleanup of the camp site as proposed by the applicant, but with all access to the crash site being limited to air only access.

#### **2.2.1 Alternative 1- No Action: Do not approve the right-of-way across public land**

The No Action Alternative would be to deny the applicant's request for a right-of-way to conduct search and recovery operations, as well as follow-up environmental cleanup at the crash site. This action would be inconsistent with BLM policy and procedures regarding similar recovery operations conducted on federal lands throughout the United States.

This alternative may allow contaminant migration, increasing the volume of contaminated media. Risks to human health and the environment would remain because exposure routes to contaminants would still exist,

resulting in potentially damaging effects to humans, the environment and potential subsistence resources. This alternative does not meet the primary project need of the USAF to recover human remains and sensitive aircraft parts, nor does it meet the goal of addressing environmental contamination in compliance with State and Federal regulations.

**2.2.2 Alternative 2- The action as proposed by the applicant with the following travel restrictions; winter-time access (defined as 6" of frozen ground or 12 inches of snow) for heavy equipment, and year-round access for ATV's and tracked vehicles less than 8-feet in width (Morooka's).**

The BLM Glennallen Field Office is considering authorization of a right-of-way for the applicant to access the site via an overland route, set up a camp near the crash site, conduct initial search and recovery operations for human remains and aircraft parts, and conduct environmental characterization and cleanup. Excavation of the crash site would be permitted to complete recovery and cleanup operations. Access to the site would be via an existing public trail, which is well established and frequently utilized by the public via snow machine, all terrain vehicles and trucks for recreational purposes year-round. The USAF is proposing to utilize this existing trail by widening and improving the trail, and by maintaining the trail during the recovery/cleanup efforts so as to minimize any permanent environmental impact.

This alternative would require vegetative clearing of 15-ft in certain areas to allow the winter passage of large equipment. The drivable trail surface for summer travel would be a maximum of 10-ft. Required Operating Procedures (ROP) from the EARMP that would apply to this alternative have been identified and are included as Exhibit 1.



Figure 4. Morooka. Tracked vehicle proposed for year round access.

**2.2.3 Alternative 3 - The action as proposed by the applicant with year-round overland access with no size restrictions.**

This alternative would take actions very similar to the proposed action, with modifications to include trail improvements to allow for access to be performed at any time of year without causing environmental

damage. The use of geo textiles, culverts and water diversion methods that the BLM has utilized on other trails would be the final product with this alternative.

This alternative would require vegetative clearing of 15-ft, resulting in a drivable surface of 15-ft to allow the year round passage of large equipment.

Required Operating Procedures (ROP) from the EARMP that would apply to this alternative have been identified and are included as Exhibit 1.

#### **2.2.4 Alternative 4 – The crash site cleanup and support camp as proposed by the applicant, access to the crash site limited to air only.**

This alternative would require the applicant to fly all equipment, crew and products needed to mitigate the crash site by helicopter. This alternative would deny the request for overland crossing, removing impacts to the environment from travel with heavy equipment, stream crossings and still accomplish the site mitigation and environmental cleanup. The factors involved in this alternative are time, costs and increased risks of another accident.

Required Operating Procedures (ROP) from the EARMP that would apply to this alternative have been identified and are included as Exhibit 1.

#### **2.3 Alternatives Considered but Eliminated From Detailed Analysis**

No alternatives were eliminated from detailed analysis.

### **3.0 Affected Environment**

This section describes the existing environment and the current conditions of important resources in the area of the recovery site that would be affected by any of the alternatives under consideration. Topics examined include:

- Lands with Wilderness Characteristics
- Subsistence and Wildlife
- Vegetation and Invasive Weeds
- Travel Management and Recreation
- Archaeology
- Riparian, Fisheries and Hydrology

For more information on the affected environment, please refer to the East Alaska Resource Management Plan and Final Environmental Impact Statement.

#### **3.1 Lands with Wilderness Characteristics**

The proposed action actually affects two separate pieces of public lands, each of which are different. One section is referred to as the Butte Creek area, and the other section is referred to as the Watana Creek area.\

The proposed lands in the Butte Creek area were inventoried utilizing Recreation Opportunity Spectrum (ROS) classification in conjunction with the development of the EARMP. The project area was inventoried as Semi-

primitive, motorized and is characterized by a predominantly unmodified natural environment of moderate to large size. Evidence of man does exist, as the trail being proposed for access does appear to have been initially constructed and periodically maintained with a bulldozer (Figure 5). Concentration of users is low during some seasons, but there is often evidence of other area users. During the hunting season, it is likely that you would encounter other users. The area is accessible to specialized OHVs, but generally, is not accessible to most street four-wheel drive vehicles. OHV trails other than the one being proposed for access exist in the general vicinity. Sights and sounds of the road system may or may not be dominant. Some portions of the area may be distant from road systems, but all portions are near motorized trails. Vegetation and soils are predominantly natural but localized areas of disturbance exist.

In accordance with BLM Manuals 6301 and 6303, the Butte Creek area of the proposed action was analyzed for wilderness characteristics. The area currently meets the size threshold of over 5,000 acres. However, the land is currently selected by the State of Alaska (priority one). It is likely that at least some parts of the existing trail will be conveyed to the state of Alaska, with unknown effects on the size criteria.



Figure 5. Typical trail section near Butte Creek.

The second criterion to be considered LWC is naturalness. As outlined above, this area has extensive impacts of humans. The area is in close proximity to two lodges, the Denali Highway, an air strip, and a major river that is used by powerboats. Furthermore, there is a network of OHV trails that receive use year round. Sights

and sounds of humans are pervasive. Therefore, the BLM determines that this area does not meet the naturalness criterion to be considered Lands with Wilderness Characteristics. Effects to wilderness characteristics were not analyzed for the Butte Creek area of the proposed action.

The proposed lands in the Watana Creek area were also inventoried utilizing Recreation Opportunity Spectrum (ROS) classification in conjunction with the development of the EARMF. The project area was inventoried as Semi-primitive, motorized and is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but there is some evidence of other area users. The area is accessible to specialized OHVs but is not accessible to most street four-wheel drive vehicles (Figure 6). Sights and sounds of the road system are generally not present. The approximately 10.3-mile trail proposed for access is the only trail known to exist in this block of public land over 50,000 acres in size. Vegetation and soils are predominantly natural but localized areas of disturbance may exist.

The Watana Creek area (>50,000 acres of contiguous public lands) currently meets the size threshold of over 5,000 acres. The land is currently selected by the State of Alaska, however it is currently a low priority (priority 14). It is unknown at this time whether the lands will be conveyed to the state or not. Based on an analysis of the Watana Creek block in accordance with BLM Manuals 6301 and 6303, wilderness characteristics are present. Effects to wilderness characteristics will therefore be analyzed as an issue for the proposed action for the Watana Creek area.



Figure 6. Typical trail section in the Watana Creek block.

### 3.2 Subsistence and Wildlife

The crash site and surrounding valleys are popular subsistence hunting areas. The site falls within Game Management Unit 13: Nelchina-Upper Susitna, Subunit 13E. The BLM manages the federal subsistence hunt in Unit 13. In Subunit 13E, federal lands open to subsistence hunting exist in Denali National Park. There are no federal lands open to federal subsistence hunting in the vicinity of the USAF F-22 crash site. However, State Tier I subsistence hunts and community harvests occur in the vicinity of the crash site.

Between 2004 and 2009, there have been 2,337 caribou harvested in the State subsistence hunts in Subunit 13E, averaging 390 caribou harvested per year, with a high of 664 caribou harvested in 2006. For moose, there have been 829 moose harvested in the State hunts in Subunit 13E between 2004 and 2009, averaging 138 moose harvested per year, with a high of 165 moose harvested in 2008.

State caribou season is Aug 10 – Sept 20 and Oct. 21 – Mar 31. State moose season is Aug 20 – Sept 20 and Sept 1 – Sept 20.

During the site visit, the following terrestrial mammals were observed: caribou, moose, and a variety of small mammals such as squirrels. The crash site is in the Nelchina Caribou Herd (NCH) traditional migratory route and within range of recent calving events, however the proposed action is not within the NCH calving area as

defined by the EARMP. To the west of the crash site, in the Talkeetna Mountains, is the core NCH calving area. In 2010, a photo census of the NCH revealed approximately 40,000 caribou in the herd. Hunting interest in the herd is high, given the large caribou population and the accessibility of the area from the Denali Highway to the north. With moose and caribou in the vicinity of the crash site, predators are likely to be present. These predators include wolves, grizzly bears, and black bears. Small mammals and upland birds also inhabit the area. These include snowshoe hares, red squirrels, microtine rodents, mustellids, grouse, ptarmigan, and other passerines. There are no known trumpeter swan nests in the area of the proposed action.

### **3.3 Vegetation and Invasive Weeds**

Vegetation along the access route varies from forest and woodland types to areas of open marsh and wetlands. The forest vegetation types contain spruce, willows and alder species in the overstory with shrub and herbaceous plants as ground cover. The open marsh and wetlands vegetation types contain grasses, sedges and aquatic species. As the access trail progresses up the Watana drainage and elevation increases, alpine tundra vegetation exists. Vegetation at the crash site is predominately willow and alders shrub type with mesic herbaceous plant species. The presence or absence of rare and/or sensitive plants species in the area is presently unknown. It is assumed that the project area is void of the presence of non-native invasive plants.

### **3.4 Travel Management and Recreation**

Recreational uses could include backpacking, ATV use, hunting, fishing, sightseeing, and winter recreation. These activities are popular along the Denali Highway, but usage decreases with distance from the highway.

The project location lies within Extensive Recreation Management Area (ERMA) lands managed by the BLM. While recreation use is present and varied in nature, ERMA lands are not as intensely managed as other BLM lands for recreation purposes. Due to the State of Alaska selection on surrounding lands, travel management within this area is managed under State of Alaska Generally Allowed Uses, 11 AAC 96.020 (Appendix 1). The issuance of a Right of Way to the project applicant will omit them from these regulations for the duration of the Right of Way.

The predominant uses within the area are travel by OHV and other recreational pursuits supported by OHV travel. Snowmachine use is also present in the winter months for recreational purposes. The trail providing access to the project area is well defined and historical in nature. Conversations with long time residents of the area indicate the trail has been present within the landscape for over forty years. Visitor use at the trail head was estimated at 1600 users during 2010. (BLM RMIS)

The existing trail begins at the Susitna River bridge and generally heads south for 7.2 miles. This portion of the trail is well established and frequently utilized by the public. It is utilized by snow machine and all terrain vehicles for recreational purposes year round. Based on current knowledge, this part of the trail can be identified by a visible bulldozer cut one to two feet in depth and seven to eight feet wide.

The foothill section of the trail is primarily in alpine forest with willow and alder brush encroaching from the sides and no appreciable elevation gain. One hill at 6.5 miles in from the road consists of a short 15% grade and several curves before leveling out at an upper bench.

The trail continues through the alpine forest as it turns southwest at mile 7.2 and climbs into the unnamed valley that leads to the crash site. The remaining 10.3 miles of trail are located along the northwest shoulder of the valley on open tundra and scrub willow. This portion of the trail is not nearly as defined as the initial portion, and does not receive as much use as the first 7.2 miles. The trail appears to traverse gravelly soils that may be usable year-round for site access.

### **3.5 Archaeology**

Although this area has not been previously inventoried for archaeological resources, there are a number of previously recorded, prehistoric archaeological sites near the eastern and western sides of the Watana Creek valley in the vicinity of the Susitna River. The area is within the calving area for the Nelchina Caribou herd and offers access to fresh water as well as elevated landforms, which provided prehistoric hunters with campsites and game spotting locations. These types of short term hunting camps are common in the surrounding Susitna River Valley and can be found on either deflated, eroded surfaces or in well stratified archaeological sites on low ridges.

### **3.6 Riparian, Fisheries and Hydrology**

The water quality parameters and stream habitat characteristics were collected during a 2003 Alaska Department of Fish & Game (ADF&G) fish and habitat inventory in Butte and Watana Creek.

The sampling location of lower Butte Creek had a measured stream width of 120', thalweg depth of 2', and stream gradient 1.0%. The dominate stream substrate was cobble and the stream channel was characterized as an entrenched meandering riffle/pool with high width/depth ratio. Water quality parameters collected included: water temperature 9.2 °C, pH 7.5, dissolved oxygen 12.34 ppm, and conductivity 201.0 µS/cm.

The sampling location of upper Watana Creek Butte Creek had a measured stream width of 60', thalweg depth of 2.3', and stream gradient 1.0%. The dominate stream substrate was gravel, the stream channel was characterized as a low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains. The stream was too deep to wade for an effective fish inventory. Water quality parameters collected included: water temperature 10.2 °C, pH 7.49, dissolved oxygen 11.38 ppm, conductivity 186.0 µS/cm, and turbidity 1.0 NTU.

Water resources at the USAF F-22 recovery site include groundwater and surface water. However, there are no known groundwater wells in the area. Three small seeps are located above the impact crater and flow into the impact crater. Groundwater may also be flowing through the impact crater. The shallow bedrock likely controls groundwater flow. Watana Creek flows down gradient of the crash site through the valley, flowing to the southwest.

The access trail runs just east of a small, unnamed lake and past the east bank of Snodgrass Lake. It then continues southwest for a mile and a half before crossing Butte Creek. The trail then continues south and passes the east bank of another unnamed lake. From there, the trail follows the north bank of the valley, traveling to the southwest. The trail then descends to the valley floor and crosses the headwaters of Watana Creek, before paralleling the creek and flowing past the crash site.

A water sample collected from the impact crater in November (or December) 2010 indicated benzene concentrations above drinking water standards. No other contaminants were detected at concentrations above drinking water standards.

The crash site is about 100 feet from Watana Creek, and the proposed access route crosses Butte and Watana Creek. Butte and Watana Creek are known to support slimy sculpin and Arctic grayling. Chinook salmon have been documented in the Susitna River watershed above the mouth of Watana Creek in Kosina Creek and the Oshetna River. However, no salmon have been documented in either Butte Creek or Watana Creek.

## **4.0 Environmental Impacts**

### **4.1 Effects of Alternative 1: No Action**

#### **4.1.1 Wilderness Characteristics Effects**

No direct effects to wilderness characteristics are anticipated from the no-action alternative. Only the Watana Creek block has wilderness characteristics, and the no-action alternative would not have any impacts on those. Nothing in the no-action alternative would preclude the BLM from designating the area as “Wild Lands” if it were later deemed appropriate.

#### **4.1.2 Subsistence and Wildlife**

No direct effects to subsistence and wildlife are anticipated from the no action alternative. Subsistence hunters will continue to access the area for subsistence activities.

#### **4.1.3 Vegetation and Invasive Weeds**

Direct Effects: There would be no disturbance to the existing vegetation along the access route and crash site. Vegetation impacted by the crash itself, including contaminates from the aircraft and petroleum contents would be adversely impacted. Remnant petroleum contaminates not volatilized from crash would remain on site contaminating the soils and allowing existing vegetation to uptake contaminates over time resulting in impaired growth and die off. The existing vegetation not impacted from the crash would continue to grow in the natural setting providing the benefits of the ecosystem. Any rare or sensitive status species present would go undisturbed and there would be no potential for the military to cause the introduction and/or spread of non native plant species into the area.

#### **4.1.4 Travel Management and Recreation**

No short term direct effects to travel management and recreation are anticipated from the no action alternative. No management of ATV trails usually results in trail widening as users attempt to go around sections of the trail that are unsustainable. Long term, the trail conditions may degrade over time if more people access the area with larger OHVs and trail widening occurs.

#### **4.1.5 Archaeology**

No direct effects to archaeological resources are anticipated from the no action alternative.

#### **4.1.6 Riparian, Fisheries and Hydrology**

Direct Effects: Any unburned aviation fuel or other hazardous materials residual to the crash have the potential to negatively affect water quality or the health of these resources. If allowed to remain they likely will be transported into other flowing water bodies requiring more remediation of other areas and resources.

### **4.2 Effects of Alternative 2 (The Proposed Alternative): Limited overland travel alternative**

#### **4.2.1 Wilderness Characteristics**

Wilderness characteristics in the Watana Creek block will be impacted by the proposed action. The temporary camp and cleanup will have a negative impact on the natural appearance of the area. This impact is expected to be short term (<5 years). The area will be restored to its original state, and the shrub vegetation is expected to be established within 5 years.

Trail impacts are expected to be minimal, and again are expected to be short term. The current trail is barely noticeable on a landscape scale. At the end of the proposed action, the trail is not expected to be any wider than it is currently (8-10 ft). Minimal brushing will have to be done to accommodate year round passage of the smaller equipment. The larger equipment (>8 feet wide) will be brought in over the winter on frozen and/or snow covered ground. Past experience has shown that low numbers of passes over tundra in such conditions are rarely noticeable after a couple of years.

Trail improvements may have negative impact for some users due to the perceived easier access that would allow more users. However, the positive benefits of proactive trail treatment that will prevent trail widening would have a long term positive impact on the naturalness of the area.

Cleanup of the crash contaminants will enhance the wilderness characteristics due to the fact that the site will be restored to its original condition and there will be no long term effects from environmental hazards.

Through mitigation and monitoring these lands will be preserved with measures to minimize impacts on wilderness characteristics. The proposed action would create impacts to wilderness characteristic on already existing trail. The action will not impair BLM's discretion to designate the areas as Wild Lands in a future land use planning process or implementation level planning.

#### **4.2.2 Subsistence and Wildlife**

Indirect Effects: The proposed trail traverses lands selected by the State of Alaska under the Alaska Statehood Act. However, there is a likelihood that the project area in the Watana Creek block will become unencumbered BLM lands in the future. At that time, these lands will be open for the use of federal subsistence hunting. This trail will provide a convenient access route for subsistence hunters and recreational hunters in search of big game. How the improved access will translate into hunting pressure on subsistence species is unknown, however, the Alaska Department of Fish and Game and the BLM work cooperatively to ensure a sustainable population of big game animals for subsistence and recreational hunters regardless of access.

Under this alternative, exclusive use would of an area 290 acres would be granted to the parties involved in the cleanup and investigation. If the cleanup continues into the fall, it is likely that some hunters would be

displaced from their traditional hunting areas. There is evidence of a hunting camp within a couple of miles of the crash site, and it is likely that those hunters have utilized the area that would be encumbered by the exclusive use. However, the cleanup and investigation are expected to be completed prior to the hunting season, so this impact is unlikely. In the worst case scenario, a few hunters would be displaced for a maximum of one hunting season.

At the crash site, as recovery and cleanup is underway, it is likely that caribou and other wildlife will be encountered at close range. Caribou will typically avoid human interaction unless habituated to the stimulus or the stimulus is masked by other factors. Intentional harassment of wildlife should be avoided. It is also likely that bear-human interactions will occur at the project site, especially if food and trash are unsecured.

Stipulations to minimize impacts:

1. Signage must be posted along the trail to indicate that there is a closed area at the crash site where hunting will be prohibited for the duration of the project.
2. Intentional harassment of wildlife is prohibited.

#### **4.2.3 Vegetation and Invasive Weeds**

Direct Effects: The existing access route averages 10 ft in width. Vegetation would be cleared and/or brushed back to a total width of 15 feet to accommodate the movement of personnel, equipment and supplies during winter months. The access trail may be rerouted in some areas which will require clearing existing vegetation to a width of 15 ft. The drivable surface of the road would remain at 8-10 ft. The calculated area of vegetation affected by access improvements under this alternative is approximately 20 acres total. The adverse impacts of clearing and brushing along the access route including re-routes for winter only access would include easier unimpeded access, facilitating the introduction and spread of noxious weeds, and minimal crushing, breaking, and trampling of vegetation under the snow.

The clearance needed for this passage of the large equipment will require extensive trail widening in the area of Butte Creek. BLM estimates that a minimum of 100 white spruce trees greater than six inches in diameter will need to be removed in order to facilitate that passage. After the winter passage of the wide, heavy equipment, the brush (alder and willow species) will recover aggressively (3-5 years). The large spruce trees, however, will need 60-80 years to re-establish and fully recover. This impact is the same for alternative 2 due to the fact that the same number needed to be removed to provide one time access.

The proposed actions at the crash site include the temporary establishment of a 24 person man camp facility (including camp area, equipment staging/fuel storage area, clean up area and debris staging area), to accommodate the search and recovery operations, and to complete the environmental remediation and restoration of the site. This action would occur during the summer months and will require the clearing of approximately 10 acres and the manipulation of approximately 150 acres of shrub vegetation type. Impacts from the clearing and manipulation of vegetation may include clearing and removal of existing vegetation, brushing, crushing, breaking, and trampling of vegetation, reducing the capacity to naturally regenerate, increase erosion and runoff, creation of disturbance conditions favoring the introduction, establishment and spread of non-native invasive plants, increased soil compaction that will stress plants and associated roots, resulting in impaired growth and/or die back. Erosion, especially on steep slopes, can prevent the natural

reestablishment of vegetation and challenge the environmental remediation and restoration efforts. This alternative also has the potential to impact any existing rare or sensitive status species that may be present.

The total surface disturbance (disturbance to bare soil) under this alternative is approximately 30 acres (25 acres on BLM managed lands) and total vegetation disturbance of 185 acres (155 acres on BLM managed lands). Most of the surface disturbance will likely occur in those areas where the access trail has been re-routed within the Butte Creek block, and at the crash site for camp improvements and remediation and restoration efforts.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. Ensure the cleaning of all equipment accessing the project area and utilized in operations prior to mobilization to reduce the likelihood of introducing non-native invasive plants. Sanitizing all equipment that may exit and return to the site is required.
2. Submit to the BLM State Office for approval the native seed mixture and fertilizer to be used in restoration activities. Native seed mixture must be certified weed seed free, and fertilizer must maintain the proper C:N ratio.
3. Invasive Weeds: Maintenance and monitoring for successful reclamation – NTE 5 years. Since preventive measures for providing weed seed free earthmoving machinery is limited due to the winter season, inventory for invasive weeds, monitoring for re-vegetation success and maintenance procedures will be performed for a period of up to 5 years after all operations have ceased on-site and until the access and recovery location has been determined to be successfully reclaimed by the BLM.
4. The use of straw wattles to decrease the potential erosional energy of water flow over the trail surface or crash site must be certified weed seed free straw.

#### **4.2.4 Travel Management and Recreation**

Direct Effects: The first five miles of the trail in the Butte Creek block will need extensive widening to facilitate the passage of the large machinery, even for winter-only travel. Furthermore, the rest of the trail will require trail mechanical treatment to allow year round passage of the smaller OHVs. In some cases, BLM has documented increased recreation use on trails after trail improvements have been made. Based on this, increased user numbers will likely result from this project.

Stipulations to minimize impacts:

1. While some increased use due to trail improvements is inevitable the placement of a temporary bridge at the Butte Creek crossing, to be removed upon project completion, would limit the improved access route to the first 4 miles of trail.

Direct Effects: Short term degradation of the trail system is expected in the summer months caused by overland OHV travel. The frequency and duration of this travel will define the intensity of impacts.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. A BLM official or designee will monitor trail construction or rehabilitation to ensure acceptable construction measures are applied

2. The use of geo synthetics or trail hardening panels may be required in support of trail maintenance activities
3. A small excavator( no larger than a Bobcat 334) and small bulldozer (no larger than a JD 450 LGP) will be utilized by the project proponent to ensure timely rehabilitation of damaged trail sections to ensure safe passage for the general public.
4. The trail shall be reduced to an 8 foot width or less with the use of mechanized equipment upon project completion.
5. Overland operations should avoid spring thawing periods. Overland travel should be avoided until June 1, 2011, or at such time the trail is free from snow and ice and seasonal runoff has dissipated.
6. Overland OHV travel should attempt to avoid operations during and after significant precipitation events. Typically a 24-48 hour “drying” period can alleviate possible impacts caused during precipitation events.

Direct Effects: The length and width of equipment being utilized in support of the project will require significant vegetation clearing and straightening of the trail in the Butte Creek block. Approximately 1.5 miles of trail to the north of Butte Creek and 0.5 mile of trail south of Butte Creek will be significantly altered.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. If sections of trail cannot be developed in a sustainable manner they shall be reclaimed by scarifying the trail bead and planted with native grass seed.
2. Woody debris and other natural vegetation will be utilized to construct natural barriers along reclaimed portions of trail
3. The trail shall be reduced to an 8 foot width or less with the use of mechanized equipment upon project completion

Indirect Effects: Trail improvements have had mixed results in increased trail usage. Trail usage during the hunting season seems to be more a factor of animal availability and tag distribution more so than trail condition. Based on this, we would not expect to see a long term increase in the area. However, there may be a short term increase in use due to hunters exploring what they perceive as a new trail. Traditional users may become displaced with a perception of overcrowding or infringement upon traditional use areas, however the surrounding area and Denali Highway offers hundreds of thousands of acres to be utilized for recreational purposes including OHV use.

#### **4.2.5 Archaeology**

Direct Effects: The proposed winter trail and associated heavy vehicle traffic have a small potential to adversely affect undiscovered heritage resources during the use or construction of the trail by the mechanism of repeated passes of heavy vehicles, which can displace snow and soil, eventually eroding frozen soils and negatively impacting cultural resources. The utilized or constructed trail is limited to areas that have the lowest potential to possess intact cultural resources, and avoid two specific areas identified through aerial photos as having the highest potential for cultural resources. The trail stays south of a series of low elevation glacial ridges identified in the Northwest ¼ of Sect. 26, T.22S., R.1W., FM. Additionally, ground disturbing work with heavy equipment at the crash site will stay north of a small ridge in the Northwest ¼ of section 29, T.33N., R.9E., SM.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. As soon as snow cover allows, an archaeological survey of the trail and it's immediate vicinity will be conducted to determine if any cultural resources have been negatively affected by previous access and to specify any additional areas for avoidance during summer or fall trail use.
2. If archaeological sites have been affected then the appropriate form of mitigation will be chosen in consultation with both the Alaska State Historic Preservation Officer as well as any affected Federally Recognized Tribes.

#### **4.2.6 Riparian, Fisheries and Hydrology**

Direct Effects: The crash site is about 100 feet from Watana Creek and most likely in the riparian zone. Unknown quantities of environmental contaminants may be present at the crash site, and have the potential to leech into Watana Creek, a known fish bearing stream. These pollutants will be cleaned up in accordance with ADEC regulations under this alternative. The exact amount and type of contaminants, is unknown, but the positive effects of the cleanup would be infinitely better than the no-action alternative.

The proposed action has the potential to affect 3,200 linear feet of riparian habitat within the proposed 185 acres of the grid search. Seven known stream crossings (6 on BLM managed lands) will also be affected by the proposed modifications to 17.5 miles (14.3 on BLM managed lands) of trail which will be widened to 8-10' in width. Specific data concerning the current condition and trend of the riparian-wetland habitat not impacted by the crash within the area proposed for use is not available; however, it is anticipated that a majority of the riparian – wetland habitat is in proper functioning condition as defined in BLM Technical Reference 1737-9. Impacts due to the site cleanup are expected to be less than 5 years as the vegetation recovers. Impacts to the stream crossings will be long term, but should not exceed the existing impacts.

USAF F-22 debris will be removed by hand or excavator depending on weight/size during the grid search. The camp site and grid search will result in some clearing, excavating, trampling of streamside vegetation, and hardening of pathways around the camps.

The majority of proposed overland access route is utilizing river and creeks as travel corridors. The proposed river and creek travel corridors are classified as riparian areas, wetlands, and also include the associated floodplains. The proposed access route is 17.5 miles (14.3 miles on BLM managed lands) in length and 8-10' in width (drivable surface). The access route will affect hydrologic connectivity (drainage patterns), changes in surface runoff, fine sediment production (erosion), slope stability and risks associated with stream crossing failures. Improperly designed or poorly maintained trails can modify natural drainage networks and can accelerate erosion processes that result in increased stream sedimentation, degraded aquatic habitats and altered channel morphology. Trail impacts generally increase as they become more connected, in terms of hydrology, to the natural channel network. Trails and their drainage systems typically act to intercept surface and subsurface runoff and route excess runoff into the channel system resulting in increased streamflow and sediment delivery to streams. In steep terrain, trails can increase the rate of hill slope failures and soil mass wasting. Fine sediments can be delivered to streams by erosion of trail surfaces. Many of the aforementioned effects of trails can be mitigated by design changes that disperse, rather than concentrate trail runoff and by gravel surfacing, or by designating undisturbed protective riparian buffers along streams to allow for filtering

of fine sediments.

Proposed use in and around the search grid and camp areas may be sufficient to alter the vegetation community type, distribution, root density, recruitment, reproduction, and/or survival of the natural vegetation to the extent that it may warrant a lower riparian-wetland condition classification. Because of this it is recommended that any additional clearing in and around the base camps and any new construction (e.g. outbuildings, fuel site, etc...) be located outside of the flood-prone area adjacent to streams, as well as, outside of the riparian zone. On most streams the flood-prone area is associated with <50-year return period flood and generally includes the active floodplain and low terrace. The flood-prone area can be estimated by identifying the elevation that corresponds to twice the maximum bankfull channel depth within a riffle section of the stream (Rosgen 1996). These mitigation measures will be applied in order to comply with the goals and requirements identified under BLM – Alaska’s Land Health Standards for riparian and wetland habitat and executive order 11990 – Protection of Wetlands. Recommended stipulations will be implemented to minimize the erosional, hydrological effects, and loss of riparian areas.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. Clearing of willows and alders in the riparian areas shall be avoided whenever possible.
2. Cross streams at right angles with straight approaches and gentle grades and locate in shallow riffle areas.
3. Streambed at crossings should have a firm rock or gravel base. Otherwise, install stabilizing material such as gravel or rubber mats on streambeds.
4. Stabilize approaches to bridge, culvert and ford crossing with aggregate or other suitable material to reduce sediment entering the stream.
5. Minimize channel changes and the amount of excavation or fill needed at the stream crossing.
6. Limit construction activity in the water to periods of low or normal flow. Keep use of the equipment in the stream to a minimum.
7. Design and construct trail to remove water from trail surface to keep the trail dry and structurally sound.
8. Divert trail drainage into undisturbed vegetation.
9. Minimize disturbance of vegetation while designing, constructing and maintaining trails.

### **4.3 Effects of Alternative 3 – Year-round Access**

#### **4.3.1 Wilderness Characteristics**

Wilderness characteristics in the Watana Creek block will be impacted by the alternative 3 more than alternative 2. The temporary camp and cleanup will have a negative impact on the natural appearance of the area. This impact is expected to be short term (<5 years). The Watana Creek block is more representative of high alpine tundra. This vegetation type doesn’t recover as fast lower elevation vegetation represented in the Butte Creek block. The area will be restored to it’s original state, and the shrub vegetation is expected to be established within 5 years.

Trail impacts are expected to be short term. The current trail is barely noticeable on a landscape scale. Under alternative 3, the trail would be widened significantly. Over time, multiple passes of the larger equipment (>8 feet wide) on non-frozen ground would result in a much wider and defined trail. Significantly more trail

stabilization work would have to be done in order to sustain the passage of the larger equipment. This would encourage users to bring in larger OHVs, and would lead to unmanaged trail proliferation.

The positive benefits of proactive trail treatment to prevent trail widening would likely be negated due to the obvious appearance of trail designed for passage of wide vehicles.

Cleanup of the crash contaminants will enhance the wilderness characteristics due to the fact that the site will be restored to its original condition and there will be no long term effects from environmental hazards

Overall, the effects of alternative 3 may impact, and may impair the wilderness characteristics in the Watana Creek area.

#### **4.3.2 Subsistence and Wildlife**

Indirect Effects: The proposed trail traverses lands selected by the State of Alaska under the Alaska Statehood Act. However, there is a likelihood that the Watana Creek block will become unencumbered BLM lands in the future. At that time the lands will be open for the use of federal subsistence hunting. This trail will provide a convenient access route for subsistence hunters and recreational hunters in search of big game. How the improved access will translate into hunting pressure on subsistence species is unknown, however, the Alaska Department of Fish and Game and the BLM work cooperatively to ensure a sustainable population of big game animals for subsistence and recreational hunters regardless of access.

Under this alternative, exclusive use would of an area 290 acres would be granted to the parties involved in the cleanup and investigation. If the cleanup continues into the fall, it is likely that some hunters would be displaced from their traditional hunting areas. There is evidence of a hunting camp within a couple of miles of the crash site, and it is likely that those hunters have utilized the area that would be encumbered by the exclusive use. However, the cleanup and investigation are expected to be completed prior to the hunting season, so this impact is unlikely. In the worst case scenario, a few hunters would be displaced for a maximum of one hunting season.

At the crash site, as recovery and cleanup is underway, it is likely that caribou and other wildlife will be encountered at close range. Caribou will typically avoid human interaction unless habituated to the stimulus or the stimulus is masked by other factors. Intentional harassment of wildlife should be avoided. It is also likely that bear-human interactions will occur at the project site, especially if food and trash are unsecured.

Trail improvements have had mixed results in increased trail usage. Trail usage during the hunting season seems to be more a factor on animal availability and tag distribution more so than trail condition. Based on this, we would not expect to see a long term increase in the area over alternative 2. However, there may be a short term increase in use due to hunters exploring what they perceive as a new trail.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. Signage must be posted along the trail to indicate that there is a closed area at the crash site where hunting will be prohibited for the duration of the project.
2. Intentional harassment of wildlife is prohibited.

### 4.3.3 Vegetation and Invasive Weeds

Direct Effects: Under this alternative the access route would be improved to accommodate year round travel and movement of all personnel, equipment, supplies, contaminated soils and clean fill. Vegetation would be cleared and/or brushed back to a width of 15 feet. The access trail may be rerouted in some areas to avoid wet areas which will require clearing existing vegetation and exposing mineral soils to a width of 15 ft. The calculated area of vegetation affected by access improvements under this alternative is approximately 40 acres total. The impacts of access trail improvements and re-routes will be adverse, and include clearing, brushing and removal of vegetation, easier unimpeded access, increase erosion and runoff, creation of disturbance conditions favoring the introduction and spread of non-native invasive plants, increased traffic into the site via access trail during growing season when non native plants are in bloom, increased soil compaction that will stress plants and associated roots, resulting in impaired growth and/or die back.

The clearance needed for this passage of the large equipment will require extensive trail widening in the area of Butte Creek. BLM estimates that a minimum of 100 white spruce trees greater than six inches in diameter will need to be removed in order to facilitate that passage. After the winter passage of the wide, heavy equipment, the brush (alder and willow species) will recover aggressively (3-5 years). The large spruce trees, however, will need 60-80 years to re-establish and fully recover. This impact is the same for alternative 2 due to the fact that the same number needed to be removed to provide one time access.

The adverse impacts to the vegetation at the crash site area resulting from the temporary establishment of a 24 person man camp facility, the search and recovery operations, and the environmental remediation and restoration of the site will be similar to the affects under alternative 2. Significant differences under this alternative are the increased traffic into the site via access trail during growing season when non native invasive plants are in bloom and increased potential for erosion and run-off. This will result in a higher probability of the introduction and spread of non native invasive plant species, and water quality. This alternative also has the potential to impact any existing rare or sensitive status species that may be present.

The total surface disturbance under this alternative is approximately 50 acres (42 on BLM managed lands) and total vegetation disturbance of 225 acres (189 on BLM managed lands). Most of the surface disturbance will likely occur in those areas where the access trail has been re-routed within the Butte Creek block and utilized year round, as well as at the crash site for camp improvements and remediation and restoration efforts.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. Ensure the cleaning of all equipment accessing the project area and utilized in operations prior to mobilization and throughout the summer months when equipment and personnel are accessing and existing the site to reduce the potential for introduction of non native invasive plants. Sanitizing all equipment that may exit and return to the site is required.
2. Submit to the BLM State Office for approval the native seed mixture and fertilizer to be used in restoration activities. Native seed mixture must be certified weed seed free, and fertilizer must maintain the proper C:N ratio.
3. Invasive Weeds: Maintenance and monitoring for successful reclamation – NTE 5 years. Preventive measures for providing weed seed free equipment, supplies and earthmoving machinery is paramount, and will require inventories for invasive non native plant species, with monitoring for revegetation success and maintenance procedures for a period of up to 5 years after all operations

have ceased on-site and until the access and recovery location has been determined to be successfully reclaimed by the BLM.

4. The use straw wattles to decrease the potential erosional energy of water flow over the trail surface or crash site must be certified weed seed free straw.

#### **4.3.4 Travel Management and Recreation**

Direct Effects: Increased recreational access and increased user numbers will result from this project.

Stipulations to minimize impacts:

1. While some increased use due to trail improvements is inevitable, the placement of a temporary bridge at the Butte Creek crossing, to be removed upon project completion, would limit the improved access route to the first 4 miles of trail.

Direct Effects: Prolonged access (year round) will lead to increased encounters with recreational users and increased conflicts

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. The project proponent shall deliver a public messaging campaign consisting of adequate signage at the trailhead and through local media outlets to inform users of increased operations

Direct Effects: Short term degradation of the trail system is expected in the summer months caused by overland OHV travel. The addition of heavy equipment, supply trailers, Conex containers, etc. traveling overland in the summer months will vastly increase the intensity and duration of these effects. The added element of travel year round with OHV's and additional equipment will produce increased negative effects upon the trail network as compared to the Proposed Action. The improved access will allow larger OHVs to navigate the trail in areas that they were previously limited, and it will allow all OHVs to go farther in a shorter amount of time. This is expected to eventually result in more trail proliferation as smaller OHVs attempt to get away from larger OHVs. The exact amount is difficult to determine as we have no comparison, but it will be expected to worsen over time.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. A BLM official or designee will monitor trail construction or rehabilitation to ensure acceptable construction measures are applied
2. The use of geo synthetics or trail hardening panels may be required in support of trail maintenance activities
3. A small excavator( no larger than a Bobcat 334) and small bulldozer (no larger than a JD 450 LGP) will be utilized by the project proponent to ensure timely rehabilitation of damaged trail sections to ensure safe passage for the general public.
4. Overland operations should avoid spring thawing periods. Overland travel should be avoided until June 1, 2011, or at such time the trail is free from snow and ice and seasonal runoff has dissipated.
5. Overland OHV travel should attempt to avoid operations during and after significant precipitation events. Typically a 24-48 hour "drying" period can alleviate possible impacts caused during precipitation events.

6. Overland OHV travel should avoid high use seasons and dates such as holidays, weekends, and hunting seasons.
7. The trail shall be reduced to an 8 foot width or less with the use of mechanized equipment upon project completion.

Direct Effects: The length and width of equipment being utilized in support of the project will require significant vegetation clearing and straightening of the trail in the Butte Creek vicinity. Approximately 1.5 miles of trail to the north of Butte Creek and 0.5 mile of trail south of Butte Creek will be significantly altered.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. If sections of trail cannot be developed in a sustainable manner they shall be reclaimed by scarifying the trail bed and planted with native grass seed.
2. Woody debris and other natural vegetation will be utilized to construct natural barriers along reclaimed portions of trail
3. The trail shall be reduced to an 8 foot width or less with the use of mechanized equipment upon project completion

Indirect Effects: Traditional users may become displaced with a perception of overcrowding or infringement upon traditional use areas. Although there are no known mitigations, the surrounding area and Denali Highway offers hundreds of thousands of acres to be utilized for recreational purposes including OHV use.

#### **4.3.5 Archaeology**

Direct Effects: This alternative has the greatest likelihood of negatively affecting undiscovered cultural resources, since snow and frozen ground will not protect any buried or surface sites from vehicle traffic during the summer. The utilized or constructed trail are limited to areas that have the lowest potential to possess intact cultural resources, and avoid two specific areas identified through aerial photos as having the highest potential for cultural resources. The trail stays south of a series of low elevation glacial ridges identified in the Northwest ¼ of Sect. 26, T.22S., R.1W., FM. Additionally, ground disturbing work with heavy equipment at the crash site stays north of a small ridge in the Northwest ¼ of section 29, T.33N., R.9E., SM.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. As soon as snow cover allows, an archaeological survey of the trail and it's immediate vicinity will be conducted to determine if any cultural resources have been negatively affected by previous access and to specify any additional areas for avoidance during summer or fall trail use.
2. If archaeological sites have been affected then the appropriate form of mitigation will be chosen in consultation with both the Alaska State Historic Preservation Officer as well as any affected Federally Recognized Tribes.

#### **4.3.6 Riparian, Fisheries and Hydrology**

Direct Effects: The crash site is about 100 feet from Watana Creek and most likely in the riparian zone. Unknown quantities of environmental contaminants may be present at the crash site, and have the potential to leech into Watana Creek, a known fish bearing stream. These pollutants will be cleaned up in accordance with ADEC regulations under this alternative. The exact amount and type of contaminants, is unknown, but the positive effects of the cleanup would be infinitely better than the no-action alternative. The impacts from

the cleanup for this alternative would be the same as the impacts for alternative 2.

USAF F-22 debris will be removed by hand or excavator depending on weight/size during the grid search. The camp site and grid search will result in some clearing, excavating, trampling of streamside vegetation, and hardening of pathways around the camps.

The majority of proposed overland access route is utilizing river and creeks as travel corridors. The proposed river and creek travel corridors are classified as riparian areas, wetlands, and also include the associated floodplains. The proposed access route is 17.5 (14.3 on BLM managed lands) miles in length and 15' in width. The access route will affect hydrologic connectivity (drainage patterns), changes in surface runoff, fine sediment production (erosion), slope stability and risks associated with stream crossing failures. Improperly designed or poorly maintained trails can modify natural drainage networks and can accelerate erosion processes that result in increased stream sedimentation, degraded aquatic habitats and altered channel morphology. Trail impacts generally increase as they become more connected, in terms of hydrology, to the natural channel network. Trails and their drainage systems typically act to intercept surface and subsurface runoff and route excess runoff into the channel system resulting in increased streamflow and sediment delivery to streams. In steep terrain, trails can increase the rate of hill slope failures and soil mass wasting. Fine sediments can be delivered to streams by erosion of trail surfaces. Many of the aforementioned effects of trails can be mitigated by design changes that disperse, rather than concentrate trail runoff and by gravel surfacing, or by designating undisturbed protective riparian buffers along streams to allow for filtering of fine sediments. Based on the maximum width of the large equipment that would be provided year round access, alternative 3 would have a 50% (15-ft drivable surface versus 10-ft) greater impact to the riparian areas than would alternative 2.

Proposed use in and around the search grid and camp areas may be sufficient to alter the vegetation community type, distribution, root density, recruitment, reproduction, and/or survival of the natural vegetation to the extent that it may warrant a lower riparian-wetland condition classification. Because of this it is recommended that any additional clearing in and around the base camps and any new construction (e.g. outbuildings, fuel site, etc...) be located outside of the flood-prone area adjacent to streams, as well as, outside of the riparian zone. On most streams the flood-prone area is associated with <50-year return period flood and generally includes the active floodplain and low terrace. The flood-prone area can be estimated by identifying the elevation that corresponds to twice the maximum bankfull channel depth within a riffle section of the stream (Rosgen 1996). These mitigation measures will be applied in order to comply with the goals and requirements identified under BLM – Alaska's Land Health Standards for riparian and wetland habitat and executive order 11990 – Protection of Wetlands. Recommended stipulations will be implemented to minimize the erosional, hydrological effects, and loss of riparian areas.

In addition to the ROPs identified in Exhibit 1, the following special stipulations apply:

1. Clearing of willows and alders in the riparian areas shall be avoided whenever possible.
2. Cross streams at right angles with straight approaches and gentle grades and locate in shallow riffle areas.
3. Streambeds at crossings should have a firm rock or gravel base. Otherwise, install stabilizing material such as gravel or rubber mats on streambeds.

4. Stabilize approaches to bridge, culvert and ford crossing with aggregate or other suitable material to reduce sediment entering the stream.
5. Minimize channel changes and the amount of excavation or fill needed at the stream crossing.
6. Limit construction activity in the water to periods of low or normal flow. Keep use of the equipment in the stream to a minimum.
7. Design and construct trail to remove water from trail surface to keep the trail dry and structurally sound.
8. Divert trail drainage into undisturbed vegetation.
9. Minimize disturbance of vegetation while designing, constructing and maintaining trails.

#### **4.4 Effects of Alternative 4 – Air Access**

The project proponent, the US Air Force, estimates that the cost of conducting the crash site remediation using air access only would be approximately 10.5 million dollars. The estimated recovery cost using the ground access is estimated at 7.7 million dollars. Furthermore, the area of the proposed action is a harsh and unforgiving environment. Long periods of inhospitable weather unsuitable for flight would likely increase the duration of the project, and would expose workers to unnecessary risks. These are social and economic factors that have been considered.

Furthermore, the USAF doesn't own assets sufficient to mobilize/demobilize the equipment needed to recover/reclaim the crash site. Those assets would have to be borrowed from the US Army. Due to the current deployment cycle, those assets are not available in the state of Alaska during the timeframe needed by the applicant.

##### **4.4.1 Wilderness Characteristics**

Impacts from the summer search and recovery operations, and the environmental remediation and restoration activities would be identical to alternative 2.

There would be no impacts on the ground to wilderness characteristics due to access. However, if the camp operations were completely mobilized and supported by air, there would be noise impacts due to the large size of equipment needed to mobilize and the large number of trips required.

##### **4.4.2 Subsistence and Wildlife**

Impacts from the summer search and recovery operations, and the environmental remediation and restoration activities would be identical to alternative 2.

Impacts to subsistence and hunter access would be the same as for alternative 1, the no-action alternative. Subsistence hunters will continue to access the area for subsistence activities.

##### **4.4.3 Vegetation and Invasive Weeds**

Direct Effects: Under this alternative access to the crash site would occur via aircraft and would not have any impacts to the vegetation along the existing trail from milepost 53 Denali Hwy.

Impacts from the summer search and recovery operations, and the environmental remediation and restoration activities would be identical to alternative 2.

Mitigations: All mitigation measures would also be identical to alternative 2.

#### **4.4.4 Travel Management and Recreation**

The trail system within the area would remain in its present condition. The current travel management network and associated uses would remain unchanged. Access would not be improved, the trail would not be impacted, and user numbers would not increase. The impacts to travel management would be identical to the now action alternative.

#### **4.4.5 Archaeology**

Impacts from the summer search and recovery operations, and the environmental remediation and restoration activities would be identical to alternative 2.

There would be no impacts to archaeological resources due to access.

#### **4.4.6 Riparian, Fisheries and Hydrology**

Impacts from the summer search and recovery operations, and the environmental remediation and restoration activities would be identical to alternative 2.

There would be no impacts due to trail widening or trail improvements.

### **4.5 Cumulative Effects of the Proposed Action and Geographic Scope**

The cumulative effects analysis is based on a geographic scope area consisting of the lands and viewshed associated with the Butte Creek trail system and the Watana Creek watershed. This area is comprised of similar terrain, vegetation, and uses. Effects associated with the proposed action would occur within this area.

#### **4.5.1 Riparian, Fisheries and Hydrology**

To determine cumulative impacts on riparian area, hydrologic connectivity (drainage patterns), changes in surface runoff, and fine sediment production (erosion) requires data on current conditions, there is no data on current conditions. It can be assumed that there will be cumulative impacts to riparian and wetland habitat from 17.5 miles of trail widening (8-10') and a creating a search grid area of 185 acres.

#### **4.5.2 Vegetation and Invasive Weeds**

The cumulative impacts to the vegetative resources along the access route and crash site resulting from the proposed alternative include those stated above, as well as those resulting from the crash itself, contamination and disturbance to the natural conditions of soils and vegetation.

#### **4.5.3 Travel Management and Recreation**

The pursuit and demand for recreational opportunities on public land grows every year within the Glennallen Field Office. This is demonstrated through increased users identified within RMIS, increased applications for commercial recreation opportunities, and increased public awareness in regards to recreation on BLM lands. The improvements described in the proposed action combined with the ever growing popularity of OHV enthusiasts will increase user numbers in the area. This increase of users would negatively affect other users expecting to find solitude, quiet, and little to no other people on their public lands.

A site approximately 10 miles southwest of the project area near the Susitna River has been identified as high potential for future construction of a hydroelectric facility along the Susitna River. However there is no project proposal at this time. This could lead to further interest in development of the trail system.

#### Mitigations

1. Any future activities upon BLM land in this area would be analyzed in a separate EA
2. Commercial or construction activities would be subject to BLM ROPS and stipulations identified within BLM policy.

## 5.0 Coordination and Consultation

### 5.1 Interdisciplinary Team Members Participating on ID Team, March 8, 2011

John Jangala, Archaeologist, Bureau of Land Management  
 Denton Hamby, Outdoor Recreation Planner, Bureau of Land Management  
 Cory Larson, Outdoor Recreation Planner, Bureau of Land Management  
 Merben Cebrian, Wildlife Biologist, Bureau of Land Management  
 Ben Seifert, Forester/Vegetation Specialist, Bureau of Land Management  
 Elijah Waters, Branch Chief, Bureau of Land Management  
 Joseph Hart, Realty Specialist, Bureau of Land Management  
 Brenda Becker, Realty Specialist, Bureau of Land Management  
 Tim Sundlov, Fisheries Biologist, Bureau of Land Management

A site visits to the crash site via the proposed route was conducted by Cory Larson and Denton Hamby on December 10, 2010. They conducted a follow up site visit from March 30-April 1 in order to further recon the trail condition and to further assess the size of the equipment needed for the proposed action.

### 5.2 Non Governmental Organizations, Native Entities, Private Parties

BLM NEPA guidance requires public involvement in the preparation of all Environmental Assessments. Public notice for this EA was posted on March 17, 2011, on the BLM Glennallen Field Office Website NEPA log: [HTTP://WWW.BLM.GOV/AK/ST/EN/INFO/NEPA/GFO\\_NEPA\\_REGISTER.HTML](http://www.blm.gov/ak/st/en/info/NEPA/GFO_NEPA_REGISTER.HTML). No comments have been received.

The lands affected by the proposed action are not encumbered by ANCSA selections. The Native village of Cantwell (nearest federally recognized Tribe) is 53 road miles to the west, therefore no Native Entities were consulted.

Under the proposed alternative, USAF would prepare a collection plan, a site characterization plan and a remedial action plan for the F-22 recovery site. These documents would then be distributed to the BLM, DNR, and ADEC for review and comment.

**RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT**

Serial Number  
AA-092885

1. A (right-of-way) (permit) is hereby granted pursuant to:

a.  Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761);

b.  Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);

c.  Other (describe) \_\_\_\_\_

2. Nature of Interest:

a. By this instrument, the holder Department of the Airforce receives a right to construct, operate, maintain and terminate a A overland Right-of-way and crash site remediation on public lands (or Federal land for MLA Rights-of Way) described as follows:

Beginning from a gravel pit along the Denali Highway at approximately milepost 80, T. 20 S., R. 1 E., Fairbanks Meridian, traveling South thru T. 21 S., R. 1 E., T. 22 S., R. 1 E., and 1 W., then thru T. 22 S., R. 1 W., along existing trails to the Watana Creek drainage, then turning South and Westerly, to the crash site located within T. 33 N., R. 9 E., Section 19, Seward Meridian, Alaska, along the Watana Creek drainage.

b. The right-of-way permit area granted herein is Approx. 25 feet wide, 70,300 feet long and contains 40.3 acres, more or less. If a site type facility, the facility contains 300 acres.

c. This instrument shall terminate on April 5, 2014, Three (3) years from its effective date unless, prior thereto, it is relinquished abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument  may  may not be renewed. If renewed, the right-of-way or permits shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be no binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental: **Exempt**

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with the comparable commercial practices.

4. Terms and Conditions:

a. This grant or permit is issued subject to the holders' compliance with all applicable regulations contained in Title 43 Code of Federal Regulations parts 2800 and 2880.

b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 60 days, or otherwise disposed of as provided in paragraph (4) (d) or as directed by the authorized officer.

- c. Each grant issued pursuant to the authority of paragraph (1) (a) for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter that do not exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in the Exhibit(s) A and B, dated April 5, 2011 attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. Pursuant to 43 CFR 2800.1-2(b)(1)(iii), no rental shall be collected provided all use is strictly related to rural utility services. Commercial use by other non-rural related services requires rental. The sale or lease of any excess capacity for commercial purposes to other telecommunications service providers that are not exempt from rent by statute, or regulations, shall result in the loss of the rental exemption for that portion of the fiber optic capacity being sold or leased for the commercial purposes. The rental for this portion shall be assessed based on the fair market value as determined by the authorized officer.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

s/s Russell R. Hula, Colonel, USAF  
(Signature of Holder)

s/s Elizabeth Maclean  
(Signature of Authorized Officer)

Commander, 673d Civil Engineer Group  
Joint Base Elmendorf-Richardson, Alaska  
(Title)

Field Manager  
(Title)

5 April 2011  
(Date)

4/5/11  
(Effective Date of Grant)

**FINDING OF NO SIGNIFICANT IMPACT  
FOR  
US Air Force  
Raptor Trail and F-22 Crash Site  
DOI-BLM-AKA-020-2011-0010-EA  
Serial # AA92885**

**Recommendation:** I recommend that the application for overland access to the F-22 crash site and the mitigation of the crash site be approved for a period of three years as requested by the United States Air Force, subject to the standard stipulations with added mitigation from Glennallen Field Office, BLM. This action will affect the following public lands:

Beginning from a gravel pit along the Denali Highway at approximately milepost 80, T. 20 S., R. 1 E., Fairbanks Meridian, traveling South thru T. 21 S., R. 1 E., T. 22 S., R. 1 E., and 1 W., then thru T. 22 S., R. 1 W., along existing trails to the Watana Creek drainage, then turning South and Westerly, to the crash site located within T. 33 N., R. 9 E., Sections 19, Seward Meridian, Alaska, along the Watana Creek drainage.

The access route traverses approximately 14.3 miles of BLM managed lands, and the crash site is 290 acres.

Authority for this action is the:

**Federal Land Management Policy Act 1976 as amended. (43 U.S.C.1761)**

Rationale for Recommendation: The proposed action would not result in any undue or unnecessary environmental degradation. The proposal is consistent with the July 2007 East Alaska Resource Management Plan as amended. The effects of this action have been evaluated in the attached Environmental Assessment. The Environmental Assessment did not reveal significant impacts.

Decision: The recommendation and rationale are adopted as my decision.

Finding of No Significant Impact: Based on the analysis of potential environmental impacts contained in the attached environmental assessment, I have determined that impacts are not expected to be significant and an environmental impact statement is not required.

s/s Elizabeth Maclean  
Elizabeth Maclean  
BLM Glennallen Field Manager

4/5/11  
Date

**DECISION RECORD  
FOR  
US Air Force  
Raptor Trail and F-22 Crash Site  
DOI-BLM-AKA-020-2011-0010-EA  
Serial # AA92885**

On November 16, 2010, an Air Force F-22 fighter jet crashed during night time training missions. The Air Force immediately conducted an initial recovery operation but subsequently had to suspend recovery operations due to winter conditions.

On March 4, 2011, the Bureau of Land Management (BLM), Glennallen Field Office (GFO), received a proposal to access the crash site and conduct final cleanup and recovery at the site. The Air Force proposal is to improve an existing trail from the Denali Highway to the crash site for access with heavy equipment. Once the necessary equipment is on location, cleanup and recovery will be conducted. Equipment will then be staged at the crash location until the following winter when the ground has frozen, whereupon it will be removed.

**DECISION**

After consideration of the environmental impacts associated with this action, BLM's decision is to approve the proposed action for a period of three years as described in the attached Environmental Assessment (EA) and authorize the Air Force to access the crash site and conduct clean up operations.

This approval is subject to adherence with the operating plan and mitigating measures contained in the attached EA and proposal.

**RATIONALE**

The decision to authorize the proposed action is based on the following:

1. The BLM, as a Federal Agency, seeks to cooperate with the US Air Force to facilitate this recovery operation. The US Air Force views their requirement to protect classified materials, investigate the crash site, and recover human remains with dignity as a non-discretionary action.
2. This decision was made with concurrence by the State Director as required by BLM Manual 6303.14, regarding actions with potential to impact but not impair Lands with Wilderness Characteristics.
3. The BLM considered the proposed action and conducted an environmental analysis of the impacts associated with it and has determined that there are no significant impacts.
4. The selected alternative will not result in any undue or unnecessary environmental degradation.

**Contact the Glennallen Field Office for questions regarding this decision.**

s/s Elizabeth Maclean  
Elizabeth Maclean  
BLM Glennallen Field Manager

4/5/11  
Date

# **ANILCA Section 810 Evaluations and Findings for All Alternatives**

**E.A. No.:** DOI-BLM-AK-A020-2011-0010-EA

**Applicant:** Department of Air Force

**Evaluation by:** Merben R. Cebrian

## **1. Evaluation and Finding of Alternative 1: The No Action Alternative**

### **1.A. Effect of Alternative 1 on subsistence uses and needs:**

Fisheries: The no action alternative continues current management practices in the area. There are no regulated subsistence fisheries in the area. Contaminants may migrate from the crash site but we assume that the high water flow rates in the drainage will dilute the contaminants and quickly disperse them further downstream. Therefore Alternative 1 has no significant effect on subsistence fishery uses and needs.

Wildlife: This alternative proposes to continue current management practices in the area where the proposed action is to occur. Current practices are considered adequate to meet subsistence needs. There is no regulated federal subsistence hunting in the area. However, state Tier I subsistence caribou hunting occur in the area. The crash site and proposed trail lies within the traditional migratory route of the Nelchina caribou herd and is also within the extent of recent calving events. Any debris left over from the crash will be eventually covered by vegetation since large debris was already removed from the site. Access to the caribou is via existing trails. Hunting pressure is not likely to increase with the no action alternative. Small mammals and upland birds occur in the area but will not be affected by the No Action alternative. Therefore, this alternative has no significant effect on subsistence uses and needs.

Other resources: The No Action Alternative will not significantly affect other harvestable resources such as berries, willows, firewood, and spruce roots. Small pieces of debris left over from the crash will eventually be covered by vegetation. Current practices are considered adequate to meet subsistence needs. Therefore, this alternative has no significant effect on subsistence uses and needs.

### **1.B. Availability of other lands, if any, for the purposes sought to be achieved:**

Other lands are available for the purposes sought by the applicant. The trail to the F-22 crash site can be routed through Butte Creek valley on other state lands. However, the proposed route provides the most expedient direct access to the crash site.

**1.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:**

The only alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

**1.D. Finding:**

Under Alternative 1, management of the area would continue under the 2007 East Alaska Resource Management Plan. Current practices are considered adequate to meet subsistence needs. Management actions will not result in a significant reduction in subsistence uses. Access to subsistence resources will not be hampered. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to this alternative.

**2. Evaluation and Finding of Alternative 2 (the Proposed Action)**

This alternative proposes to authorize the right-of-way across land in the spring and winter for large earth-moving vehicles, and in the summer for ATVs.

**2.A. Effect of Alternative 2 on subsistence uses and needs:**

Fisheries: There are no regulated subsistence fisheries in the area. Therefore Alternative 2 has no significant effect on subsistence fishery uses and needs.

Wildlife: Subsistence hunting in Unit 13 starts on 01 August for moose and 10 August for caribou. Between 01 April and 30 July, the proposed action will not significantly affect subsistence hunting. During the hunting season, the area is popular with state Tier I subsistence caribou hunters as well as state drawing hunt permit holders. A community hunt for moose and caribou also occur in the area. The most likely indirect effect of the proposed action is the improvement of access to hunting grounds in the Watana Creek valley. The current condition of the trail in this valley is likely appropriate for occasional ATV access in the summer and snowmachines in the winter. Large earth-moving vehicles will traverse the proposed trail when the ground is frozen. The existing trail will likely be improved to allow safe and consistent passage of cleanup and recovery personnel on ATVs during the summer. Improved trails are likely to attract

more hunters on foot, on ATVs, or in larger hunting vehicles such as 4WD trucks. Recent increases in caribou population have resulted in the Alaska Department of Fish and Game issuing more caribou permits.

Surface sweeps at the recovery and cleanup site will temporarily disturb small mammals and upland birds that may be present in the area. The closure of the 2,000 foot radius exclusive zone around the crash site to hunting will exclude hunters from approximately 288 acres of hunting ground. However, the safety of personnel and the security of potentially secret/sensitive materials from the crash site needed to be addressed. Putting the exclusive zone (approximately 288 acres) in perspective with respect to the size of available land for State Tier I hunters, this is a small area.

Although hunting pressure is likely to increase in the area, a harvest quota will be implemented, and the Tier I hunt closed when the quota is reached. Increased vigilance is needed, however, especially when the caribou harvest is approaching the quota. Other wildlife such as small mammals and upland birds may also avoid human contact during active cleanup and recovery operations. Therefore, the proposed action will not significantly affect subsistence uses and needs.

Other resources:

The proposed action will not significantly affect other harvestable resources such as berries, willows, firewood, and spruce roots. The proposed action follows a route, in part, along rocky creekbeds, low alpine and shrub vegetation, and small bodies of water. Proposed actions that mitigate litter and human waste disposal, and campsite impacts will likely be beneficial to the habitat by minimizing impacts to vegetation. Effects on local vegetation are expected to be minimal except where they occur directly on the proposed trail. Therefore, the proposed action will not significantly affect subsistence uses and needs.

**2.B. Availability of other lands, if any, for the purposes sought to be achieved:**

Other lands are available for the purposes sought by the applicant. The trail to the F-22 crash site can be routed through Butte Creek valley on other state lands. However, the proposed route provides the most expedient direct access to the crash site.

**2.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:**

The only other alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

## **2.D. Finding:**

Under Alternative 2 (Proposed Action), access to subsistence resources will not be hampered by the proposed activity. The proposed action will not significantly restrict subsistence uses and needs in or near the proposed activity area. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to the proposed action.

## **3. Evaluation and Finding of Alternative 3**

This alternative proposes to authorize the right-of-way across BLM lands year-round for all cleanup and recovery vehicles.

### **3.A. Effect of Alternative 3 on subsistence uses and needs:**

Fisheries: There are no regulated subsistence fisheries in the area. Therefore Alternative 3 has no significant effect on subsistence fishery uses and needs.

Wildlife: Same as Alternative 2 except for the improved summer trail to allow year-round access to the crash site by large earth-moving vehicles. With year-round access by large vehicles, the trail improvements will be substantial to support heavy equipment with heavy loads. Since trail use is non-exclusive, potential conflict with hunters may arise over access to nearby hunting grounds. Tier I subsistence hunters and community hunt hunters on foot, ATVs, or large 4WD vehicles may want to use the improved trail to access moose and caribou in the area. Possible mitigation measures would include halting recovery operations during moose hunting season and when caribou are in the area during the caribou hunting season. Therefore, the proposed action will not significantly affect subsistence uses and needs.

Other resources: Same as Alternative 2.

### **3.B. Availability of other lands, if any, for the purposes sought to be achieved:**

Other lands are available for the purposes sought by the applicant. The trail to the F-22 crash site can be routed through Butte Creek valley on other state lands. However, the proposed route provides the most expedient direct access to the crash site.

### **3.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:**

The only alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

### **3.D. Finding:**

Access to subsistence resources will not be hampered by this alternative. Alternative 3 will not significantly restrict subsistence uses and needs in or near the planning area. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to this alternative.

## **4. Evaluation and Finding of Alternative 4**

This alternative proposed to deny authorization for a right-of-way access overland to the crash site. Access is restricted to helicopter only.

### **4.A. Effect of Alternative 4 on subsistence uses and needs:**

Fisheries: There are no regulated subsistence fisheries in the area. Therefore Alternative 4 has no significant effect on subsistence fishery uses and needs.

Wildlife: Same as Alternative 1 except that debris at the crash site will be removed.

Other resources: Same as Alternative 1 except debris from the crash site will be removed.

### **4.B. Availability of other lands, if any, for the purposes sought to be achieved:**

Other lands are available for the purposes sought by the applicant. An overland trail to the F-22 crash site can be routed through either Watana Creek valley or Butte Creek valley. However, the proposed route provides the most expedient direct access to the crash site.

### **4.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:**

The only alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

**4.D. Finding:**

Access to subsistence resources will not be hampered by this alternative. Alternative 4 will not significantly restrict subsistence uses and needs in or near the planning area. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to this alternative.

s/s Merben R. Cebrian  
Merben R. Cebrian  
Wildlife Biologist  
BLM, Glennallen Field Office

23 March 2011  
Date

BUREAU OF LAND MANAGEMENT STANDARD STIPULATIONS,  
EXHIBIT B  
April 5, 2011  
AA-092885

**Special Stipulations from DOI-BLM-AK-A020-2011-0010-EA**

1. Ensure the cleaning of all equipment accessing the project area and utilized in operations prior to mobilization to reduce the likelihood of introducing non-native invasive plants. Sanitizing all equipment that may exit and return to the site is required.
2. Submit to the BLM State Office for approval the native seed mixture and fertilizer to be used in restoration activities. Native seed mixture must be certified weed seed free, and fertilizer must maintain the proper C:N ratio.
3. Invasive Weeds: Maintenance and monitoring for successful reclamation – NTE 5 years. Since preventive measures for providing weed seed free earthmoving machinery is limited due to the winter season, inventory for invasive weeds, monitoring for re-vegetation success and maintenance procedures will be performed for a period of up to 5 years after all operations have ceased on-site and until the access and recovery location has been determined to be successfully reclaimed by the BLM.
4. The use of straw wattles to decrease the potential erosional energy of water flow over the trail surface or crash site must be certified weed seed free straw.
5. While some increased use due to trail improvements is inevitable the placement of a temporary bridge at the Butte Creek crossing, to be removed upon project completion, would limit the improved access route to the first 4 miles of trail.
6. A small excavator( no larger than a Bobcat 334) and small bulldozer (no larger than a JD 450 LGP) will be utilized by the project proponent to ensure timely rehabilitation of damaged trail sections to ensure safe passage for the general public.
7. The trail shall be reduced to an 8 foot width or less with the use of mechanized equipment upon project completion.
8. Overland operations should avoid spring thawing periods. Overland travel should be avoided until June 1, 2011, or at such time the trail is free from snow and ice and seasonal runoff has dissipated.
9. Overland OHV travel should attempt to avoid operations during and after significant precipitation events. Typically a 24-48 hour “drying” period can alleviate possible impacts caused during precipitation events.
10. If sections of trail cannot be developed in a sustainable manner they shall be reclaimed by scarifying the trail bead and planted with native grass seed.
11. Woody debris and other natural vegetation will be utilized to construct natural barriers along reclaimed portions of trail
12. As soon as snow cover allows, an archaeological survey of the trail and it’s immediate vicinity will be conducted to determine if any cultural resources have

- been negatively affected by previous access and to specify any additional areas for avoidance during summer or fall trail use.
13. Clearing of willows and alders in the riparian areas shall be avoided whenever possible.
  14. Minimize channel changes and the amount of excavation or fill needed at the stream crossing.
  15. Limit construction activity in the water to periods of low or normal flow. Keep use of the equipment in the stream to a minimum.
  16. Design and construct trail to remove water from trail surface to keep the trail dry and structurally sound.
  17. Divert trail drainage into undisturbed vegetation.
  18. Minimize disturbance of vegetation while designing, constructing and maintaining trails.
  19. Signage must be posted along the trail to indicate that there is a closed area at the crash site where hunting will be prohibited for the duration of the project.
  20. Intentional harassment of wildlife is prohibited.
  21. The use of geo synthetics or trail hardening panels may be required in support of trail maintenance activities

s/s Russell R. Hula  
Grantee Signature

5 Apr 11  
Date

BUREAU OF LAND MANAGEMENT STANDARD STIPULATIONS,  
EXHIBIT A  
April 5, 2011  
AA-092885

1.0 Definitions

- 1.1 The Glennallen Field Office Manager is the Authorized Officer (AO), as defined by 43 CFR 2800.0-5(c).
- 1.2 “Grantee” means Department of Air Force, and any and all assignees that may be of record, including all agents, contractors, subcontractors, and employees.
- 1.3 “Grant” means the license, lease, permit, or other permission granted by the United States to the grantee for the use of public lands and resources.

2.0 General

- 2.1 The grantee will address all matters to the Glennallen Field Office, P.O. Box 147, Glennallen, Alaska 99588.
- 2.2 In case of change of address, the grantee shall immediately notify the AO.
- 2.3 The grantee shall construct, operate and maintain the facilities, improvements and structures within this right-of-way in strict conformity with the design submitted to the Authorized Officer.
- 2.4 This grant is subject to all prior valid and existing rights, and the United States makes no representations or warranties whatever, either expressed or implied, as to the existence, or nature of such valid existing rights.
- 2.5 Any modifications to the proposed activities must be approved in writing by the AO.
- 2.6 It is the responsibility of the grantee to ensure that field party members are familiar with and adhere to these stipulations.
- 2.7 The holder, in exercising the privileges granted under this grant shall comply with the regulations of the Department of the Interior and all Federal, State, Borough, and Municipal laws, ordinances, or regulations, which are applicable to the area or operations covered by the grant.
- 2.8 The grantee may be requested by the AO to furnish transportation and quarters for designated field representatives or observers while inspecting operations.
- 2.9 In the advent of a disagreement of the interpretation or implementation of these stipulations the grantee agrees that the AO shall have the final say in how these stipulations are interpreted and implemented.
- 2.10 Grantee shall defend, indemnify and hold the United States, its assigns, agents, employees, representatives and successors in interest harmless from and against any and all actions, fees, for injury to or death of any person, persons, or property arising in connection with and as a direct result of grantee’s activities, included but not limited to United States negligence, if any, in failing to recognize or remedy a hazardous condition existing on public lands.

- 2.11 This grant may not be encumbered, hypothecated, assigned, subleased, or transferred without prior written approval by the AO.
- 2.12 The AO may revoke or terminate this grant in whole, or in part, upon a determination by the AO that the terms, conditions, or stipulations of the grant have been violated, or by determination by the AO that the grantee's actions pose a threat to human health or safety, or irreparable harm to the surrounding environment.
- 2.13 The Grantee shall not enclose or obstruct in any manner, or erect or maintain any signs or buildings on roads or trails commonly used for public travel, access to public lands, except temporary construction cautionary signs to control traffic.
- 2.14 This grant does not authorize the grantee to take from the public lands any mineral or vegetative material, including timber, without securing authorization under 30 USC 601 et seq. Common varieties of stone and soil necessarily removed during construction, however, may be used elsewhere along the same right-of-way or permit area.
- 2.15 This grant does not authorize any other use of the public lands or improvements belonging to the US government.
- 2.16 The holder of this right-of-way grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.
- 2.17 This grant is subject to all valid existing rights on the effective date of this grant.
- 2.18 There is reserved to the AO, the right to grant additional rights-of-way or permits for compatible uses on, over, under or adjacent to the land involved in this grant.
- 2.19 The grantee shall designate a representative who shall have the authority to act upon and to implement instructions from the AO. The grantee's representative shall be available for communication with the AO within a reasonable time when construction or other surface disturbing activities are underway.

### 3.0 Environmental

- 3.1 All operations will be conducted in such a manner as not to cause damage or disturbance to any fish or wildlife, or to impede rural residents from pursuing their traditional subsistence activities (ANILCA, PL 96-487).
- 3.2 All activities shall be conducted with due regard for good resource management and in such a manner as not to block any stream, or drainage system, or cause the pollution or siltation of any stream or lake.
- 3.3 During construction activities, a silt retaining fence will be constructed to contain any potential silt-carrying erosion from entering adjacent waters.
- 3.4 All activities shall be conducted so as to avoid or minimize disturbance of vegetation. If it becomes necessary to remove vegetation, prior approval by the AO is required.
- 3.5 The Holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way. If any scarring or damage occurs outside of approved areas as a result of the holder's operation, the areas shall be repaired and reseeded, or otherwise corrected as necessary to the satisfaction of the Authorized Officer.

- 3.6 The holder will do everything reasonable, both independently and/or upon request of the authorized officer to prevent and suppress fires on or near the lands occupied under the right-of-way.
- 3.7 Petroleum products or by-products shall not be used for dust suppression.

#### 4.0 Operational

- 4.1 Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the Holder, or any person working on his behalf, on public or Federal lands shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The Holder will be responsible for the cost of evaluation and the Authorized Officer will make any decision as to proper mitigation measures after consulting with the Holder.
- 4.2 All waste generated during operation, maintenance, and termination activities under authorization shall be removed or otherwise disposed of as required by State and Federal law. In this case the waste must be dumped in a DEC approved landfill site. Waste in this subparagraph means all discarded matter, including but not limited to, human waste, trash, garbage, refuse, and oil drums, petroleum products, ashes and discarded equipment.
- 4.3 Area of operation shall be left clean of all unauthorized foreign objects. This shall include, but is not limited to, wires, pins, flags and reflectors.
- 4.4 Construction sites shall be maintained in a sanitary condition at all times; waste materials at the site shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, Petroleum products, ashes, and equipment.
- 4.5 All fuel or lubricant spills will be cleaned up immediately, taking precedence over all other matters, except the health and safety of personnel. Spills will be cleaned up utilizing absorbent pads or other Alaska State DEC approved methods. Any such spill sites will be documented so that they can be located during the compliance check.
- 4.6 Recovered spill fluids will be removed and incinerated in approved receptacles.
- 4.7 As soon as possible, but not later than 24 hours, notice of any such discharge as defined in Alaska Statute Title 18, Chapter 75, Article 2, will be given to the AO and any other Federal and State Officials as are required by law.
- 4.8 All State and Federal safety standards and regulations for fuel transportation and handling will be followed. Only fuel products and amounts specifically authorized shall be stored on site, and shall be located away from any source of water. All fuel containers, including barrels and propane tanks, shall be marked with the grantee's name, product type and year filled.
- 4.9 The grantee shall mark and protect all survey monuments within or near the permit area against destruction, obliteration, or damage during the life of this grant. If any public land monuments, or corners, or accessories, including but not limited to U.S. Coast and Geodetic, U.S. Geological Survey, and/or Bureau of Land Management survey monuments, are destroyed, obliterated, or damaged, the grantee, by utilization of a registered land surveyor shall reestablish or restore at the time location the monuments, corners, or accessories using surveying procedures in accordance with the "Manual of Instructions for the Survey of Public Lands of the United States, 1973 Ed." And shall record such survey in the appropriate records. The authorized representative may prescribe additional requirements for the protection of monuments, corners,

and bearing trees. Written permission from the authorized representative must be obtained before a monument may be moved or buried. A copy of the survey record shall be furnished to the Bureau of Land Management fully describing monuments and corner accessories found at the corner point and any new monuments, or accessories established, to perpetuate the corner position.

- 4.10 No hazardous materials shall be transported or disposed within the right-of-way.
- 4.11 Prior to abandonment of any portion of the facilities authorized by this grant, the Holder shall contact the Authorized Officer, and if the situation warrants, to arrange a joint inspection of the right-of-way. The inspection will be held to agree on an acceptable rehabilitation plan. The Authorized Officer must approve the plan in writing prior to the Holder commencing any abandonment and/or rehabilitation activities.
- 4.12 Drip basins or absorbent diapers will be placed under all non-dry disconnect-type fuel line or lubricating couplings and valves of all unattended equipment on site.
- 4.13 Construction, maintenance, and emergent-related traffic shall be restricted to routes approved by the Authorized Officer. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the Authorized Officer. Authorized roads used by the grantee shall be rehabilitated or maintained when construction activities are complete as approved by the Authorized Officer.
- 4.14 Active bald eagle nests within ¼ mile of the project area will be identified and measures taken in consultation with U.S. Fish and Wildlife Service and BLM to avoid disturbance of their nesting activities.
- 4.15 Grantee will avoid active trumpeter swan nesting sites by no less than ¼ mile between April 1 and August 31.
- 4.16 Maintain minimum 25-foot vegetated buffer near streams, lakes, ponds, and wetlands.
- 4.17 Reseed, with Native seed, where vegetation is disturbed at regeneration hut and manhole construction sites.

## 5.0 Special

- 5.1 Do not wash equipment or vehicles in streams and wetlands.
- 5.2 Use heavy equipment only with adequate soil moisture to minimize soil erosion.
- 5.3 Use equipment that minimizes soil disturbance and compaction.
- 5.4 Implement erosion control measures in areas where heavy equipment use occurs.
- 5.5 Minimize damage to biological soil crusts by limiting the number of off-road motorized vehicle trips to access construction sites.
- 5.6 Conduct mechanical treatments along topographic contours to minimize runoff and erosion.
- 5.7 Leave plant debris on site to serve as mulch.
- 5.8 ROP-F&W-a-1: Utilize existing roads and trails whenever possible. Off-road use shall require a site-specific exception from the AO.

- 5.9 ROP-F&W-a-3: Avoid stream crossings. When a stream must be crossed, make the crossing as close as possible to a 90 degree angle to the stream and at the most stable section of the stream channel.
- 5.10 ROP-F&W-a-7: Motorized travel up and down stream beds is prohibited.
- 5.11 ROP-F&W-a-13: Consistent with the Migratory Bird Treaty Act, operations that require vegetation removal will avoid [removing vegetation during] the migratory bird nesting period of April 15 to July 15.
- 5.12 The Holder shall conduct all activities associated with the construction, operation, maintenance and termination of the right-of-way within the authorized limits of the right-of-way grant.
- 5.13 During conditions of extreme fire danger, operations shall be limited or suspended in specific areas, or additional measures may be required by the Authorized Officer.
- 5.14 Transport of equipment in excess of 3,000 lbs. may only occur when there is a minimum of 6 inches of frozen ground or a minimum of 12 inches of snow covering the ground.

s/s Russell R. Hula  
Grantee Signature

5 Apr 11  
Date

Department of the Interior  
Bureau of Land Management  
**Glennallen Field Office**

NEPA Interdisciplinary Review

Project Name: Raptor Trail

Casefile Number: AA-092885

NEPA Document Number: DOI-BLM-AKA-020-2011-0010-EA

NEPA Preparer: Joseph Hart

Please return to preparer by: March 28, 2011

Staff Specialist	Resource Area	Comments Provided Yes / No	Date Reviewed
Brenda Becker	Lands and Realty	No	3/10/2011
Marcia Butorac	Recreation and Facilities	No	3/16/2011
Merben Cebrian	ANILCA, Section 810	Yes	3/24/2011
Merben Cebrian	T&E Animals	Yes	3/24/2011
Merben Cebrian	T&E Plants	Yes	3/24/2011
Merben Cebrian	Wildlife	Yes	3/24/2011
Heath Emmons	Wild and Scenic Rivers	No	3/15/2011
Marnie Graham	Public Affairs	Yes	3/25/2011
Denton Hamby	Special Recreation Use	No	3/10/2011
Denton Hamby	Visual Resources	Yes	3/10/2011
Brad Honerlaw	Law Enforcement	N/A	
Alysia White	Law Enforcement	N/A	
John Jangala	Cultural Heritage	Yes	3/26/2011
John Jangala	Paleontology	No	3/26/2011
Cory Larson	Travel Management	Yes	3/24/2011
James Whitlock	Minerals	N/A	
Ben Seifert	Fire Management	No	3/24/2011
Ben Seifert	Forestry	Yes	3/24/2011
Ben Seifert	Invasive Weeds	Yes	3/24/2011
Ben Seifert	Soils	N/A	
Tim Sundlov	Air Quality	N/A	
Tim Sundlov	Riparian & Wetlands	Yes	3/11/2011
Tim Sundlov	Water Quality	Yes	3/11/2011
Tim Sundlov	Fish Biology	Yes	3/11/2011
Joseph Hart	Hazardous Materials		
Elijah Waters	Branch Chief - Resources		

Authorized Officer Review: \_\_\_\_\_ Date: \_\_\_\_\_