State of Alaska
Department of Transportation & Public Facilities

CATEGORICAL EXCLUSION DOCUMENTATION FORM FOR HIGHWAY PROJECTS

Project Name: **Dalton Highway MP 11 - 18 Reconstruction**
Project Number (state/federal): **62196/NH-065-2(12)**
Date: **16 July 2010**
CE Designation: **23 CFR 771.117(d)(1)**
List of Attachments: **Figures 1 - 4: Project Corridor**
Appendix A: Public and Agency Coordination
Appendix B: Section 106 Consultation
Appendix C: Wetlands Assessment

I. Project Purpose and Need

The purpose of this project is to improve the safety and performance of the Dalton Highway between mileposts (MP) 11 and 18 by reconstructing the roadway. The Dalton Highway is part of the National Highway System and provides the only vehicle access across Interior Alaska from Fairbanks to Deadhorse, serving as a critical supply route between commerce and industrial centers. The original roadway was thought of as a haul route to support the Trans Alaska Pipeline System and was constructed to the former State of Alaska Department of Highways secondary road standards. Today, the Alaska Department of Transportation & Public Facilities (DOT&PF) general data log designates the Dalton Highway as a rural principal arterial that supports heavy truck and tourism traffic. DOT&PF anticipates an increase in future traffic with continued industrial development, regional tourism, and renewed interest in the Alaska natural gas pipeline.

Several deficiencies have been observed in the MP 11-18 corridor, including:

- Fill sections across some low areas are showing signs of major foundation failures.
- Generally, the entire roadway is very narrow and inconsistent in width, particularly through 12-Mile curve and the Erickson Creek area; truckers currently radio ahead and pull over as needed to allow for one-way traffic. Realignment is desirable.
- There are several areas where continuous settlement is occurring, including a section at MP 14 that required a recent 2-foot grade raise.
- There is a lack of cross culverts and ditches in several locations.
- The shot rock embankment on some steeper grades seems to be promoting the flow of water to follow the roadbed and saturate the embankment in low areas.
- Steep grades (up to 12%)

II. Project Description

The MP 11-18 portion of the Dalton Highway is located in Township 9N, Range 7W, Sections 17, 19, 20, 26 through 30, and 36, Fairbanks Meridian, USGS quadrangles Livengood C-4 and C-5 (Figure 1).

This project proposes to widen the existing highway to a uniform top width of 32 feet (lanes and shoulders), widen the recovery area (clear zone), reduce grades, flatten horizontal curves, and construct a realignment at Erickson Creek (MP 12). Paving this section of road is currently under evaluation. The cross section upgrades would be consistent with previous Dalton Highway reconstruction projects. Existing culverts would be extended, failed culverts replaced, and new culverts installed as needed to improve drainage. The existing highway profile would be raised in the range of 1 to 15 feet to meet sight distance requirements for a 50 MPH design speed. At Erickson Creek (MP 12, Figure 2), the project proposes to realign approximately 3,500 feet of the highway in order to replace the existing 30 MPH reversing horizontal curves with new curves meeting 50 MPH design standards. In conjunction, there would be a proposed change in the profile by as much as 30 feet to provide flatter grades on the realignment compared to the existing highway (8% vs. 10%) and to facilitate an all-

embankment construction to avoid excavation in a known area of ice-rich soils. To accommodate the proposed realignment, the existing 123-foot long by 10-foot diameter culvert in Erickson Creek would be removed, and a new culvert that is approximately 14 feet in diameter and 230 feet in length would be installed approximately 100 feet south of the existing culvert. The new culvert would be designed to meet current ADF&G Tier I fish passage standards.

Several realignment alternatives were considered to address the operational and safety concerns associated with the existing highway geometry at MP 12. Realignment alternatives proposed north of the existing highway were eliminated from consideration primarily due to greater amounts of new highway constructed over undisturbed ground, crossing Erickson Creek at new locations, longer culvert lengths, steep grades, and deep sidehill fills. To the extent possible, the proposed realignment utilizes the disturbed areas associated with the existing highway The proposed action, as described in this document, meets the project purpose and need and applicable design criteria while avoiding and minimizing environmental impacts.

An existing 200-acre, State owned material site (MS # 65-3-013-2), commonly known as 19-Mile Hill Quarry (Figure 4), would be made available to the project. Existing roads would provide access. Wetland delineations and cultural/historical surveys of the material site were completed in conjunction with the MP 11-18 highway corridor. The site includes both previously mined and undisturbed areas. Approximately 850,000 cubic yards of material would be needed to meet the project's embankment needs. It is estimated that 250,000 cubic yards of material would be extracted from the already disturbed area, with the balance (600,000 cubic yards) extracted from undisturbed areas.

III. Environmental Consequences

Complete the following. For each yes, summarize the activity evaluated, the magnitude of the impact and the potential for significant impact based on context and intensity. An alternatives analysis (e.g. Avoidance and Minimization Checklist) is required for any consequence category with an asterisk (*). Attach analysis as appropriate.

A. Right-of-Way Impacts	N/A	YES	NO
1. Additional right-of-way required.	☐	☒	☐
a. Permanent easements required. Estimated number of parcels:	☐	☐	☒
b. Full or partial property acquisition required. Estimated number of full parcels: Estimated number of partial parcels:	☐	☐	☒
c. Property transfer from state or federal agency required. *If yes, list agency in No. 4 below.*	☐	☒	☐
d. Business or residential relocations required. *If yes, summarize the findings of the conceptual stage relocation study in No. 4 below and attach the conceptual stage relocation study.* No. of relocations: N/A Type of relocation: Residential: ☐ Business: ☐ Residential (Indicate number: N/A) Business (Indicate number: N/A)	☐	☐*	☒
e. Last-resort housing required.	☐	☐	☒
2. Will the project or activity adversely affect any low-income or minority populations as defined in E.O. 12898 (DOT Order 6640.23, December 1998).	☐	☐	☒
3. The project will require the use of land from the Alaska National Interest Lands Conservation Act (ANILCA). *If yes, the project is not assigned to the State per SAFETEA-LU Section 6004 and the CE must be sent to FHWA for approval.*	☐	☐	☒

4. Summarize the impacts.

A.1. Construction activities would mostly occur within the existing 200-foot highway easement. Partial property acquisition or transfer from the Alaska Department of Natural Resources would be required near Erickson Creek between MP 12 and MP 13. The actual location and size of potential property transfer is currently being determined.

A.2. There are no communities or residential areas within the project corridor. No adverse affects on low-income or minority populations are expected.

B. Social Impacts	N/A	YES	NO
1. The project will affect neighborhoods or community cohesion.	☐	☐	☒
2. The project will affect travel patterns and accessibility (e.g. vehicular, commuter, bicycle, or pedestrian).	☐	☒	☐
3. The project will affect school boundaries, recreation areas, churches, businesses, police and fire protection, etc. Include the direct and indirect impacts from the displacement of businesses in the analysis.	☐	☐	☒
4. The project will adversely affect the elderly, handicapped, nondrivers, transit-dependent, minority and ethnic groups, or the economically disadvantaged.	☐	☐	☒
5. There are unresolved project issues or concerns of a local Indian tribe [as defined in 36 CFR 800.16(m)]. *If yes, the project is not assigned to the State per SAFETEA-LU Section 6004 and the CE must be sent to FHWA for approval.*	☐	☐	☒

6. Summarize impacts, if any.

B.1, B.3, and B.4: The closest community to the proposed project is Livengood which is located approximately 11 miles to the southeast. The Dalton Highway corridor is largely unpopulated with the next communities of Coldfoot and Wiseman lying approximately 157 and 170 miles north of the project area. As a result, the proposed action will not affect neighborhoods, community cohesion, school boundaries, recreation areas, churches, etc. Neither will elderly, handicapped, minority, or economically disadvantaged groups be adversely affected.

B.2: The project will temporarily affect travel patterns and accessibility (largely commercial and some recreational) in the form of detours and temporary lane and road closures during construction.

C. Economic Impacts	N/A	YES	NO
1. The project will have economic impacts on the regional and/or local economy, such as effects on development, tax revenues and public expenditures, employment opportunities, accessibility, and retail sales.	☐	☐	☒
2. The project will affect established businesses or business districts.	☐	☐	☒

3. Summarize impacts, if any.

C. 1: Communication with local trucking and recreational companies along with Alyeska Pipeline Service Company was initiated during the scoping period to identify any potential economic impacts. Responses did not indicate any foreseeable adverse economic impacts to their respective businesses. Refer to Section V. Comments and Coordination or Appendix A: Public and Agency Coordination.

C.2: There are no established businesses or business districts within the project area.

D. Local Land Use and Transportation Plans	N/A	YES	NO
1. Project is consistent with local land use plan.	☐	☒	☐
2. Project is consistent with local transportation plan.	☐	☒	☐
3. Project would induce adverse indirect and cumulative effects.	☐	☐	☒

4. Summarize any adverse effect on the local transportation and land use plan, including indirect and cumulative effects.

D.1 and D.2: The management goals stated in the1998 Dalton Highway Master Plan are to maximize economic development, maintain public safety, and to promote responsible natural resource management along the highway. The proposed action is consistent with these goals in that it would improve roadway safety by upgrading the existing highway as described in Section II. There are no other local land use or transportation plans applicable to the proposed action.

The Dalton Highway was constructed in 1974 as a "haul road" and was designed to 30 MPH standards. In 1994, the Alaska state government opened the highway to the general public. The evolution of the road into a rural principal arterial has made rehabilitation and reconstruction projects along the highway a regular occurrence.

D.3: The proposed action would not induce adverse indirect impacts as a result of other localized projects. The minimal direct impacts incurred by the project are not anticipated to contribute to reasonably foreseeable cumulative impacts.

E. Impacts to Historic Properties	N/A	YES	NO
1. This project would have no potential to affect historic properties. *This project meets the criteria for no formal review under Section 106 of the National Historic Preservation Act [36 CFR 800.3(a)(1)] per the May 2, 2006 determination by the Alaska Division of FHWA. If yes, attach concurrence from the FHWA Area Engineer (non-assigned projects) or Statewide NEPA Manager for 6004 (assigned-projects) and proceed to next section.*	☐	☐	☒
2. Is a National Register listed or eligible property in the Area of Potential Effect?	☐	☐	☒

3. Date Consultation/Initiation Letters sent: The Federal Highway Administration concurred on 2 September 2009 with DOT&PF's determination to go directly to a findings letter to obtain the SHPO's concurrence with a finding of No Historic Properties Affected (NHPA). This determination was based on the conclusions of the cultural resources survey report (Appendix B), and on the fact that no regional native corporation lands occur in the project area. Tribal entities are being given the opportunity to comment directly on the NHPA findings letters. *Attach copies to this form. If no letters sent explain why not.*

4. Date "Finding of Effect" Letters sent 24 May 2010 *(Copies of individual letters are included in Appendix B: Section 106 Consultation)*

5. Date SHPO concurred with "Finding of Effect" 30 June 2010 *(Concurrence from SHPO has been included in Appendix B: Section 106 Consultation).*

6. Will there be an adverse effect on a historic property? *If yes, attach correspondence and signed MOA. If yes, Programmatic Agreements (PCE) do not apply.*	☐	☐	☒

7. Summarize effects to historic properties.

E.1 through E.6: The roadway Area of Potential Effect (APE) for the proposed action (as determined by the DOT&PF) includes an approximately 300-foot wide corridor centered on the existing highway alignment

E. Impacts to Historic Properties

between MP 11 and 18. The roadway APE was widened between MP 12 and 13 to accommodate the realignment in this area. The proposed action is shown as Alternative #4 in Figure 2 included with the Finding of Effect letters (Appendix B: Section 106 Consultation). The APE for the available material site, 19-Mile Hill Quarry, is roughly 274 acres and includes previously mined as well as undisturbed areas. Archaeological surveys were conducted for the roadway and material site APEs in July 2008. No previously undocumented historic properties were identified. No National Register listed or eligible properties occur within the project area. Pursuant to 36 CFR 800.4(d)(1), implementing regulations of Section 106 of the National Historic Preservation Act, DOT&PF finds that no historic properties would be affected by the proposed action. Formal Section 106 consultation was initiated with the State Historic Preservation Office (SHPO) and local tribal entities through the "Finding of Effect" letters dated 24 May 2010. Concurrence with the finding of No Historic Properties Affected was issued on 30 June 2010 (See Appendix B: Section 106 Consultation). No other comments or concerns from the local tribal entities were received.

Should cultural resources be encountered or suspected during the course of any construction activity, work would cease immediately and the SHPO would be contacted.

Note: The Dalton Highway itself is within the APE and has not been evaluated as a potential historic property. Historic significance and National Register eligibility of the Dalton Highway will ultimately be assessed through the historic context efforts of the recently implemented *Programmatic Agreement Regarding Alaska's Highway System Roads Affected by the Federal Aid Highway Program* (23 February 2010).

F. Wetland Impacts	N/A	YES	NO
1. Project involves wetlands as defined by the U.S. Army Corps of Engineers (USACE). *If yes, document public and agency coordination required per E.O. 11990, Protection of Wetlands.*	☐	☒*	☐
2. Wetlands delineated in accordance with the "*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0) Sept. 2007*".	☐	☒	☐
3. Estimated area of involvement (i.e. acres): 25.5 acres (highway improvements) + 23 acres (material site)			
4. Estimated fill quantities (cubic yards): 275,000 cubic yards (highway improvements)			
5. Estimated dredge quantities (cubic yards): 2,500 cubic yards (highway improvements) + 600,000 cubic yards (material site)			
6. USACE authorization anticipated? *If yes, type*: NWP ☒ **or** Individual ☒ GP ☐ Other ☐		☒	☐

7. Summarize wetlands impacts and attach following supporting documentation as appropriate:

- Avoidance and Minimization Checklist. Included in Appendix C: Wetlands Assessment
- Wetlands Delineation. *Wetlands Assessment and Preliminary Jurisdictional Determination for the Dalton Highway MP 11-18 Reconstruction Project Area, Alaska* is included in Appendix C: Wetlands Assessment
- Jurisdictional Determination (JD). Preliminary JD is included in Appendix C; USACE concurrence will be acquired during the permitting effort

F. Wetland Impacts

- Copies of public and resource agency letters received in response to the request for comments.

A project scoping letter was sent to the USACE on 3 February 2010; no comments or concerns regarding wetland impacts were received in response to this communication. A preliminary JD is included in Appendix C and concurrence will be requested from the USACE during the permitting phase of the project. Public notice subject to EO 11990 has not been conducted at this time; the public will have the opportunity to comment on the proposed wetland impacts when the USACE issues public notice during their permit review period.

Upon approval of this environmental document, the applicability of Nationwide Permit 23 (Approved Categorical Exclusions) will be reviewed and possibly applied; or an Individual Section 404 permit application will be submitted.

8. Wetlands Finding:	N/A	YES	NO
a. Are there practicable alternatives to the proposed construction in wetlands? *If yes, the project cannot be approved as proposed.*	☐	☐	☒
b. Does the project include all practicable measures to minimize harm to wetlands? *If no, the project cannot be approved as proposed.* List any commitments and mitigative measures in Section VI.	☐	☒	☐
c. Only practicable alternative: Based on the evaluation of avoidance and minimization alternatives, there are no practicable alternatives that would avoid the project's impacts on wetlands. The project includes all practicable measures to minimize harm to the affected wetlands as a result of construction. *If no, the project cannot be approved as proposed.*	☐	☒	☐

Wetlands impacts are as follows:

Although the National Wetlands Inventory (NWI, 1977) classified a majority of the project area as uplands, field delineations revealed that wetlands are more prevalent. An initial field delineation for the proposed project area was performed in September 2005 in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual.* An additional delineation was conducted in August 2007 compliant with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0) September 2007* (full report is available in Appendix C: Wetlands Assessment). The study area consisted of 362 acres along the highway and 192 acres at the 19-Mile Hill Quarry material site.

Erickson Creek, which crosses the Dalton Highway at approximately MP 12, is a permanently flooded creek, classified as a Relatively Permanent Water that ultimately connects downstream to Hess Creek and the navigable Yukon River. Numerous intermittent streams are present in the project area and can generally be characterized as small, headwater streams that are likely dry for a majority of the year. All of these waters are considered non-navigable; there are no navigable waters present within the project area.

Dalton Highway Corridor Impacts

The wetlands assessment concluded that over 60% (225 acres) of the area abutting the existing highway is wetlands. The different wetland types are located in a wide range of landscapes including the undisturbed black spruce forests, the severely burned areas from a 2003 forest fire, isolated wetlands associated with previous construction and clearing/firebreak activities, and a small number of roadside ditches that are permanently flooded. The dominant wetland types are Saturated Emergent Meadow, Saturated Broadleaf Evergreen/Needleleaf Evergreen Scrub, and Saturated Broadleaf Evergreen Scrub/Emergent Meadow. Vegetated uplands were found in higher elevations along south facing slopes, riverbanks, and disturbed areas along the existing highway.

With the exception of the proposed realignment at Erickson Creek, all the improvements involve widening the existing highway by an average of 15 feet on each side. Assuming approximately 60% of the existing highway abuts wetlands, then over the 6.5 miles of project length the widening equates to an estimated impact area of roughly 14 acres. The estimated fill quantity in wetlands is 50,000 cubic yards.

MP 12 Realignment Impacts

Approximately 3,500 feet of the Dalton Highway would be realigned at MP 12. The need for re-aligning this section of highway is to replace the existing, 30 MPH horizontal curves with curves that meet requirements for a 50 MPH design speed. The curve improvements would be consistent with previous reconstruction projects completed along the Dalton Highway. The total mapped wetland area in the vicinity of the realignment is approximately 32 acres, consisting of Upper Perennial River, Saturated Broadleaf Deciduous Scrub, and Saturated Emergent Meadow. The proposed realignment would impact 11.5 acres, with an estimated fill volume of 225,000 cubic yards.

To accommodate the proposed realignment, the existing 123-foot long by 10-foot diameter culvert would be removed and a new culvert approximately 14 feet in diameter and 230 feet in length would be installed at a new location approximately 100 feet south of the existing culvert. Roughly 300 feet of the existing creek channel would be bypassed and filled to accommodate the realignment. The new culvert would be designed to meet current ADF&G Tier I fish passage standards.

Material Site Impacts (MS#-65-3-013-2)

Material to construct the project would come from this open and active 200-acre material site. The estimated quantity of material required is 850,000 cubic yards. It is anticipated that material would be extracted from both the active mining and the undisturbed areas. Site access would be via the existing road.

Approximately 192 acres were mapped with 139 acres classified as wetlands. The dominant wetland type (131 acres) is Saturated Emergent Meadow. Approximately 54 acres were classified as Upland and Upland Fill with 25 acres (Upland Fill) comprising the disturbed or active mining portions of the site. It is estimated that approximately 250,000 cubic yards of material would be generated within the active mining and Upland areas by increasing the depth of excavations. The balance of material (600,000 cubic yards) would need to be extracted from approximately 12.5 acres of undisturbed wetland areas. An additional 10.5 acres would need to be cleared for stockpiling the overburden and waste (material not meeting specifications), processing, and for stockpiling the construction materials.

Material unsuitable for reuse would be disposed of at a contractor-provided, DOT&PF approved, upland location. A USACE Individual Section 404 Permit or NWP for the above activities would be secured prior to construction.

G. Fish and Wildlife	N/A	YES	NO
1. Anadromous or resident fish habitat.			
a. Adverse effect on spawning habitat.	☐	☐*	☒
b. Adverse effect on rearing habitat.	☐	☐*	☒
c. Adverse effect on migration corridors.	☐	☐*	☒
d. Adverse effect on subsistence species.	☐	☐*	☒
2. Essential Fish Habitat (EFH).			
a. EFH present in project area.	☐	☐	☒
b. Project proposes construction in EFH. *If yes describe EFH impacts in No. 5.*	☒	☐	☐
c. Project may adversely affect EFH. *If yes, attach EFH Assessment.*	☒	☐*	☐
d. Project includes conservation recommendations proposed by NOAA Fisheries. *If no, formal notification must be made to NOAA Fisheries. (Summarize the final conservation measures in No. 5 and list in Section VI).*	☒	☐	☐

G. Fish and Wildlife	N/A	YES	NO
3. Wildlife Resources (game/subsistence species):			
a. Project is in area of high wildlife/vehicle accidents.	☐	☐	☒
b. Project would bisect migration corridors.	☐	☐	☒
c. Project would segment habitat.	☐	☐	☒
d. Project would adversely affect species of concern to Alaska Department of Fish and Game (ADF&G). *If yes, attach appropriate documentation from ADF&G that demonstrates the project would not result in significant adverse impacts.*	☐	☐*	☒
4. Bald and Golden Eagle Protection Act			
a. Project visible from an eagle nesting tree? *If yes, consult with USFWS National Bald Eagle Management Guidelines and attach documentation of consultation.*	☐	☐*	☒
b. Project within 330 feet of an eagle nesting tree? *If yes, consult USFWS National Bald Eagle Management Guidelines and attach documentation of consultation.*	☐	☐*	☒
c. Project within 660 feet of an eagle nesting tree? *If yes, consult with USFWS National Bald Eagle Management Guidelines and attach documentation of consultation.*	☐	☐*	☒
d. Will the project require blasting or other activities that produce extreme loud noises within 1/2 a mile from an active nest? *If yes, consult USFWS National Bald Eagle Management Guidelines and attach documentation of consultation.*	☐	☐*	☒

5. Summarize adverse fish and wildlife impacts.

G.1. Erickson Creek crosses the Dalton Highway within the project area near milepost 12. Arctic grayling have been observed in Erickson Creek above the existing culvert under the Dalton Highway (Appendix A: Public and Agency Coordination), however the existing culvert is perched and does not meet current fish passage standards. No anadromous fish species have been recorded in the creek. Fish surveys of Erickson Creek were conducted by ABR, Inc., during summer 2009 for the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (in support of the Alaska Department of Fish and Game's Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes) (ABR, Inc., unpublished data). No previous surveys of Erickson Creek had been conducted for this catalog. The sampling site on Erickson Creek in 2009 was approximately 6 miles downstream from where the creek crosses the Dalton Highway. No anadromous fish were found but arctic grayling, slimy sculpin, and longnose sucker were documented as present. Another resident species, burbot, may occur in Erickson Creek based on the species occurrence downstream of Erickson Creek in the larger Hess Creek.

Approximately 3,500 feet of the Dalton Highway would be realigned at MP 12. To accommodate the proposed realignment, the existing 123-foot long by 10-foot diameter culvert at Erickson Creek would be removed and a new culvert approximately 14 feet in diameter and 230 feet in length would be installed at a new location approximately 100 feet south of the existing culvert. Roughly 300 feet of the existing creek channel would be bypassed and filled to accommodate the realignment. The new culvert would be designed to meet current ADF&G Tier I fish passage standards. The new culvert would improve connectivity between the upstream and downstream reaches and provide additional upstream habitat for resident fish species.

G.1.a and b. No adverse effects on resident fish-spawning habitat or rearing habitat are expected to occur. Road construction techniques would be implemented to minimize runoff and the delivery of fine sediments into streams. Sediment barriers could be used to isolate work areas from all flowing waters, thereby eliminating sedimentation concerns during fish-spawning and rearing periods. All in-water construction for this project would be timed to avoid fish-spawning and rearing periods. Arctic grayling return to spawning

streams in spring and young emerge from gravel in early summer. Performing in-water construction in mid-late summer would help to avoid any possible effects on resident fish-spawning habitat or rearing habitat.

G.1.c. The portion of Erickson Creek within the project area is not part of a fish migration corridor for anadromous species. The movements of resident fish species in the creek should be improved by the proposed action. The existing culvert at Erickson Creek (~123 feet long and 10 feet in diameter) may allow for the passage of some fish (arctic grayling), but it does not meet current fish passage standards. The proposed culvert would be designed to meet current ADF&G Tier I fish passage standards.

G.1.d. No subsistence fish species are known to occur in Erickson Creek.

G.2.a. Essential Fish Habitat (EFH) is not present in the project area.

G.2.b, c, and d. Not applicable because Essential Fish Habitat (EFH) is not present in the project area.

G.3.a. The project is not in an area of high wildlife–vehicle accidents. A summary of the animal–vehicle collision data for the Dalton Highway for the years 2004–2008 shows there was only one collision on the entire highway during that period; the collision occurred at MP 345, well north of the project area (Joanna Reed, Alaska DOT&PF, pers. comm.).

G.3.b. The project would not bisect wildlife migration corridors because the proposed action would only widen the existing highway. There is no possibility for any additional disruption of wildlife migration corridors from this reconstruction project. .

G.3.c. The project would not segment wildlife habitat. Because this project would occur within and alongside the existing Dalton Highway road corridor, there is no possibility for any additional segmentation of wildlife habitat.

G.3.d. The project would not adversely affect species of concern to the Alaska Department of Fish and Game (ADF&G). Four vertebrate species that could potentially occur as breeders in the project area (road right-of-way and material site), based on the availability of suitable habitats and the breeding ranges of the species, are listed on the State of Alaska Species of Concern list, effective November 27, 1998 (http://www.adfg.state.ak.us/special/esa/species_concern.php). These species are: Olive-sided Flycatcher, Gray-cheeked Thrush, Townsend's Warbler, and Blackpoll Warbler.

An additional 13 vertebrate species that also could occur as breeders in the project area are considered featured species for conservation in the ADF&G's Comprehensive Wildlife Conservation Strategy published in 2006 (http://www.sf.adfg.state.ak.us/statewide/ngplan/NG_outline.cfm). These species are: Hairy Woodpecker, American Three-toed Woodpecker, Black-backed Woodpecker, Northern Flicker, Boreal Chickadee, Hermit Thrush, Varied Thrush, Wilson's Warbler, White-crowned Sparrow, Dark-eyed Junco, Rusty Blackbird, Pine Grosbeak, and White-winged Crossbill.

American Three-toed Woodpecker and Black-backed Woodpecker breed in coniferous spruce forests and prefer burned areas with standing dead trees, which is a common habitat type in the project area. Some nesting habitat for these woodpeckers may be lost due to road construction and material extraction but the amount of habitat expected to be removed is small relative to the large amount of habitat available outside of the project area. Hairy Woodpecker, Olive-sided Flycatcher, Boreal Chickadee, Hermit Thrush, Varied Thrush, Townsend's Warbler, Dark-eyed Junco, Pine Grosbeak, and White-winged Crossbill breed mainly in coniferous and mixed coniferous-deciduous forests. A small amount of breeding habitat for these nine species occurs within the project area. Clearing of forest habitat for the proposed action is expected to be minimal and would be confined to the forest edge along the existing roadway or within the existing material site. Therefore, no adverse effects on these species are expected. Northern Flicker, Gray-cheeked Thrush, Blackpoll Warbler, Wilson's Warbler, White-crowned Sparrow, and Rusty Blackbird nest in scrub and woodland habitats, along forest edges, and in riparian thickets, which is the most common habitat type within the project area. Some nesting habitat for these six species is likely to be affected by mining activities within the material site and clearing of vegetation for the proposed action, but the amount of habitat to be removed is not expected to be great relative to the large amount of habitat available outside of the project area . Additionally, the clearing of

vegetation would occur outside the breeding season (see below), thus avoiding significant adverse impacts to the breeding populations of all bird species.

A few birds of prey that are considered to be of conservation concern to the ADF&G (hawks, falcons, and owls) occasionally could forage in the project area, but no breeding by these species is expected in the project area because suitable and undisturbed breeding habitats are not available there.

All migratory bird nests, eggs, and nestlings, including the species discussed above, are protected by the Migratory Bird Treaty Act. The Act prohibits the willful killing or harassment of migratory birds. The U.S. Fish and Wildlife Service (USFWS) recommends that clearing and grubbing activities in potentially suitable nesting habitats be completed prior to May 1 or after July 15 to avoid impacts to breeding migratory birds. This would render the area unsuitable for breeding birds prior to their arrival. However, the USFWS does not recommend large areas (greater than 5 acres) be stripped of vegetation more than one month prior to initiating work, which could result in even greater damage caused by excessive erosion (Bob Henszey, USFWS, Fairbanks, pers. comm.). Specifications in the construction contract for this work will state that all clearing activities must occur prior to 1 May or after 15 July.

G.4.a, b, c, d. The project area is not visible from a Bald Eagle nesting tree or a Golden Eagle cliff nest, and does not occur within 330 feet, 660 feet, or ½ mile of an eagle nest. The raptor database maintained by the Fairbanks Field Office of the USFWS does not include any eagle or other raptor nests near the proposed action. The closest known raptor nest is a Red-tailed Hawk nest about 3.25 miles northeast of MP 18, and somewhat closer to MP 20. There is a Golden Eagle nest on Hess Creek near MP 33, and about 11.75 miles northwest of MP 18. The USFWS database is not current, but it does provide an indication of potential raptor nesting sites. As long as the proposed reconstruction work remains within the project area, USFWS does not expect project-related activities to affect raptor nesting behavior (Bob Henszey, USFWS, Fairbanks, pers. comm.). However, if either a Bald or Golden Eagle nest is identified within a half mile of the project, DOT&PF is requested to contact the USFWS Permit Office at: permitsR7MB@fws.gov or 907-786-3685, and refer to http://alaska.fws.gov/eaglepermit/permit.htm for additional guidance. Disturbance within one-quarter mile of other raptor nests should be avoided between 15 April and 1 August (Bob Henszey, USFWS, Fairbanks, pers. comm.).

H. Threatened and Endangered Species (T&E)	N/A	YES	NO
1. Listed threatened or endangered species present.	☐	☐	☒
2. Threatened or endangered species migrate through the project area.	☐	☐	☒
3. Proposed species present in project area.	☐	☐	☒
4. Candidate species present in project area.	☐	☐	☒
5. Project is likely to adversely affect a listed T&E species or critical habitat. *If yes, formal Section 7 consultation is required, and the project may not be assigned to the State per SAFETEA-LU Section 6004 and the CE must be sent to FHWA for approval*.	☐	☐	☒
6. Summarize the findings of the biological assessment and the biological opinion of the agency with jurisdiction.	☒	☐	☐

H.1-5. No listed, candidate, or proposed threatened or endangered species occur in the project area during the breeding or nonbreeding seasons or during migration. The project would not adversely affect a listed threatened or endangered species or critical habitat. In a letter dated 19 March 2010, the USFWS stated that no federally threatened or endangered species occur in the vicinity of MP 11–18 of the Dalton Highway, and no designated or critical habitat units occur in interior Alaska (Appendix A: Public and Agency Coordination). In addition, the USFWS stated that the proposed action is not likely to adversely impact listed species. Preparation of a Biological Assessment or further consultation under section 7 of the Endangered Species Act regarding this project is not necessary.

I. **Water Body Involvement**	N/A	YES	NO
1. Project affects a water body.	☐	☒*	☐
2. Project affects a navigable water body as defined by USCG, (i.e. Section 9).	☐	☐*	☒
3. Project affects Waters of the U.S. as defined by the USACE, Section 404.	☐	☒*	☐
4. Project affects Navigable Waters of the U.S. as defined by the USACE, Section 10.	☐	☐*	☒
5. Project affects a resident fish stream (i.e. A.S. 16.14.841)	☐	☒	☐
6. Project affects a cataloged anadromous fish stream (i.e. A.S. 16.14.871).	☐	☐*	☒
7. Project affects a designated Wild and Scenic River or land adjacent to a Wild and Scenic River. *If yes, the Regional Environmental Manager should consult with the Statewide NEPA Manager for 6004 (assigned CEs) or FHWA Area Engineer (non-assigned CEs) to determine applicability of Section 4(f).*	☐	☐	☒

8. Proposed river or stream involvement: Bridge ☐ Culvert ☒ Embankment Fill ☒ Relocation ☒ Diversion ☒ Temporary ☒ Permanent ☒ N/A ☐
9. Type of stream or river habitat impacted: Spawning ☐ Rearing ☐ Pool ☐ Riffle ☐ Undercut bank ☐ N/A ☒
10. Amount of fill below: OHW 6,000 CY MHW None HTL None
11. Summarize impacts:

I.1: Work within and around Erickson Creek (MP 12) is required to accommodate the new road alignment in the immediate area. Realigning the stream channel would remove approximately 400 feet of stream meander (length includes existing 123-foot culvert). A new, 230-foot culvert would be placed approximately 100 feet south of the existing culvert and would be angled roughly north/south instead of east/west (Figure 2). The slope of the proposed culvert would be less than 2% to mimic with the natural slope of the creek. The reconstructed creek crossing would be designed to meet Tier I fish passage standards.

Flow through the existing culvert and stream channels would be maintained while the new roadway embankment and culvert are constructed and installed. However, a temporary diversion of the creek may be necessary to direct the creek away from the active construction area.

Water quality impacts are addressed in Section O.2.

I.2: By definition (33 CFR Subpart 2.05-25), Erickson Creek is not a USCG navigable waterbody.

I.3: The project affects Erickson Creek, considered a Section 404 Water of the U.S.

I.4: Erickson Creek is not listed on the Corps of Engineers Alaska District, Navigable Waters list.

I.5: The following resident fish species occur or are likely to occur in Erickson Creek: arctic grayling, slimy sculpin, longnose sucker, and burbot (see Section G). Temporary impacts to the creek would occur during construction, but permanent impacts to fish habitat and passage are not anticipated.

I.6: Erickson Creek is not a cataloged anadromous fish stream (Section G).

I.7: There are no designated Wild and Scenic Rivers within or adjacent to the project area.

I.8: The existing culvert at Erickson Creek would need to be replaced to accommodate the road realignment. The channel would be rerouted through a new, longer culvert, removing approximately 300 feet of the stream channel. During construction, the existing culvert may be utilized to maintain flow through the creek and allow for half width construction to minimize traffic detours. However, a temporary diversion of the creek may be necessary near the inlet of the new culvert. Embankment fill would be required for construction detours and to secure the new culvert.

I.9: No adverse impacts to stream or river habitat are anticipated (Section G).

J. **Alaska Coastal Management Program (ACMP)**	N/A	YES	NO
1. Project is within the Alaska Coastal Management Program boundary.	☐	☐	☒
2. Project is within a local coastal management district. *If yes, consult with the local coastal management official and attach correspondence.*	☐	☐	☒
3. Project is consistent with local and state coastal management plans. *If no, the project cannot be approved as proposed.*	☒	☐	☐

4. Finding:

J.1 and J.2: The proposed action is not located within the Alaska Coastal Management Program boundary or within a local coastal management district.

K. **Hazardous Waste (HW)**	N/A	YES	NO
1. There are known or potentially contaminated sites along the corridor.	☐	☐	☒
2. The existing and/or proposed ROW is contaminated.	☐	☐	☒
3. Extensive excavation is proposed adjacent to, or within, a known HW site.	☐	☐*	☒
4. Potential for encountering hazardous waste during construction is high.	☐	☐	☒

5. Summarize impacts of any 'yes' marked in 1-4 and attach appropriate HW investigation report.

K.1 - K.5: The Alaska Department of Environmental Conservation's Contaminated Sites Database was reviewed. No known open or closed contaminated sites exist within the project area. The nearest site is located approximately four miles south of the project at milepost 7 of the Dalton Highway. Based on existing knowledge of contaminated sites in the area, the likelihood of encountering contamination during excavation and construction activities is considered low. Should contaminated or hazardous materials be encountered during construction, ADEC would be contacted and a corrective action plan compiled for approval by ADEC.

L. **Air Quality (Conformity)**	N/A	YES	NO
1. The project is located in an air quality maintenance area or nonattainment area (CO or PM-10). *If yes, indicate CO ☐ or PM-10 ☐ and complete the remainder of this section. If no, continue to Section M.*	☐	☐	☒
2. If applicable, the project is included in a conforming Long Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) (state dates of FHWA/FTA conformity determination). Date: _____	☒	☐	☐
3. The project is exempt from an air quality analysis per 40 CFR 93.126 (Table 2 and Exempt Projects). *If yes, continue to next section. If no, complete the remainder of this section. Note: A project-level air quality conformity analysis is required for CO nonattainment and maintenance areas and a qualitative project-level analysis is required for PM-10 nonattainment and maintenance areas.*	☒	☐	☐
4. Have there been any significant changes in the design, concept, and/or scope as discussed in the most recent conforming TIP and LRTP? *If yes, describe changes in No. 7. In addition, the project must satisfy the conformity rule's requirements for projects not from a plan and TIP, or the plan and TIP must be modified to incorporate the revised project (including a new conformity analysis).*	☒	☐	☐
5. If required, a CO project-level analysis was completed meeting the requirements of Section 93.123 of the conformity rule. The results satisfy the requirements of Section 93.116(a) for all areas or 93.116(b) for nonattainment areas. *Attach a copy of the analysis.*	☒	☐	☐
6. If required, a PM-10 project-level air quality analysis was completed meeting the requirements of Section 93.123 of the conformity rule. The results satisfy the requirements of Section 93.116(a). (The thresholds are different for PM-10 than they are for CO). *Attach a copy of the analysis.*	☒	☐	☐

L. Air Quality (Conformity)

7. Summarize air quality impacts:

L.1: The proposed action is not located within an air quality maintenance area or nonattainment area. An air quality analysis is not required (Appendix A: Public and Agency Coordination). Temporary impacts to air quality in the form of dust and exhaust from heavy equipment may occur during construction (refer to section P); however, no permanent impacts to air quality as a result of this project are anticipated.

M. Floodplain Impacts (23 CFR Part 650, Subpart A)

		N/A	YES	NO
1.	Project encroaches longitudinally into the 100-year floodplain (i.e. base floodplain in fresh or marine waters). *If yes, public comments on the action must be requested and comments received attached. Summarize the findings and attach the "Location Hydraulic Study" developed per 23 CFR 650.111.*	☐	☐	☒
2.	Project encroaches into a regulatory floodway. *If yes, attach the location hydraulic study.*	☐	☐*	☒
3.	The proposed action would increase the base flood elevation one-foot or greater. *If yes, attach the "Location Hydraulic Study".*	☐	☐	☒
4.	The encroachment is significant as defined by 23 CFR 650.105. *If yes, the project cannot be approved as proposed without a finding that the proposed action is the "Only Practicable Alternative" as defined in 23 CFR 650.113. Attach the finding for approval.*	☐	☐	☒
5.	Project conforms to local flood hazard ordinances.	☒	☐	☐
6.	Project is consistent with E.O. 11988 (Floodplain Protection). *If no, the project cannot be approved as proposed.*	☐	☒	☐

7. Summarize risk and adverse floodplain impacts:

M.1 and M.2: The proposed action is located in an area which does not participate in the National Flood Insurance Program and therefore detailed flood mapping from the Federal Emergency Management Agency is unavailable. Longitudinal encroachment into the 100-year floodplain is not anticipated. No regulatory floodways have been designated for any waterways within the project area; encroachment into a regulatory floodway would not occur. A hydraulic study for the proposed action is currently underway.

M.3: The proposed action is not anticipated to increase the base flood elevation by one foot or greater. A hydraulic study is being prepared in coordination with the project design in order to avoid and/or minimize an increase in the base flood elevation.

M.4: The proposed action would not result in significant encroachment.

M.5: There are no local flood hazard ordinances with which to comply.

M.6: The proposed action is consistent with E.O. 11988. The public will have the opportunity to comment on the proposed action when the USACE issues public notice during their Section 404 permit review period.

M.7: A component of the proposed action is to improve drainage along the project corridor and fish passage at Erickson Creek. Cross culverts would be replaced or extended as needed along the highway to accommodate the wider road, improve drainage, and minimize erosion of the road embankments due to ponding of water at the toe. The existing 123-foot long by 10-foot diameter culvert at Erickson Creek would be removed. The channel would be rerouted through the new 230-foot long, 14-foot wide culvert which would be installed approximately 100 feet south of the existing culvert.. The new culvert would be designed to maintain or improve existing hydraulic conditions. Post construction specifications of the culvert would be adequate to allow fish passage and would meet the specific conditions of the Alaska Department of Fish and Game Title 16 Fish Habitat permit.

N. Noise Impacts (23 CFR Part 772)	N/A	YES	NO
1. There are noise-sensitive receivers/land uses adjacent to the proposed project. *If yes, attach the noise analysis, if applicable (see 2). If no, go to section O.*	☐	☐	☒
Category A: There are adjacent lands where serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	☒	☐	☐
Category B: There are adjacent picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, hotels, motels, schools, churches, libraries, or hospitals.	☒	☐	☐
Category C: There are adjacent developed lands, properties, or activities not included in categories A or B above. *This would include commercial properties.*	☒	☐	☐
2. The project is located on new location and would result in substantial changes in vertical or horizontal alignment, or would increase the number of through lanes. *If yes, a noise analysis is required. If not, go to Section O.*	☒	☐	☐
3. There is an existing noise impact.	☒	☐	☐
4. The project would create a noise impact.	☒	☐	☐
5. Noise analysis demonstrates potential noise impacts.	☒	☐	☐
6. There are feasible and reasonable measures that can reduce noise impacts (attach analysis).	☒	☐	☐
7. The noise abatement measures listed in 23 CFR 772.13(c)(1-5) have been considered for those receivers where a noise impact would occur.	☒	☐	☐

8. Summarize noise impact and abatement measures considered, if applicable.

N.1: The proposed action is located on an existing stretch of the Dalton Highway. The adjacent areas are remote but are not considered noise-sensitive receivers or land uses. The project would not result in an increase in traffic or subsequent noise impacts. There may be a slight temporary increase in noise during construction due to the use of heavy equipment; however, due to the existing, heavy commercial traffic along the highway, noise impacts should not be noteworthy.

O. Water Quality Impacts	N/A	YES	NO
1. Project would involve a public or private drinking source. *If yes, explain in no. 7.*	☐	☐	☒
2. Project would result in a discharge of storm water to a Waters of the U.S.	☐	☒	☐
3. Project would discharge storm water into or affect an ADEC designated impaired water body. *If yes, list in no. 4 and describe in no. 7.*	☐	☐	☒

4. List name(s) and location(s).
The proposed action does not involve an ADEC designated impaired water body. Storm water would discharge to Erickson Creek, a Water of the U.S.

5. Estimate the acreage of ground-disturbing activities that will result from the project?
113 acres

6. Is there a municipal separate storm sewer system (MS4) NPDES permit, or will runoff be mixed with discharges from an NPDES permitted industrial facility? *If yes, NPDES permit #:* _____	☐	☐	☒

7. Summarize the impacts of any "yes" marked in Section O.
O.2: In order to minimize water quality impacts, temporary erosion control and stabilization measure [Best Management Practices (BMPs)] would be used during construction activities to prevent erosion of soils and transportation of sediment beyond the immediate construction site.

P. Construction Impacts

		N/A	YES	NO
1.	There will be temporary degradation of water quality.	☐	☒	☐
2.	There will be temporary stream diversion (Erickson Creek).	☐	☒	☐
3.	There will be temporary degradation of air quality.	☐	☒	☐
4.	There will be temporary delays and detours of traffic.	☐	☒	☐
5.	There will be temporary impact on businesses.	☐	☒	☐
6.	There will be other construction impacts, including noise.	☐	☒	☐

7. Summarize construction impacts associated with any "yes".

P.1: There would be temporary impacts to water quality during construction. Work within Erickson Creek is required to relocate the existing culvert. Other cross culverts would be lengthened where necessary to accommodate the new road width and/or alignment. In order to minimize water quality impacts, temporary erosion control and stabilization measures (BMPs) would be used during construction to prevent the erosion of soils and transportation of sediment beyond the immediate construction site.

P.2: One meander of Erickson Creek would be permanently rerouted to accommodate the new road alignment. As such, the contractor may utilize the existing culvert to maintain flow during construction and utilize half-width construction to facilitate traffic detours. However, a temporary diversion of the creek may still be necessary near the inlet of the new culvert.

P.3: A temporary degradation of air quality may occur from the increased airborne particulate levels and emissions from heavy equipment and dust during construction activities. Using abatement methods such as watering the surface areas and appropriate and timely equipment maintenance would minimize these impacts.

P.4: Temporary detours and delays would occur during construction. Sufficient notice would be given to highway users.

P.5: Businesses relying on the transportation of goods either north or south of the project area may be temporarily impacted during construction due to temporary traffic detours and lane and road closures. However no businesses occur directly within the project area.

P.6: There would be a temporary increase in noise during construction due to the use of heavy equipment, but noteworthy impacts are not anticipated due to the existing heavy commercial traffic and lack of adjacent sensitive noise receivers.

Q. Section 4(f)/6(f) - (23 CFR 774)

		N/A	YES	NO
1.	Section 4(f) properties would be affected by the proposed action.	☐	☐	☒
2.	There would be a "use" of land from these 4(f) properties.	☒	☐	☐
3.	The project will require an Individual Section 4(f) Evaluation. *If yes, the project is excluded from State assignment and the CE and Section 4(f) Evaluation must be approved by FHWA.*	☐	☐	☒
4.	The project would affect Section 6(f) properties.	☐	☐	☒
5.	Funds from the Land and Water Conservation Fund Act (LWCFA) were used for improvement to the 4(f) property.	☒	☐	☐
6.	Is the use of the property receiving LWCFA funds a "conversion of use" per Section 6(f) of the LWCFA? *Attach the correspondence received from the ADNR 6(f) Grants Administrator.*	☒	☐	☐
7.	Project is adjacent to a Section 4(f) resource. *If yes, consult with the Statewide NEPA Manager for 6004 (assigned CEs) or FHWA Environmental Program Manager (non-assigned CEs) to determine applicability of "constructive use".*	☐	☐	☒

8. Summarize the type of involvement. Coordinate with the land manager and attach appropriate documentation (i.e. Section 4(f) or Section 6(f) Evaluation).

Q.1 and Q.4: No Section 4(f) or 6(f) properties exist within or adjacent to the project area.

IV. Permits and Authorizations

		N/A	YES	NO
1.	USACE, Section 404/10 (includes APP, NWP & GP)	☐	☒	☐
2.	Coast Guard, Section 9	☐	☐	☒
3.	Department of Fish and Game (ADF&G) Fish Habitat Permit (T16.871 and 16.841)	☐	☒	☐
4.	Flood Hazard	☐	☐	☒
5.	Department of Environmental Conservation (ADEC) Non-domestic Wastewater Plan Approval.	☐	☒	☐
6.	ADEC 401	☐	☒	☐
7.	DNR, ACMP consistency	☐	☐	☒
8.	Other. *If yes, list.*	☐	☒	☐

Compliance with the Alaska Pollutant Discharge Elimination System Construction General Permit would be required, as would compliance with the Migratory Bird Treaty Act "No Clearing" guidelines.

V. Comments and Coordination

		N/A	YES	NO
1.	Public/agency involvement for project *(required if protected resources are involved).*	☐	☒	☐
2.	Public Meetings. Date: N/A	☐	☐	☒
3.	Newspaper ads Name of newspaper: N/A	☐	☐	☒
4.	Agency scoping letters. Date sent: 3 February 2010	☐	☒	☐
5.	Agency scoping meeting. Date of meeting: N/A	☐	☐	☒
6.	Field review	☐	☐	☒

7. Summarize comments and coordination efforts for this project. Discuss pertinent issues raised. *Attach correspondence that demonstrates coordination and that there are no unresolved issues.*

Appendix A contains all public and agency scoping correspondence and documents.

A scoping letter with preliminary research results was distributed in February 2010. Appendix A contains a copy of the complete scoping letter, distribution list, comments received by the agencies, and responses to the comments as appropriate.

Coordination with ADF&G has been ongoing since December 2009 to ensure that the proposed culvert design at Erickson Creek would meet ADF&G fish passage standards and to facilitate the Title 16 Fish Habitat permitting effort.

A public meeting has not been held to date. During the scoping process, additional efforts were made to solicit comments from the primary highway user groups: commercial trucking and recreational/tourism companies. Notable issues raised by these groups and their resolutions are summarized below:

> Issue: Paving the reconstructed highway is financially irresponsible since the area is underlain with ice-rich soils and settlement of the roadway and subsequent cracking of the pavement is inevitable. The suggestion is to use D-1 gravel which is easier and cheaper to maintain than asphalt.
>
> *Resolution: Careful consideration will be given to whether or not to pave this segment, or to delay paving for several years in anticipation of settlement.*

Based on input received to date, no unresolved issues related to the proposed action exist among the State and Federal agencies or the potentially affected user groups. Coordination with resource agencies and stakeholders will continue throughout project development and into permitting.

VI. Environmental Commitments and Mitigation Measures

List the environmental commitments or mitigation measures included in the project.

1. Clearing activities must occur prior to 1 May or after 15 July to avoid impacts to breeding migratory birds.
2. Advance public notice of construction activities and road closures will be published to mitigate construction impacts on local businesses, residents, and road travelers.
3. If either a Bald or Golden Eagle nest is identified within a half mile of the project, DOT&PF is requested to contact the USFWS Permit Office at: permitsR7MB@fws.gov or 907-786-3685, and refer to http://alaska.fws.gov/eaglepermit/permit.htm for additional guidance.

VII. Environmental Documentation Approval

	YES	NO
1. The project meets the criteria of a Department or FHWA programmatic agreement. *If yes, the CE may be approved by the Regional Environmental Manager but needs a QA/QC check (see shaded block).*	☐*	☒
2. The State has determined that the project has no significant impacts on the environment and that the project is categorically excluded from the requirements to prepare an EA or EIS under NEPA. The State has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to Chapter 3 of title 23, United States Code, Section 326 and the MOU dated September 22, 2009 executed between the FHWA and the State. *If yes, the CE may be approved by a Statewide NEPA Manager for 6004. If no, the CE must be approved by FHWA.*	☐	☒

VII. Environmental Documentation Approval

Prepared by: _____ Date: 7/15/10
Environmental Impact Analyst

Reviewed by: _____ Date: 7/19/2010
Engineering Manager

Approved by: _____ Date: 7/19/2010
Regional Environmental Manager

If Assigned CE

Approved by: _____ Date: ____
[Print] DOT&PF Statewide NEPA Manager for 6004

_____
[Signature] DOT&PF Statewide NEPA Manager for 6004

If Non-Assigned CE

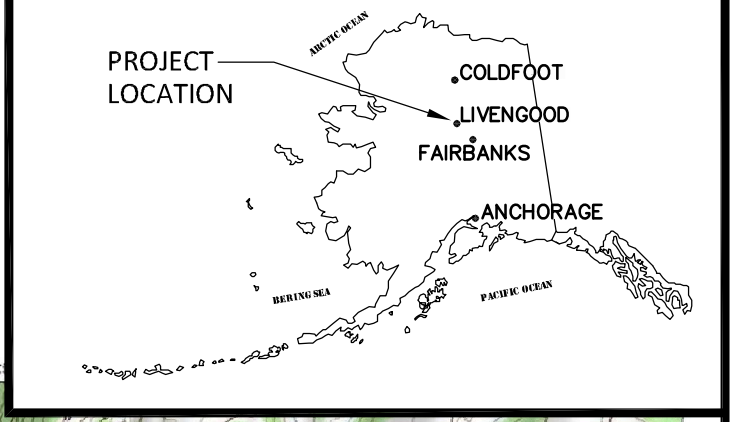
Approved by: _____ Date: 7/26/10
FHWA Area Engineer

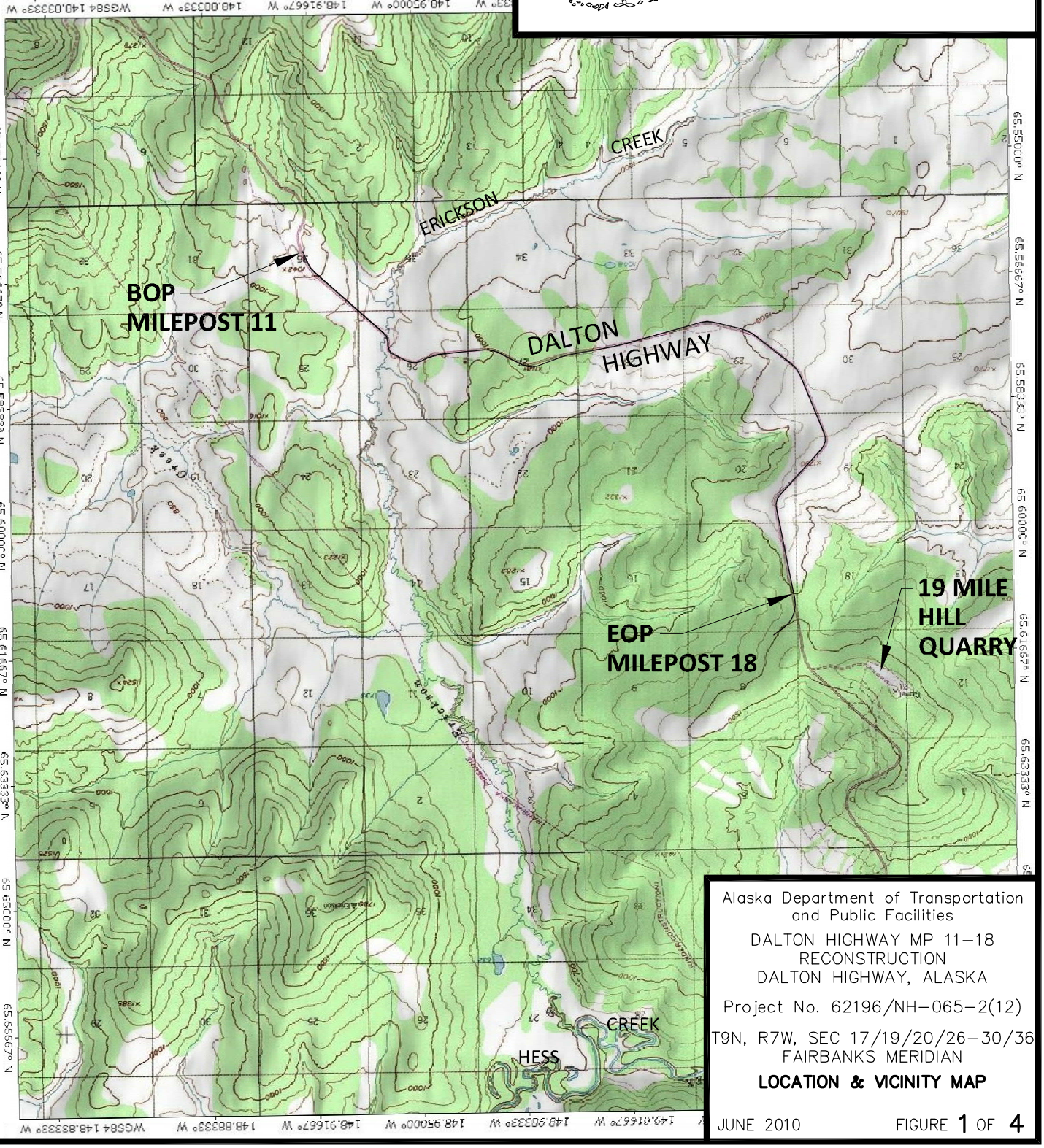
* If the CE meets the conditions of either the Internal Programmatic Agreement (DOT&PF Statewide NEPA Manager for 6004 verifies) or one of the Programmatic Agreements with FHWA (FHWA Area Engineer verifies) then:

Concurrence by: _____ Date: ____
DOT&PF Statewide NEPA Manager or FHWA Area Engineer

NOTE:

NORTH IS DOWN BY PROJECT-SPECIFIC CONVENTION.





Alaska Department of Transportation and Public Facilities

DALTON HIGHWAY MP 11–18
RECONSTRUCTION
DALTON HIGHWAY, ALASKA

Project No. 62196/NH–065–2(12)

T9N, R7W, SEC 17/19/20/26–30/36
FAIRBANKS MERIDIAN

LOCATION & VICINITY MAP

JUNE 2010

FIGURE 1 OF 4

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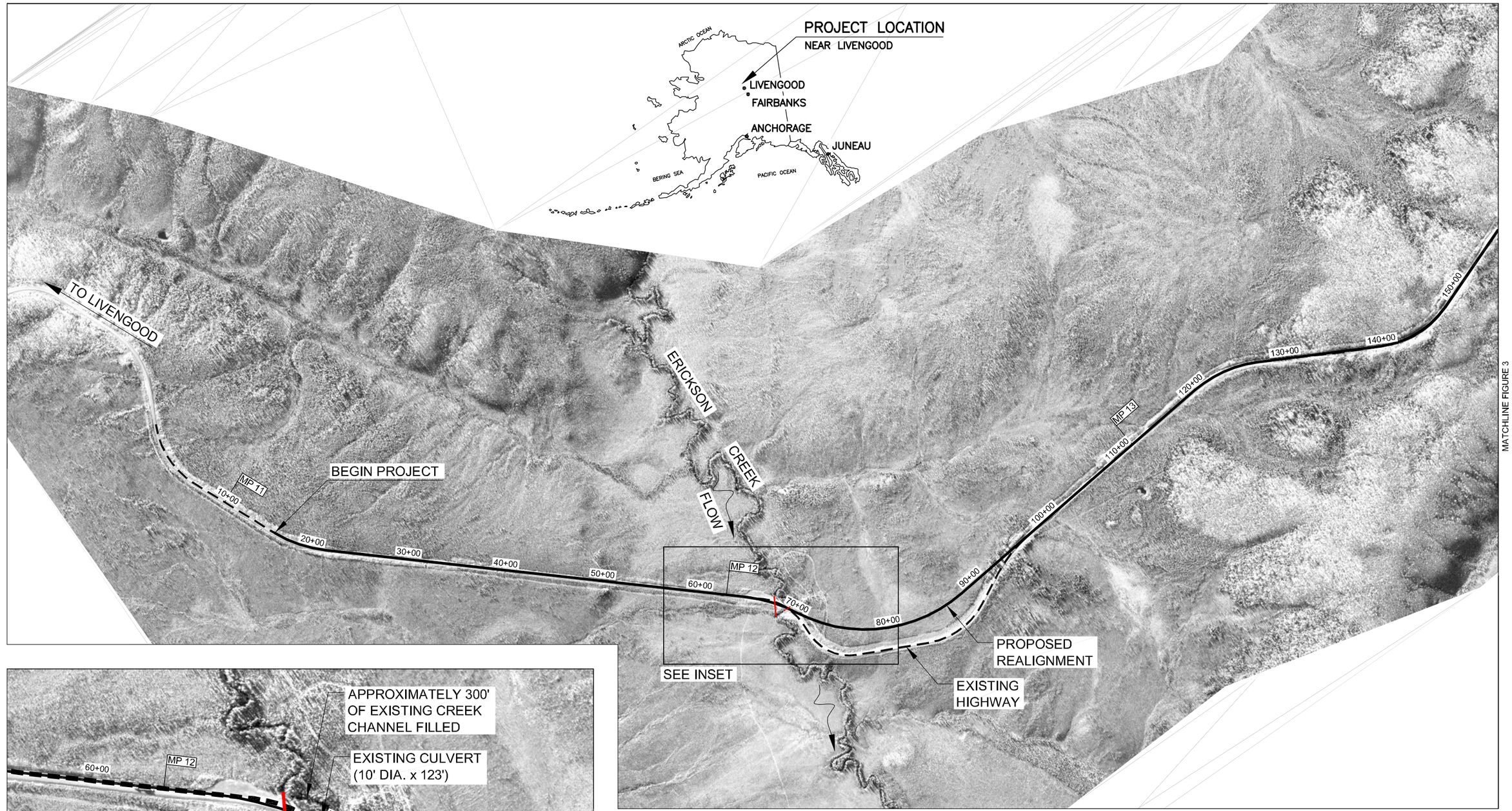

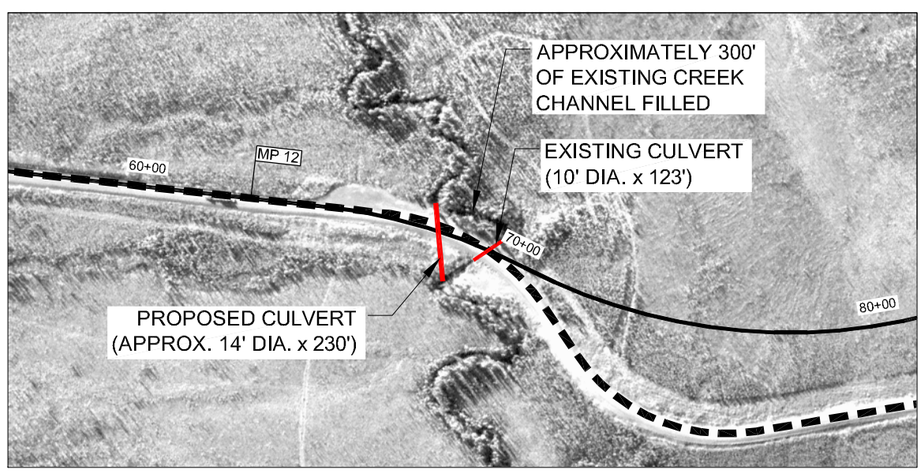

PREPARED BY: R&M CONSULTANTS, INC.

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ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DALTON HIGHWAY MP 11–18 RECONSTRUCTION

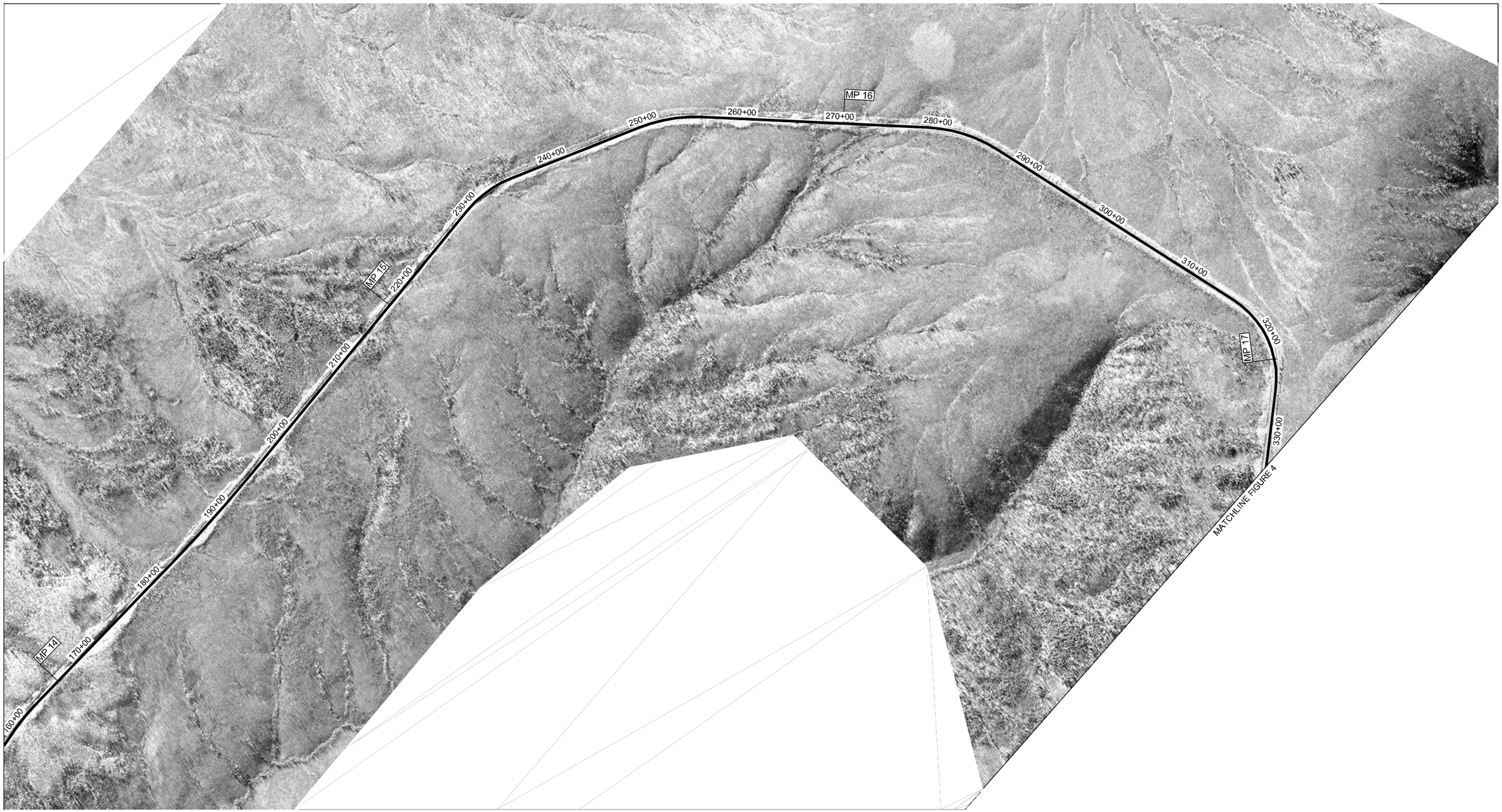
DALTON HIGHWAY, ALASKA

PROJECT No: 62196/NH–065–2 (12)
T9N, R7W, SEC 17/19/20/26–30/36
FAIRBANKS MERIDIAN

PROJECT CORRIDOR

JUNE 2010

FIGURE 2 OF 4



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PREPARED BY: R&M CONSULTANTS, INC.

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DALTON HIGHWAY MP 11–18 RECONSTRUCTION

DALTON HIGHWAY, ALASKA

PROJECT No: 62196/NH–065–2 (12)
T9N, R7W, SEC 17/19/20/26–30/36
FAIRBANKS MERIDIAN

PROJECT CORRIDOR

JUNE 2010

FIGURE 3 OF 4

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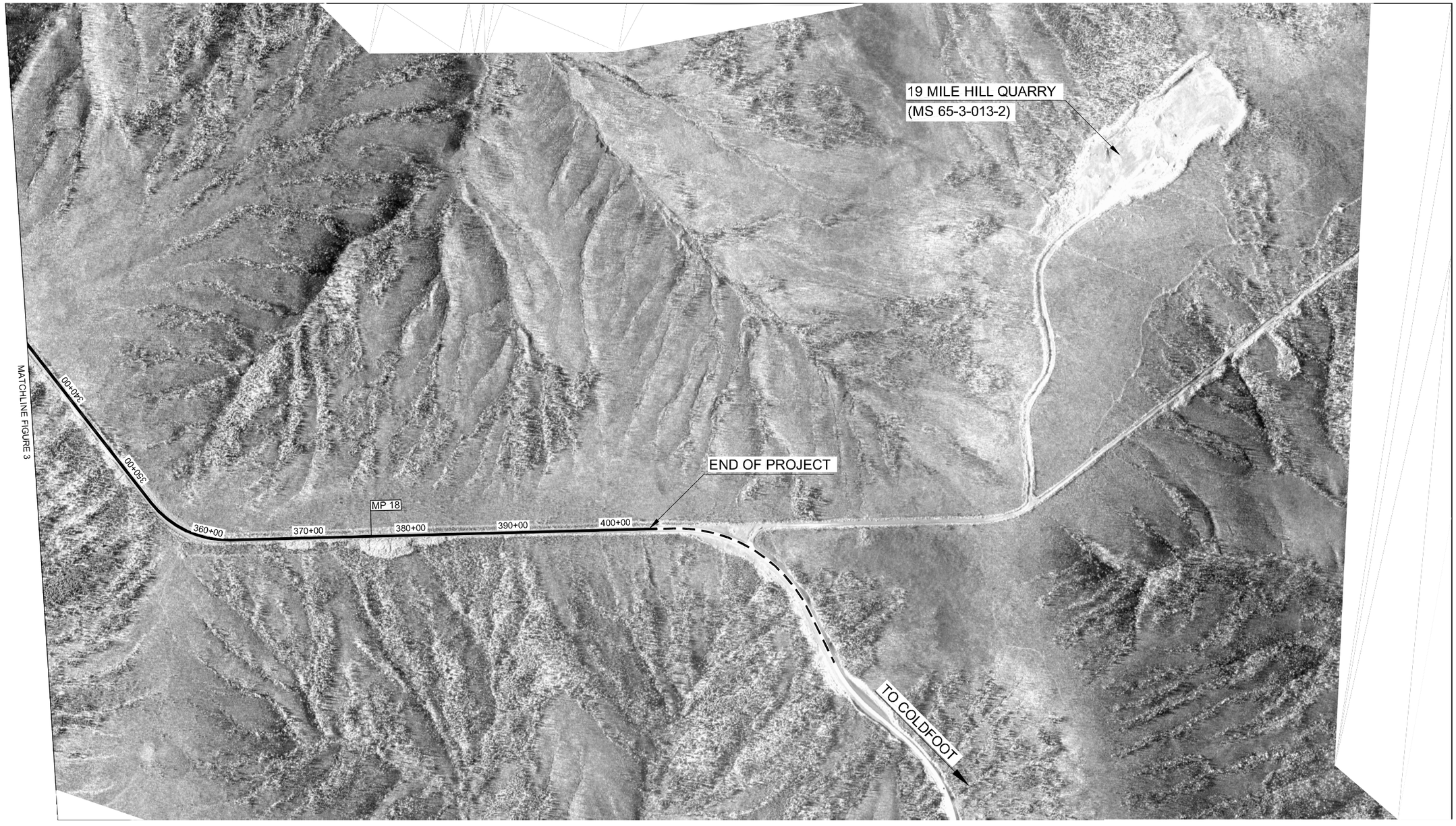

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PREPARED BY: R&M CONSULTANTS, INC.

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DALTON HIGHWAY MP 11–18 RECONSTRUCTION

DALTON HIGHWAY, ALASKA

PROJECT No: 62196/NH–065–2 (12)
T9N, R7W, SEC 17/19/20/26–30/36
FAIRBANKS MERIDIAN

PROJECT CORRIDOR

JUNE 2010

FIGURE 4 OF 4

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APPENDIX A

PUBLIC AND AGENCY COORDINATION

Arctic Hydrologic Consultants
3875 Geist Road, Suite E, PMB# 201; Fairbanks, AK 99709
Phone: 907.378.2582 • Email: ahc@acsalaska.net

Meeting Notes

Subject: Meeting with ADF&G and ADOT to Discuss Fish Passage Requirements on Erickson Creek at the Dalton Highway.

Project: Dalton Highway MP 11 – 18 Reconstruction (AHC Project # 15006)

To: File

From: James W. Aldrich, P.E., P.H.

Date: 04 December 2009

J. Aldrich met with Sara Riddle, Alaska Department of Transportation (ADOT) and Mac McLean, Alaska Department of Fish and Game (ADF&G) to discuss the fish passage requirements associated with the replacement of the Dalton Highway culvert at Erickson Creek. The meeting took place from approximately 1:30 to 2:30 on 4 December 2009. The following is a brief summary of the meeting.

- Mac stated that there were grayling in Erickson Creek and that they had been observed above the culvert in the Dalton Highway.
- Mac said that he would anticipate that we would do a Tier 1 or Teir II fish passage design based on the Memorandum of Agreement (MOA) between ADF&G and ADOT and confirmed that the latest version of the memorandum is August 30, 2001.
- Mac said that the fork length of the design fish should be 220mm.
- Mac also said that the fish passage design discharge is the 2-year, 2-day discharge. We discussed the different methods available to compute the fish passage design discharge and he seemed to like the idea of calculating it based on the Hess Creek record and a unit discharge (cfs/square mile) approach. He told us that in the future the design discharge may be changed to the Annual 5% high flow, but that for the moment it remained the 2-year, 2-day flow (i.e. the average discharge for the highest consecutive days of the year, with an average return period of 2-years), and that in his experience there was not much difference between the two.
- Mac said that I could download the latest version of the ADF&G "fishpass" computer program. He said the latest version is a Beta version, Version 3; and that he often runs both version 2 and version 3. He said the documentation is also on line, and that I could find it by simply Goggling "fishpass". He said the Fish Crossings program works better for lower gradient streams, and defined the break between lower gradient and steeper gradient streams as being 4%.
- The Tier I fish passage design procedure uses Ordinary High Water (OHW) and Mac said that for the purposes of the MOA, OHW is defined based on the demarcation line between inundation tolerant vegetatopm (such as wetland type vegetation: willows and grasses) and inundation intolerant vegetation (such as upland species), and/or the top of the cut bank if there is one (as opposed to simply using the area below the 2-year flood peak discharge). The width of the OHW that should be used is the average width within the reach of the creek in which the culvert is located. In other words, it should be represenative of the average natural OHW for the reach of the creek in which the culvert is located.

- We discussed the potential for aufeis briefly. Mac thought that Dennis Knapp with the pipeline office would know if aufeis is an issue. Sara will check with maintenance to see if they think aufeis is a concern. We anticipate that aufeis is not a serious issue because J. Aldrich did not notice signs of a serious issue during a November site inspection, and the ADOT maintenance person accompanying Jim, Sara, Tim Grier and Lance Debernardi on the visit did not mention one.
- Mac mentioned that he is concerned about the additional length required for a skewed culvert as oppose to a culvert that is placed perpendicular to the road. He said that he will be less concerned with the skew or length of the culvert if the corrugations are at least 2"x6".
- With regard to whether or not the next branch north on Erickson Creek might have grayling (the one that would be crossed if the road is moved west), Mac said that he usually assumes that such a tributary could have grayling if the slope is 8% or less, and assumes that it does have grayling if the slope is less than 4%, and there are grayling in other parts of the system.
- With regard to filling an oversized culvert with baffles and large rock to provide for fish passage (Tier I), Mac is also concerned that low flows might initially go subsurface but is willing to allow the natural course of events to fill the voids with fines, which would eventually keep the water on the surface. Mac provided several methods by which the speed at which fines filling the voids could be increased. The first is to mix 3 inch minus material with the Class I riprap (this presumes that Class I riprap will be stable) to fill the voids. Water may still go subsurface during low flow periods immediately after construction but fine material will fill the voids faster than if clean Class I riprap had been used. The second method he mentioned is to use a slurry pump to fill the voids in the riprap. His experience is that a better job of filling the voids can be done using a slury pump. However, he said that sometimes the EPA discourages the use of this method and that if it's use became an issue to enlist his support. He feels that there is a trade off between the potential downstream impacts associated with fine material washed downstream during the slury process and the ability to keep low flows on the surface of the streambed sooner. Finally, we discussed the possiblility of using dirty pea gravel to fill the voids, which would also be acceptable.
- Mac also noted that in his experience, it is best if the Class I riprap sticks up about 1/3 of its representative diameter above the top of the baffle.
- Finally, Mac asked about the rust line on the culvert. He said his experience has been that if the rust line is up more than 15% of the culvert height, the culvert is probably undersized with regard to fish passage.

I have prepared these notes for my own use during the design process, but thought they might be of interest to those listed below.

cc: Tim Grier, R&M
Lance Debernardi, R&M
Sara Riddle, ADOT
Mac McLean, ADF&G

SEAN PARNELL, GOVERNOR

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NORTHERN REGION PRECONSTRUCTION

2301 PEGER ROAD
FAIRBANKS, ALASKA 99709-5399
TELEPHONE: (907) 451-2238
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FAX: (907) 451-5126

February 3, 2010

Re: Dalton Highway Milepost 11-18
Reconstruction
Project No. 62196/NH-065-2(12)
Scoping Comments Request

See Distribution Mailing List

Dear Recipient:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of Federal Highway Administration (FHWA), is soliciting comments and information on the proposed project to construct roadway improvements along the Dalton Highway between Mileposts (MP) 11 and 18 (Figure 1). The project corridor is located in Township 9N, Range 7W, Sections 17, 19, 20, 26 through 30, and 36, Fairbanks Meridian, USGS quadrangles Livengood C-4 and C-5. A Categorical Exclusion (CE) checklist is being prepared to analyze any potential impacts, and your agency's comments are requested to aid in that analysis.

Purpose and Need

The Dalton Highway is designated as a rural principal arterial and provides the only vehicle access across Interior Alaska from Fairbanks to Deadhorse, serving as a critical supply route between commerce and industrial centers. This corridor - along with the other portions of the Dalton Highway – was set according to 1970 State standards for secondary roadways as a service access road, taking advantage of terrain to reduce cost. This has resulted in several sharp curves and steep grades that make travel difficult and slow.

The purpose of this project is to improve roadway safety and performance between MP 11-18 of the Dalton Highway.

Existing Conditions

MP 11-18 of the Dalton Highway is characterized by the following:

- The roadway is very narrow, especially through the 12-Mile curve and the Erickson Creek area. Commercial truck drivers currently radio ahead and pull over as needed to allow for one way traffic through this dangerous section of road. Realignment at this location is desirable.

- The existing culvert at Erickson Creek, approximately 123 foot long by 120 inches wide in diameter, is in good condition and appears to be hydraulically adequate. The extent of roadway realignment or widening will determine if relocation or alteration of this culvert is necessary. Fish passage would be evaluated if relocation is required (Figure 2).
- There are several areas where continuous settlement is occurring, including a section at MP 14 that required a recent 2' grade raise.
- There is a lack of cross culverts and ditches in several locations.
- The shot rock embankment on some steeper grades seems to be promoting the flow of water to follow the road bed and saturate embankment in low areas.
- Heavy truck traffic occurs from around 12:00 pm to 3:00 pm and again from 7:00 pm to 10:00 pm. Construction work windows will need to consider maintaining traffic flow.

Proposed Action

This project proposes to widen and reconstruct seven miles of the Dalton Highway. Proposed work includes:

- Making geotechnical improvements to the roadway foundation.
- Establishing a consistent lane and shoulder width.
- Improving horizontal and vertical geometry between MP 12 and MP 13 to meet AASHTO 50 MPH design standards.
- Improving sight distance and coordination of vertical and horizontal curvatures.
- Paving the roadway.

Although realignment is desirable through the 12-Mile curve and the Erickson Creek area, geologic conditions (massive ice) may limit the extent of horizontal realignment. Potential alignment alternatives still under consideration are shown in Figure 2. The existing 123' long by 120" diameter culvert at Erickson Creek appears to be in good condition. Relocation of this culvert may be required for realignment in the area.

Construction would likely take place between May 2011 and Fall 2013. Heavy truck traffic occurs from around 12:00 pm to 3:00 pm and again from 7:00 pm to 10:00 pm. Project design will consider construction techniques and phasing to limit construction road closures.

Environmental Documentation

The DOT&PF does not anticipate significant environmental impacts associated with the proposed action. To ensure that all factors are considered in the development of the environmental document, your comments are requested no later than 30 days after the

date of this letter. Attachment A provides preliminary research results to assist you in identifying aspects of the project that may be of interest to your agency or organization.

If you have any questions on the environmental effects or engineering aspects of the proposed project, please contact Sarah Riddle, P.E., Project Manager, at 907-451-5361 or via email at sarah.riddle@alaska.gov.

Sincerely,

Bruce Campbell
Northern Region Environmental Coordinator

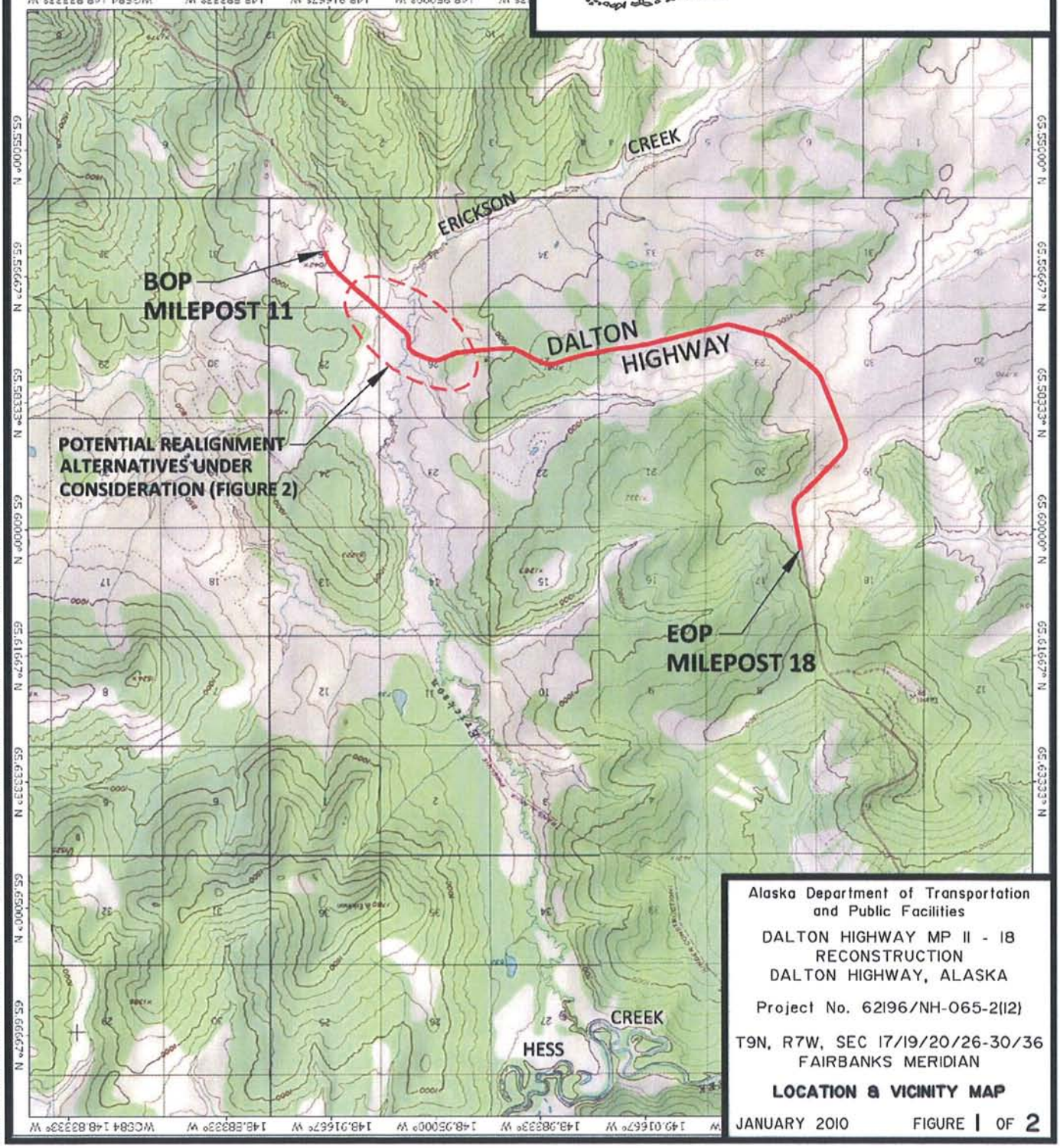
TB/mw

cc:

Attachments: Figure 1: Location and Vicinity Map
Figure 2: Potential Re-alignment Options
Attachment A: Preliminary Research Results
Scoping Mailing List

NOTE:

NORTH IS DOWN BY PROJECT-SPECIFIC CONVENTION.



Alaska Department of Transportation and Public Facilities

DALTON HIGHWAY MP II - 18
RECONSTRUCTION
DALTON HIGHWAY, ALASKA

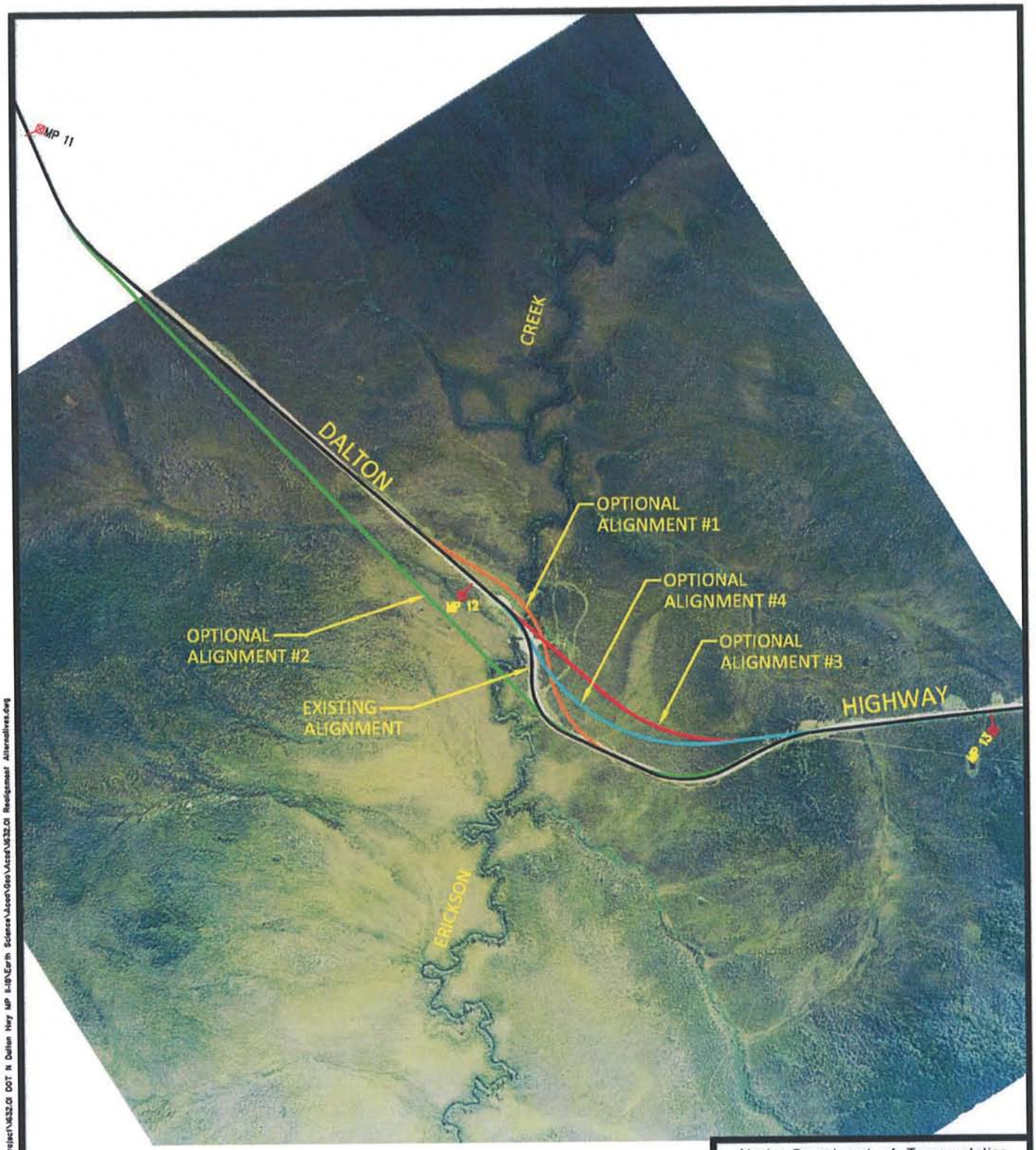
Project No. 62196/NH-065-2(12)

T9N, R7W, SEC 17/19/20/26-30/36
FAIRBANKS MERIDIAN

LOCATION & VICINITY MAP

JANUARY 2010 FIGURE 1 OF 2

Plotted: 12/21/2009 9:45 AM by Patrick Hewlett Z:\project\62196\NH-065-2(12) DOT N Dalton Hwy MP II-18\Earth Science\Acad\Geo\Acad\62196 Vicinity Map.dwg



NOTE:

NORTH IS DOWN BY PROJECT-SPECIFIC CONVENTION.

Alaska Department of Transportation and Public Facilities

DALTON HIGHWAY MP 11 - 18
RECONSTRUCTION
DALTON HIGHWAY, ALASKA

Project No. 62196/NH-065-2(12)

T9N, R7W, SEC 17/19/20/26-30/36
FAIRBANKS MERIDIAN

POTENTIAL RE-ALIGNMENT OPTIONS

JANUARY 2010 FIGURE 2 OF 2

Plotted: 12/30/2009 9:42 AM by Patrick Hewlett Z:\project\62321 DOT N Dalton Hwy MP 8-18\Earth Science\Mosa\Geo\Acad\62321 Realignment Alternatives.dwg

ATTACHMENT A

Preliminary Research Results
Dalton Highway Milepost (MP) 11-18 Reconstruction

Contaminated Sites, Spills and Underground Storage Tanks: The project area is not known to be contaminated. A preliminary search of the ADEC contaminated sites database did not reveal any open sites with environmental contamination within or adjacent to the project area. The closest contaminated site is located at MP 7 of the Dalton Highway. This site was the location of a tanker truck rollover; however clean up is complete with institutional controls as of 9/11/2007.

Water Body Involvement: The highway crosses Erickson Creek at approximately MP 12. The existing culvert will be reused or replaced to maintain the structural integrity of the roadway and embankment. Erickson Creek is not listed by the Alaska Department of Environmental Conservation as an impaired water body. Impacts to water quality would be temporary and mitigated during construction.

Floodplain Impacts [Executive Order 11988]: The proposed project is not located in an area which participates in the National Flood Insurance Program and therefore detailed flood mapping from the Federal Emergency Management Agency is unavailable. Construction within Erickson Creek will be timed outside of periods of high flow to minimize potential flood impacts.

Cross culverts will be added as necessary to improve drainage and minimize erosion and roadway embankment settlement caused by ponding of water alongside the highway.

Vegetation and Wetlands [Executive Order 11990]: A wetlands field delineation for the project area was conducted in 2005. Project-specific wetlands mapping along with a values assessment is currently underway. According to the National Wetlands Inventory, the proposed project includes upland areas along with palustrine, scrub-shrub and forested wetlands within the low-lying areas near Erickson Creek. A Department of the Army Section 404 Individual or Nationwide Permit will be obtained for all wetland impacts associated with the proposed project. Avoidance of wetlands and minimization of wetland impacts will be implemented to the maximum extent practical during project design.

Fish and Wildlife: According to the Alaska Department of Fish and Game (ADF&G) Fish Distribution Database Atlas, Erickson Creek is not an anadromous fish stream. Arctic Grayling, Longnose Sucker, and Slimy Sculpin have been observed within the creek. The existing culvert is structurally sound but does not currently meet fish passage standards. Coordination with ADF&G is ongoing to ensure that the post-construction culvert specifications meet Tier I or Tier II fish passage standards. A Title 16 Fish Habitat permit will be obtained prior to construction.

Threatened and Endangered Species: Based upon a preliminary review of USFWS and NMFS websites, no federal Threatened or Endangered Species appear to exist in the project area.

Eagle Nests: No eagle nests are currently known to exist in the project area. Although bald eagles are not considered endangered or threatened under the Endangered Species Act in the State of Alaska, they still benefit from the protection of the Bald Eagle Protection Act and the Migratory Bird Treaty Act.

Historical and Cultural Resources: A 2008 cultural resources survey of the entire project corridor and of the "19 Mile Hill Quarry" (a material site located off the north end of the project) revealed no previously undocumented historic properties. The survey is described in a report by Northern Land Use Research Inc. entitled "Cultural Resources Survey of Dalton Highway MP 11-18 Rehabilitation Project, Interior Alaska". The archaeologist recommended a finding of "No Historic Properties Affected" for this project. Concurrence from the State Historic Preservation Office and from tribal entities has been requested.

Land Use: A majority of the highway widening work is expected to occur within the existing 200-foot wide right of way (ROW). There are two locations, at MP 17 and at MP 17.5, where curve flattening may require ROW acquisition. Potential roadway realignments under consideration at Erickson Creek (Figure 2) would also require ROW acquisition. Lands adjacent to the project area are state owned.

A review of the Bureau of Land Management's (BLM) land status map found that the project area does not contain any land managed by the BLM. The nearest BLM land is the "BLM Utility Corridor" which begins at MP 56, Yukon River Crossing.

Coastal Zone Management: The proposed project is not located within the Alaska Coastal Management Program boundary or within a local coastal management district.

State Refuges, Critical Habitat Areas, and Sanctuaries: A review of the Alaska Department of Fish and Game's (ADF&G) online lists of State of Alaska Refuges, Critical Habitat Areas, and Sanctuaries found that there are no state lands designated as such in the project vicinity.

National Wildlife Refuges: There are no National Wildlife Refuges located within or adjacent to the project area. The Kanuti and Yukon Flats National Wildlife Refuges are located over 20 miles north of the project.

National Parks, Preserves, Monuments, and Wild and Scenic Rivers: Based upon a review of the National Park Service web site, no National Parks, Preserves, Monuments or Wild and Scenic Rivers exist in the project area.

Construction Impacts: A temporary degradation of air quality may occur from the increased airborne particulate levels and emissions from heavy equipment and dust

during construction activities. Using abatement methods such as watering surface areas and appropriate and timely equipment maintenance will minimize these impacts. There will be a temporary increase in noise during construction due to the use of heavy equipment. Temporary erosion control and stabilization measures [Best Management Practices (BMPs)] will be used during construction to prevent and mitigate erosion of soils and sedimentation of nearby lands and waterbodies.

Traffic Control: Methods for limiting road closure during construction will be considered during project design.

DALTON HIGHWAY MILEPOST 11-18 RECONSTRUCTION
Project 62196/NH-065-2(12)
SCOPING MAILING LIST

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* Did not receive copy of scoping letter; Section 106 Findings letters sent separately

From: Woster, Timothy J (DOT)
Sent: Wednesday, March 10, 2010 10:26 AM
To: Riddle, Sarah E (DOT)
Cc: Benjamin, Thomas A (DOT)
Subject: FW: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Sarah,

For your information. I confirmed with Sean that this was a comment intended to be included with other scoping comments, and is not a request for specific information at this time. He would like to see the updated wetlands delineation when it is available.

Tim

From: Palmer, Sean P (DEC)
Sent: Wednesday, March 10, 2010 10:08 AM
To: Woster, Timothy J (DOT)
Subject: RE: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Hi Tim,

Yes, if it falls under an IP then I will issue a 401 Certificate of Reasonable Assurance (with stipulations) for the Corps 404 Permit. At this point, I don't have any major comments other than I'm wondering if DOT has an updated wetlands delineation map for the project area. The scoping letter stated that it was in the works and the most recent data was reported in 2005. My focus is protecting water quality in that area including wetlands and reviewing your project so that Alaska Water Quality Standards are upheld during construction.

Thanks,
Sean Palmer
Alaska Department of Environmental Conservation
Division of Water
555 Cordova Street - Anchorage, AK 99501-2617
(907) 269-7564, fax (907) 334-2415

"Eventually, all things merge into one, and a river runs through it. The river was cut by the world's great flood and runs over rocks from the basement of time. On some of those rocks are timeless raindrops. Under the rocks are the words, and some of the words are theirs. I am haunted by waters." -Norman Maclean

---

From: Woster, Timothy J (DOT)
Sent: Wednesday, March 10, 2010 9:56 AM
To: Palmer, Sean P (DEC)
Cc: Riddle, Sarah E (DOT); Benjamin, Thomas A (DOT)
Subject: RE: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Sean,

To knowledge, it has not yet been decided whether the permit will be Nationwide or Individual. I believe that decision will be made through coordination with the Corps, after scoping comments have been received and evaluated. Sarah should be able to confirm the status of that decision, but she is out of the office until tomorrow.

Does this decision affect other comments you may have on scoping? If you would like to discuss this, please give me a call at 451-2271.
Tim

From: Palmer, Sean P (DEC)
Sent: Wednesday, March 10, 2010 9:15 AM
To: Woster, Timothy J (DOT)
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Good Morning Tim,
Can you let me know if the Corps has decided on a Nationwide or Individual Permit (Section 404) for this project?

Thanks,
Sean Palmer
Alaska Department of Environmental Conservation
Division of Water
555 Cordova Street - Anchorage, AK 99501-2617
(907) 269-7564, fax (907) 334-2415

"Eventually, all things merge into one, and a river runs through it. The river was cut by the world's great flood and runs over rocks from the basement of time. On some of those rocks are timeless raindrops. Under the rocks are the words, and some of the words are theirs. I am haunted by waters." -Norman Maclean

---

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
To: aritenour@explorefairbanks.com; Richmond, Anna (DOA sponsored); Bailey, Meadow P (DOT); Bainbridge, Steven T (DEC); Bennett, John F (DOT); Birkholz, Ethan N (DOT); Bittner, Judith E (DNR); Bloom, David T (DOT); Bottoms, Jay J (DOT); Campbell, Bruce W (DOT); Christy.A.Everett@usace.army.mil; Holloway, Audie E (DPS); Dietrick, Larry V (DEC); Drzewiecki, Gregory W (DEC); Edwards, Alice L S (DEC); dean.heather@epamail.epa.gov; jturner@gci.com; curtis.jennifer@epa.gov; Kent, Lynn J T (DEC); kpendergast@rmconsult.com; Krol, Longin (DOT); adventure@northernalaska.com; McLean, Robert F (DFG); Milne, Clark R (DOT); Mylius, Richard H (DNR); Palmer, Sean P (DEC); nagelpc@alyeska-pipeline.com; Rafson, Gerald J (DOT); aoc@alaskaoutdoorcouncil.org; shelly_jacobson@blm.gov; Stuller, Dwight D (DOT); sue_masica@nps.gov; Ted_Swem@fws.gov; Thies, Howard (DOT); Woster, Timothy J (DOT); Benjamin, Thomas A (DOT)
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is preparing the environmental document for the **Dalton Highway MP 11-18 Reconstruction Project** NH-065-2(12)/62196. The attached scoping letter document (also available at the link below) provides the project description, potential environmental issues, and contact information.
To ensure that all factors are considered in the development of the environmental document, **please provide your written comments by March 10, 2010.**

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Palmer, Sean P (DEC)
Sent: Wednesday, March 10, 2010 9:24 AM
To: Riddle, Sarah E (DOT)
Subject: RE: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Thanks, can you tell me who your contact is over at the Corps?

Thanks,
Sean Palmer
Alaska Department of Environmental Conservation Division of Water
555 Cordova Street - Anchorage, AK 99501-2617
(907) 269-7564, fax (907) 334-2415

"Eventually, all things merge into one, and a river runs through it. The river was cut by the world's great flood and runs over rocks from the basement of time. On some of those rocks are timeless raindrops. Under the rocks are the words, and some of the words are theirs. I am haunted by waters." -Norman Maclean

-----Original Message-----
From: Riddle, Sarah E (DOT)
Sent: Wednesday, March 10, 2010 9:23 AM
To: Palmer, Sean P (DEC)
Subject: RE: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Sean-

We are just taking scoping comments right now. It is too early in the process yet for us to know where we are with permit decisions. The environmental document will select an alignment alternative, and until we know where we're taking the road, we won't know our impacts enough to know which permit we fall under. I'm a new manager and only had a few dealings with the Corps, but it is my understanding that they try to get us under a nationwide whenever possible and that we've been receiving fewer individual permits.

I can keep you in the loop on further coordination with USACE if you like, just let me know.

-----Original Message-----
From: Palmer, Sean P (DEC)
Sent: Wed 3/10/2010 9:11 AM
To: Riddle, Sarah E (DOT)
Subject: RE: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Good Morning Sarah,

Can you let me know if the Corps has decided on a Nationwide or Individual Permit (Section 404) for this project?

Thanks,
Sean Palmer
Alaska Department of Environmental Conservation Division of Water
555 Cordova Street - Anchorage, AK 99501-2617
(907) 269-7564, fax (907) 334-2415

"Eventually, all things merge into one, and a river runs through it. The river was cut by the world's great flood and runs over rocks from the basement of time. On some of those rocks are timeless raindrops. Under the rocks are the words, and some of the words are theirs. I am haunted by waters." -Norman Maclean

---

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
To: aritenour@explorefairbanks.com; Richmond, Anna (DOA sponsored); Bailey, Meadow P (DOT); Bainbridge, Steven T (DEC); Bennett, John F (DOT); Birkholz, Ethan N (DOT); Bittner, Judith E (DNR); Bloom, David T (DOT); Bottoms, Jay J (DOT); Campbell, Bruce W (DOT); Christy.A.Everett@usace.army.mil; Holloway, Audie E (DPS); Dietrick, Larry V (DEC); Drzewiecki, Gregory W (DEC); Edwards, Alice L S (DEC); dean.heather@epamail.epa.gov; jturner@gci.com; curtis.jennifer@epa.gov; Kent, Lynn J T (DEC); kpendergast@rmconsult.com; Krol, Longin (DOT); adventure@northernalaska.com; McLean, Robert F (DFG); Milne, Clark R (DOT); Mylius, Richard H (DNR); Palmer, Sean P (DEC); nagelpc@alyeska-pipeline.com; Rafson, Gerald J (DOT); aoc@alaskaoutdoorcouncil.org; shelly_jacobson@blm.gov; Stuller, Dwight D (DOT); sue_masica@nps.gov; Ted_Swem@fws.gov; Thies, Howard (DOT); Woster, Timothy J (DOT); Benjamin, Thomas A (DOT)
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is preparing the environmental document for the Dalton Highway MP 11-18 Reconstruction Project NH-065-2(12)/62196. The attached scoping letter document (also available at the link below) provides the project description, potential environmental issues, and contact information.

To ensure that all factors are considered in the development of the environmental document, please provide your written comments by March 10, 2010.

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Riddle, Sarah E (DOT)
Sent: Friday, March 12, 2010 1:13 PM
To: Heil, Cynthia L (DEC)
Subject: RE: Air response to Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Cindy-

Thank you for your comments. Our standard contract provisions (107-1.01) require the Contractor to comply with all federal, state, and local laws. The contractor has the affirmative duty to keep informed and comply with all laws.

Where required for construction, the Department obtains permits and licenses. The Contractor is responsible for all other permits. The open burn permit you mention is something the contractor would obtain if they wished to burn because we wouldn't typically require them to burn their waste/debris as a means of disposal. We prescribe to remove all trash, debris and other waste from the project site as soon as possible and in accordance with the ADEC solid waste program (107-1.11-6).

Dust control measures and stabilized construction entrances/exists (to prevent off-tracking from the project) are also a standard measure in our erosion and sediment control plans, which are incorporated into the Contractor's Storm Water Pollution Prevention Plan (SWPPP).

Thank you again for your response.

From: Heil, Cynthia L (DEC)
Sent: Tuesday, March 09, 2010 3:30 PM
To: Riddle, Sarah E (DOT)
Subject: Air response to Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Dear Ms. Riddle:

This email is in regards to your proposed transportation project entitled Dalton Highway Milepost 11-18, where the Alaska Department of Transportation and Public Facilities (ADOT&PF) is proposing roadway improvement. This project is not currently in a nonattainment area or maintenance area for air quality control under the Clean Air Act. Therefore, projects receiving federal funds or approvals do not require a conformity analysis under Transportation Conformity regulations.

However, particular attention should be given during construction activities to take reasonable precaution per 18 AAC 50.045(d) to prevent fugitive dust.

In addition, if ADOT&PF or their contractor for this project is planning any open burning of slash or debris you must use "reasonable procedures to minimize adverse environmental effects and limit the amount of smoke generated" as well as get any applicable permits. A complete description of the open burn guidance policy can be found at http://www.dec.state.ak.us/eh/sw/Guidance/Burning%20Garbage%20Guidance.pdf. A general requirement of the Air Quality Control regulations is that wastes should be burned in a manner that does not cause a public health, safety or welfare threat, an environmental problem, or a nuisance.

Thank you for contacting us about your project. If you have further questions or concerns about air quality issues, you may contact me at (907) 269-7579 or by e-mail at cindy.heil@alaska.gov.

Cindy Heil
Mobile Source Section Manager, Acting Air Non-Point & Mobile Sources Program Manager
907-269-7579

From: Edwards, Alice L S (DEC)
Sent: Monday, February 08, 2010 10:02 AM
To: Heil, Cynthia L (DEC)
Subject: FW: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

FYI

Alice
phone: (907) 465-5109
email: alice.edwards@alaska.gov

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
To: aritenour@explorefairbanks.com; Richmond, Anna (DOA sponsored); Bailey, Meadow P (DOT); Bainbridge, Steven T (DEC); Bennett, John F (DOT); Birkholz, Ethan N (DOT); Bittner, Judith E (DNR); Bloom, David T (DOT); Bottoms, Jay J (DOT); Campbell, Bruce W (DOT); Christy.A.Everett@usace.army.mil; Holloway, Audie E (DPS); Dietrick, Larry V (DEC); Drzewiecki, Gregory W (DEC); Edwards, Alice L S (DEC); dean.heather@epamail.epa.gov; jturner@gci.com; curtis.jennifer@epa.gov; Kent, Lynn J T (DEC); kpendergast@rmconsult.com; Krol, Longin (DOT); adventure@northernalaska.com; McLean, Robert F (DFG); Milne, Clark R (DOT); Mylius, Richard H (DNR); Palmer, Sean P (DEC); nagelpc@alyeska-pipeline.com; Rafson, Gerald J (DOT); aoc@alaskaoutdoorcouncil.org; shelly_jacobson@blm.gov; Stuller, Dwight D (DOT); sue_masica@nps.gov; Ted_Swem@fws.gov; Thies, Howard (DOT); Woster, Timothy J (DOT); Benjamin, Thomas A (DOT)
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

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To ensure that all factors are considered in the development of the environmental document, **please provide your written comments by March 10, 2010.**

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Riddle, Sarah E (DOT) [mailto:sarah.riddle@alaska.gov]
Sent: Friday, March 12, 2010 11:09 AM
To: Winters, Jack F (DFG)
Cc: McLean, Robert F (DFG); ahc@acsalaska.net; Lance Debernardi; Tim Grier; Kevin Pendergast
Subject: ADF&G scoping comments: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

Thanks Jack. Our design sub-consultant, Jim Aldrich and I met with Mac on December 4, 2009 to have preliminary discussions about Erickson. Mac gave some feedback for design criteria so we should be headed in the right direction. At this time we haven't selected an alignment alternative near MP 12 so we don't know precisely how we may be affecting the stream alignment. Our sub-consultant and I will continue to coordinate as necessary to get an appropriate fish passage design and subsequent permit.

Thank you for your comments.

From: Winters, Jack F (DFG)
Sent: Monday, March 08, 2010 4:16 PM
To: Riddle, Sarah E (DOT)
Cc: McLean, Robert F (DFG)
Subject: RE: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

The Alaska Department of Fish and Game (ADF&G) has reviewed the scoping request documents for the Dalton Highway MP 11-18 Reconstruction Project. Erickson Creek is crossed by the highway in this proposed project area. Erickson Creek contains Arctic grayling, longnose sucker, and slimy sculpin. The existing culvert or a new culvert will need to be installed to meet the current fish passage standards. We will work with the ADOT&PF to ensure fish passage standards are met for this stream crossing. We have no further comments on the scoping request documents.

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
To: aritenour@explorefairbanks.com; Richmond, Anna (DOA sponsored); Bailey, Meadow P (DOT); Bainbridge, Steven T (DEC); Bennett, John F (DOT); Birkholz, Ethan N (DOT); Bittner, Judith E (DNR); Bloom, David T (DOT); Bottoms, Jay J (DOT); Campbell, Bruce W (DOT); Christy.A.Everett@usace.army.mil; Holloway, Audie E (DPS); Dietrick, Larry V (DEC); Drzewiecki, Gregory W (DEC); Edwards, Alice L S (DEC); dean.heather@epamail.epa.gov; jturner@gci.com; curtis.jennifer@epa.gov; Kent, Lynn J T (DEC); kpendergast@rmconsult.com; Krol, Longin (DOT); adventure@northernalaska.com; McLean, Robert F (DFG); Milne, Clark R (DOT); Mylius, Richard H (DNR); Palmer, Sean P (DEC); nagelpc@alyeska-pipeline.com; Rafson, Gerald J (DOT); aoc@alaskaoutdoorcouncil.org; shelly_jacobson@blm.gov; Stuller, Dwight D (DOT); sue_masica@nps.gov; Ted_Swem@fws.gov; Thies, Howard (DOT); Woster, Timothy J (DOT); Benjamin, Thomas A (DOT)
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

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Sarah Riddle, P.E.

Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

<< File: 62196 Scoping.pdf >>

http://www.dot.alaska.gov/nreg/projects/62196_Dalton_11-18/62196_Dalton_11-18_SCOPING_LETTER.pdf

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Field Office
101 12th Avenue, Room 110
Fairbanks, Alaska 99701
March 19, 2010

Charles T. Schick, Ph.D.
ABR, Inc., Environmental Research and Services
P.O. Box 240268
Anchorage, AK 99524

Re: upgrade to the Dalton Highway
between mileposts 11 and 18

Dear Dr. Schick:

Thank you for your letter requesting information on endangered and threatened species, and critical habitats pursuant to Section 7 of the Endangered Species Act of 1973, as amended (Act).

Based on your letter, we understand you are working on a project related to a proposed upgrade to the existing road surface of the Dalton Highway between mileposts 11 and 18.

No listed species occur in the project areas, and there are no designated or proposed critical habitat units in interior Alaska. Therefore, the Service concludes that the proposed activities are not likely to adversely impact listed species. Preparation of a Biological Assessment or further consultation under section 7 of the Act regarding this project is not necessary.

This letter applies only to endangered and threatened species under our jurisdiction. It does not preclude the need to comply with other environmental legislation or regulations such as the Clean Water Act.

Thank you for your cooperation in meeting our joint responsibilities under the Act. If you need further assistance, please contact Denise Walther at (907) 456-0277.

Sincerely,

Ted Swem

Ted Swem
Branch Chief
Endangered Species

From: Kristi McLean
Sent: Wednesday, April 21, 2010 1:56 PM
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

To whom it may concern:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is preparing the environmental document for the **Dalton Highway MP 11-18 Reconstruction Project** NH-065-2(12)/62196. A request for scoping comments was distributed on 8 February 2010 (see attached).

If you would like to comment on the proposed project, please send written correspondence to:

Sarah Riddle, P.E.
Project Manager
Alaska Dept. of Transportation & Public Facilities
(907) 451-5361
sarah.riddle@alaska.gov

Thank you,

Kristi McLean, LEED AP
Environmental Specialist
R&M CONSULTANTS, INC.
9101 Vanguard Drive
Anchorage, AK 99507
907.646.9689 Direct
907.522.3403 Fax
www.rmconsult.com

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is preparing the environmental document for the **Dalton Highway MP 11-18 Reconstruction Project** NH-065-2(12)/62196. The attached scoping letter document (also available at the link below) provides the project description, potential environmental issues, and contact information.
To ensure that all factors are considered in the development of the environmental document, **please provide your written comments by March 10, 2010.**

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Aves Thompson [mailto:aves@aktrucks.org]
Sent: Thursday, April 22, 2010 2:19 PM
To: Thies, Howard (DOT)
Subject: RE: Need comments from Truckers: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196

We will send an email blast to our members. I/you can talk about feedback at our Annual Meeting next week. Are you planning to shoot on Wednesday? Aves

Aves Thompson | Executive Director | Alaska Trucking Association | www.aktrucks.org
Office 907 276-1149 | Mobile 907 240-0114 | Fax 907 274-1946

From: Thies, Howard (DOT) [mailto:howard.thies@alaska.gov]
Sent: Thursday, April 22, 2010 10:25 AM
To: Aves Thompson
Subject: FW: Need comments from Truckers: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196

Aves can you get this to the TRUCKERS for Comments on this PROJECT
Howie

From: Riddle, Sarah E (DOT)
Sent: Thursday, April 22, 2010 10:06 AM
To: Thies, Howard (DOT)
Subject: Need comments from Truckers: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196

Hi Howard,
We sent the attached scoping letter describing the project to the Alaska Trucking Association (Anna Richmond) but to date have no response from anyone in the trucking community. It would be really helpful to have feedback, especially support from the primary users. If you could forward this on to any of your contacts and solicit comments, it would really help to get our environmental documentation completed. **I would appreciate comments by May 15, 2010.** Have anyone with comments/concerns feel free to contact me.
Thanks!

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
To: aritenour@explorefairbanks.com; Richmond, Anna (DOA sponsored); Bailey, Meadow P (DOT); Bainbridge, Steven T (DEC); Bennett, John F (DOT); Birkholz, Ethan N (DOT); Bittner, Judith E (DNR); Bloom, David T (DOT); Bottoms, Jay J (DOT); Campbell, Bruce W (DOT); Christy.A.Everett@usace.army.mil; Holloway, Audie E (DPS); Dietrick, Larry V (DEC); Drzewiecki, Gregory W (DEC); Edwards, Alice L S (DEC); dean.heather@epamail.epa.gov; jturner@gci.com; curtis.jennifer@epa.gov; Kent, Lynn J T (DEC); Kevin Pendergast; Krol, Longin (DOT); adventure@northernalaska.com; McLean, Robert F (DFG); Milne, Clark R (DOT); Mylius, Richard H (DNR); Palmer, Sean P (DEC); nagelpc@alyeska-pipeline.com; Rafson, Gerald J (DOT); aoc@alaskaoutdoorcouncil.org; shelly_jacobson@blm.gov; Stuller, Dwight D (DOT); sue_masica@nps.gov; ted_swem@fws.gov; Thies, Howard (DOT); Woster, Timothy J (DOT); Benjamin, Thomas A (DOT)
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

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Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Riddle, Sarah E (DOT) [mailto:sarah.riddle@alaska.gov]
Sent: Friday, May 07, 2010 12:58 PM
To: Lance Debernardi; Kevin Pendergast
Cc: Tim Grier
Subject: FW: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196
Importance: High

I consider this a response to scoping, with the photos as a bonus. Thanks!

From: Nagel, Peter C. [mailto:NagelPC@alyeska-pipeline.com]
Sent: Friday, May 07, 2010 12:56 PM
To: Riddle, Sarah E (DOT)
Cc: Lai, Alexandre; Tideman, Philip P.
Subject: FW: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196
Importance: High

Hi Sarah, Thank you for the opportunity to review these plans. We do not foresee any adverse effects on Alyeska's business.

Here are three pictures taken recently by Phil Tideman while on Pipeline surveillance which may be useful.

Please let us know if you have any questions. Pete

From: Riddle, Sarah E (DOT) [mailto:sarah.riddle@alaska.gov]
Sent: Friday, April 23, 2010 8:59 AM
To: Nagel, Peter C.; Lai, Alexandre
Subject: FW: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196

Hi Alex and Pete,
Russ Johnson gave me your names as a contact for Alyeska. The attached scoping letter describes our project and environmental issues and we're very interested in any comments from Alyeska. Even if you have no substantial comments at this time, if you support the project, those comments are very helpful towards moving forward in our environmental documentation process. **I would appreciate comments by May 15, 2010.**
Have anyone with comments/concerns feel free to contact me.
Thanks!

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
To: aritenour@explorefairbanks.com; Richmond, Anna (DOA sponsored); Bailey, Meadow P (DOT); Bainbridge, Steven T (DEC); Bennett, John F (DOT); Birkholz, Ethan N (DOT); Bittner, Judith E (DNR); Bloom, David T (DOT); Bottoms, Jay J (DOT); Campbell, Bruce W (DOT); Christy.A.Everett@usace.army.mil; Holloway, Audie E (DPS); Dietrick, Larry V (DEC); Drzewiecki, Gregory W (DEC); Edwards, Alice L S (DEC); dean.heather@epamail.epa.gov; jturner@gci.com; curtis.jennifer@epa.gov; Kent, Lynn J T (DEC); Kevin Pendergast; Krol, Longin (DOT); adventure@northernalaska.com; McLean, Robert F (DFG); Milne, Clark R (DOT); Mylius, Richard H (DNR); Palmer, Sean P (DEC); nagelpc@alyeska-pipeline.com; Rafson, Gerald J (DOT); aoc@alaskaoutdoorcouncil.org; shelly_jacobson@blm.gov; Stuller, Dwight D (DOT); sue_masica@nps.gov; ted_swem@fws.gov; Thies, Howard (DOT); Woster, Timothy J (DOT); Benjamin, Thomas A (DOT)
Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

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Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Thies, Howard (DOT)
Sent: Monday, May 10, 2010 3:06 PM
To: Riddle, Sarah E (DOT)
Subject: FW: Dalton Highway Comments
Importance: High

From: Aves Thompson [mailto:aves@aktrucks.org]
Sent: Monday, May 10, 2010 2:06 PM
To: Thies, Howard (DOT)
Subject: FW: Dalton Highway Comments
Importance: High

Here is a comment. Aves

Aves Thompson l Executive Director l Alaska Trucking Association l www.aktrucks.org
Office 907 276-1149 l Mobile 907 240-0114 l Fax 907 274-1946

From: Tim Koerber [mailto:timk@wbialaska.com]
Sent: Monday, May 10, 2010 1:52 PM
To: Aves Thompson, AK Trucking Association
Cc: Jimmy Doyle; Tim Koerber
Subject: FW: Dalton Highway Comments
Importance: High

Greetings Aves – After looking through the realignment documents I believe optional route # 3 would be the best one for the following reasons.

1) Better visibility.
2) Straightens out the curve.
3) A driver can get a better run at the hill.
4) Shortens the amount of work needed to be done on the project and the freight can stay moving .

Thank You, Tim

From: Jimmy Doyle [mailto:JimmyD@wbialaska.com]
Sent: Monday, April 26, 2010 3:49 PM
To: Tim Koerber
Subject: FW: Dalton Highway Comments
Importance: High

From: Alaska Trucking Association [mailto:info@aktrucks.org]
Sent: Monday, April 26, 2010 3:29 PM
To: info@aktrucks.org
Subject: Dalton Highway Comments
Importance: High

To all members:
Pls review the attached document and provide comments as requested. This is an important project and Howard Thies is asking for our help.
Aves Thompson l Executive Director l Alaska Trucking Association l www.aktrucks.org
Office 907 276-1149 l Mobile 907 240-0114 l Fax 907 274-1946

From: Riddle, Sarah E (DOT) [mailto:sarah.riddle@alaska.gov]
Sent: Wednesday, May 12, 2010 9:40 AM
To: Lance Debernardi; Tim Grier; Kevin Pendergast
Subject: RE: Trucker comments needed: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196

I spoke to Mr. Johnston this morning. I explained to him that we are carefully considering whether or not to pave this segment, or to delay paving for several years in anticipation of settlement. He completely understands our predicament (ice everywhere) but he strongly advocates for investing money in D-1 surfacing that can be more easily maintained once the inevitable heaving takes place.

From: David Johnston [mailto:pakrat99709@yahoo.com]
Sent: Tuesday, May 11, 2010 9:52 PM
To: Lane Keator
Cc: Thies, Howard (DOT); Riddle, Sarah E (DOT)
Subject: Re: FW: Trucker comments needed: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196

Hello Lane;
After carefully reading this proposal I found one aspect of it very disturbing.
Paving this type of heavily ice laden terrain is foolish at best, and criminal at worst!
I bet the contractor will be laughing all the way to the bank!! Let's NOT waste this money!!

Just look at the "New" pavement that stretches from 18 mile to 23 mile or so. This started settling before the lines were even painted on the new surface! The only "stable" areas are where thaw stable bedrock is the base. Everything else has moved, some of it to the point of having up to 5 feet of D-1 filling in the cracks and sinkholes. $5 million dollars just farted away.....How many yards of D-1 would that buy? New graders? This kind of wanton waste should be exposed!

This type of movement is starting to show up in the state of the art job done several years ago from 36 to 48. There is no way you can engineer a "Fix" for this. Every 10 feet of road bed is different up there, don't you agree?

The choice of road relocation should be weighted very, very heavily towards geologic stability. I'd be interested to see the studies, if they have been done, of the 12 mile dip area...I bet it's bottomless ice lenses! I bet most of the north facing slopes are not much better.

Retain the trees and brush cover along the side of the road!! This is a quite efficient insulator of the permafrost, helps control erosion and shades the roadbed holding down summer time temperatures, which is the enemy of the underlying ice formations.

A compromise would be to do the realignment, but leave it surfaced with D-1 and calcium. This would give the poor guys that have to maintain the "New" road that someone behind a desk creates a chance to keep it safe and up to grade. Currently they have to haul repair material from Livengood at a huge expense.

I'm no engineer, but you observe the results of different practices and draw logical conclusions, plain and simple.....

David E. Johnston
(907)460-4751

--- On **Tue, 5/11/10, Lane Keator <lkeator@carlile.biz>** wrote:
From: Lane Keator <lkeator@carlile.biz>
Subject: FW: Trucker comments needed: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196
To: "Phil Kromm" <pkromm@carlile.biz>, "David Johnston" <pakrat99709@yahoo.com>
Date: Tuesday, May 11, 2010, 4:42 PM

Hi Guys-
Can you provide a little feedback on these notes and pictures so we can submit to Howie.

Thanks-

Lane

From: Aves Thompson [mailto:aves@aktrucks.org]
Sent: Friday, May 07, 2010 3:02 PM
To: Al Guettinger - Alaska West Express; 'Mark Graves'; 'Jeff Gregory'; Lane Keator; 'Jimmy Doyle'; 'Mervin Gilbertson'; Kevin Cilk; Craig Tornga
Subject: FW: Trucker comments needed: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196
Importance: High

Howard needs comments on this proposed project at Mile 11-18 Dalton. Pls scroll all the way down to find the website that describes the project. If you have any questions on the details of the project, please call Howard Thies at 907 451-2295. He needs our help. He needs written comments either by mail or by e-mail. Pls take the time to comment. Thanks. Aves

Aves Thompson l Executive Director l Alaska Trucking Association l www.aktrucks.org
Office 907 276-1149 l Mobile 907 240-0114 l Fax 907 274-1946

From: Thies, Howard (DOT) [mailto:howard.thies@alaska.gov]
Sent: Friday, May 07, 2010 2:21 PM
To: Aves Thompson
Subject: FW: Trucker comments needed: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196
Importance: High

AVES CAN YOU HELP WITH THE COMMENTS we are trying to improve so need comments

Howie

From: Riddle, Sarah E (DOT)
Sent: Friday, May 07, 2010 1:30 PM
To: Thies, Howard (DOT)
Subject: Trucker comments needed: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196
Importance: High

Howard-
We heard from Alyeska, but not truckers. Maybe the attached photos will be useful so they can see the curve we're looking at fixing?

Thanks!
Sarah

From: Nagel, Peter C. [mailto:NagelPC@alyeska-pipeline.com]
Sent: Friday, May 07, 2010 12:56 PM
To: Riddle, Sarah E (DOT)
Cc: Lai, Alexandre; Tideman, Philip P.
Subject: FW: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196
Importance: High

Hi Sarah, Thank you for the opportunity to review these plans. We do not foresee any adverse effects on Alyeska's business.
Here are three pictures taken recently by Phil Tideman while on Pipeline surveillance which may be useful.
Please let us know if you have any questions. Pete

From: Riddle, Sarah E (DOT) [mailto:sarah.riddle@alaska.gov]
Sent: Friday, April 23, 2010 8:59 AM
To: Nagel, Peter C.; Lai, Alexandre
Subject: FW: Dalton MP 11-18 Reconstruction-NH-065-2(12)/62196

Hi Alex and Pete,
Russ Johnson gave me your names as a contact for Alyeska. The attached scoping letter describes our project and environmental issues and we're very interested in any comments from Alyeska. Even if you have no substantial comments at this time, if you support the project, those comments are very helpful towards moving forward in our environmental documentation process. **I would appreciate comments by May 15, 2010.**
Have anyone with comments/concerns feel free to contact me.
Thanks!

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Riddle, Sarah E (DOT)
Sent: Monday, February 08, 2010 9:26 AM
To: aritenour@explorefairbanks.com; Richmond, Anna (DOA sponsored); Bailey, Meadow P (DOT); Bainbridge, Steven T (DEC); Bennett, John F (DOT); Birkholz, Ethan N (DOT); Bittner, Judith E (DNR); Bloom, David T (DOT); Bottoms, Jay J (DOT); Campbell, Bruce W (DOT); Christy.A.Everett@usace.army.mil; Holloway, Audie E (DPS); Dietrick, Larry V (DEC); Drzewiecki, Gregory W (DEC); Edwards, Alice L S (DEC); dean.heather@epamail.epa.gov; jturner@gci.com; curtis.jennifer@epa.gov; Kent, Lynn J T (DEC); Kevin Pendergast; Krol, Longin (DOT); adventure@northernalaska.com; McLean, Robert F (DFG); Milne, Clark R (DOT); Mylius, Richard H (DNR); Palmer, Sean P (DEC); nagelpc@alyeska-pipeline.com; Rafson, Gerald J (DOT); aoc@alaskaoutdoorcouncil.org; shelly_jacobson@blm.gov; Stuller, Dwight D (DOT); sue_masica@nps.gov; ted_swem@fws.gov; Thies, Howard (DOT); Woster, Timothy J (DOT); Benjamin, Thomas A (DOT)

Subject: Scoping Letter: Dalton Highway MP 11-18 Reconstruction Project-NH-065-2(12)/62196

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is preparing the environmental document for the **Dalton Highway MP 11-18 Reconstruction Project** NH-065-2(12)/62196. The attached scoping letter document (also available at the link below) provides the project description, potential environmental issues, and contact information.
To ensure that all factors are considered in the development of the environmental document, **please provide your written comments by March 10, 2010.**

Sarah Riddle, P.E.
Engineering Manager
Alaska Dept. of Transportation & Public Facilities
Northern Region Preconstruction
(907) 451-5361

From: Kevin Pendergast
Sent: Tuesday, May 18, 2010 2:06 PM
To: mac.mclean@alaska.gov
Cc: Lance Debernardi; Kristi McLean; Tim Grier; Riddle, Sarah E (DOT)
Subject: Dalton Hwy. MP 11-18 Reconstruction: Erickson Creek

Good afternoon Mac-

We spoke via telephone last summer about this project and its potential to affect Erickson Creek. The design has progressed since then, and the environmental document is proceeding as well. Now that we have a plan for what the road will look like at the Erickson Creek crossing (see attached), we would like to discuss it with you to make sure we have considered all of the issues. The environmental document is a CatEx, and the intent is to have it finalized and signed mid-summer. Permitting will commence shortly thereafter, so we need to be sure the scheme we currently have will be able to be permitted.

I suggest that we get together via teleconference this week to discuss. Are you available tomorrow mid-morning (Wednesday)? Please feel free to suggest an alternate time.

Regards,
Kevin Pendergast

Kevin J. Pendergast, C.P.G.
Senior Geologist-Environmental Specialist

R&M CONSULTANTS, INC.
9101 Vanguard Drive
Anchorage, AK 99507
907.646.9682 Direct
907.522.3403 Fax
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9101 Vanguard Drive, Anchorage, Alaska 99507
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Dalton Highway MP 11-18 Reconstruction
Project No. 62196/NH-065-2(12)
Teleconference with ADF&G Meeting Minutes
19 May 2010; 1:30 pm – 2:00 pm

In attendance: Sarah Riddle (DOT&PF), Loren Haddix (DOT&PF), Mac McLean (ADF&G), Lance DeBernardi (R&M), Tim Grier (R&M), Kevin Pendergast (R&M), Kristi McLean (R&M)

- Lance began the meeting with a brief overview and current status of the proposed project.
  - DOT&PF is proceeding with the Environmental Document (CatEx) and will begin the permitting effort once the CatEx is approved (Summer 2010). The purpose of this teleconference is to continue coordination with ADF&G in pursuit of a Title 16 Fish Habitat permit for Erickson Creek and to identify any potential fatal flaws during preliminary design.
- Given the adverse road geometry near the road crossing at Erickson Creek, realignment of the road to 50 MPH design standards is proposed.
- Preliminary design at Erickson Creek includes:
  - Increasing culvert length to approximately 225'
  - Increasing culvert diameter to at least 14' (which is different than the 10' width currently shown on the plan)
  - Grade raise in the area will be between 30' and 35'
- Questions raised by Mac McLean:
  - How much of the creek channel meander would be eliminated?
    - (Debernardi) Approximately 300 feet
  - What would the proposed culvert slope be?
    - (Grier/Debernardi) Approximately 2% due to the shortened length. The existing average channel slope is approximately 1.5%.
  - What are the pre- and post-project channel gradients upstream and downstream of the culvert?
    - (Debernardi) No definitive answer at this time
    - This question is important to mitigate potential head cutting upstream due to the loss of channel meander and increased slope.
- (M. McLean) ADF&G has no problems with preliminary design (see attached preliminary design) as long as the culvert will be designed to pass fish (either Tier I or Tier II) and that potential headcutting with respect to increased channel slope will be addressed and mitigated. For this particular culvert, there is no preference between Tier I or II; however, it should be noted that Tier I design involves less hydraulic calculations and is generally easier to permit. Culvert outlet should be designed with proper controls to dissipate energy before water re-enters the natural channel (i.e. outlet apron, tailwater control for fish moving upstream).
- Mac would likely be the one reviewing the permit application
- Jim Aldrich is to continue with preliminary design at Erickson Creek. Close coordination with ADF&G is recommended to achieve feasible design that would pass fish.

APPENDIX B

SECTION 106 CONSULTATION:

- SECTION 106 FINDING LETTERS: NO HISTORIC PROPERTIES AFFECTED (NHPA)
- SHPO CONCURRENCE WITH NHPA FINDING
- SEPTEMBER 2009 CULTURAL RESOURCES SURVEY OF DALTON HIGHWAY MP 11 – 18 REHABILITATION PROJECT, INTERIOR ALASKA

U.S. Department
of Transportation
Federal Highway Administration

Alaska Division

May 24, 2010

709 West 9th Street, Rm. 851
P.O. Box 21648
Juneau, AK 99802
(907) 586-7418
(907) 586-7420 Fax
www.fhwa.dot.gov/akdiv

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 West 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

In Reply Refer To:
NH-065-2(12)/62196

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is proposing to construct roadway improvements to the Dalton Highway between Mileposts 11 and 18 (Figure 1). The proposed project is located in Sections 17, 19, 20, 26-30, and 36, Township 9 North, Range 7 West, Fairbanks Meridian, USGS Quadrangles Livengood C-4 and C-5. Pursuant to 36 CFR 800.4(d)(1), implementing regulations of Section 106 of the National Historic Preservation Act, the FHWA finds that no historic properties would be affected by the proposed construction.

Project Description

This project proposes to improve roadway safety and performance by widening the highway to a uniform width of 32 feet, and reconstructing the MP 11-18 alignment. The project will apply asphalt to the road surface from MP 11-18 (an upgrade from the current gravel surface), replace existing failed culverts and install new culverts as needed to facilitate drainage. Roadway width will be increased to provide a consistent 32 foot width (including lanes and shoulders) along the entire project length, and from MP 13-18 the vertical alignment will be raised from 1 foot to 15 feet to meet design sight distance requirements. At Erickson Creek, the raise in grade may be as much as 30 feet in order to meet grade requirements and to maintain a fill condition through a known area of ice rich soil (MP 12, Figure 2). The project proposes to construct a horizontal realignment at Erickson Creek to achieve 50 MPH design standards; however, geologic conditions (massive ice) may limit the extent of this realignment. Several alternative realignments for the work in this location are shown on Figure 2. Relocation of the existing 123 foot long by 120 inch diameter culvert at Erickson Creek may be required for the highway realignment in this area. All realignment options will require new right of way (ROW) acquisition from the Alaska Department of Natural Resources (DNR).

Area of Potential Affect

The Area of Potential Effect (APE) for the proposed project includes a 300-foot wide corridor centered on the existing highway between MP 11 and 18 (Figure 1), with a widening to 600 feet at the proposed horizontal realignment at Erickson Creek (Figure 2). The widened APE begins at approximately MP 12 and extends for about 4,300 feet, before resuming a 300 foot width near MP 12.8. The APE also includes a 200 acre material site located just north of the project corridor (19 Mile Hill Quarry, Figures 1 and 3). The APE was established to include the footprint of all potential roadway realignments and the material site likely to be used for this project.

RECOVERY.GOV

Cultural Resource Identification

A 2008 cultural resources survey revealed no archaeological sites and no properties eligible for the National Register of Historic Places in the APE. The survey is described in a report by Northern Land Use Research Inc. (NLUR), entitled *"Cultural Resources Survey of the Dalton Highway MP 11-18 Rehabilitation Project, Interior Alaska."* One potential realignment of the road added to the project after completion of the NLUR survey occurs just 44 feet outside of the survey area. An NLUR addendum to the report (19 April 2010, RE: Dalton Highway, MP 11-18 Cultural Resource Survey, Addendum to Full Report) evaluated the potential for archaeological materials in this new portion of the APE and determined that the new realignment area appears low in potential for cultural resources. The delineation of this area is shown on page 3 of the attached addendum.

The Dalton Highway itself is within the APE and has not been evaluated as a potential historic property. Historic significance and National Register eligibility of the Dalton Highway will ultimately be assessed through the historic context efforts of the recently implemented *Programmatic Agreement (PA) Regarding Alaska's Highway System Roads Affected by the Federal Aid Highway Program* (February 23, 2010).

Finding of Effect

There were no eligible properties found within the APE and the archaeologist recommended a finding of "No Historic Properties Affected" for this project. Subsequently, the FHWA finds that no historic properties will be affected by the proposed project.

Consultation

Letters stating an initial finding of "No Historic Properties Affected" and requesting comments have been sent to Doyon, Limited and Tanana Chiefs Conference.

Please direct your concurrence or comments to me at the address above, by telephone at (907)586-7427, or by e-mail at Peter.Forsling@dot.gov.

Sincerely,

Peter J. Forsling
Northern Region/Structural Engineer

Enclosures:

Figure 1: Location and Vicinity Map with Area of Potential Effect
Figure 2: Potential Realignment Options at Erickson Creek
Figure 3: Material Site APE

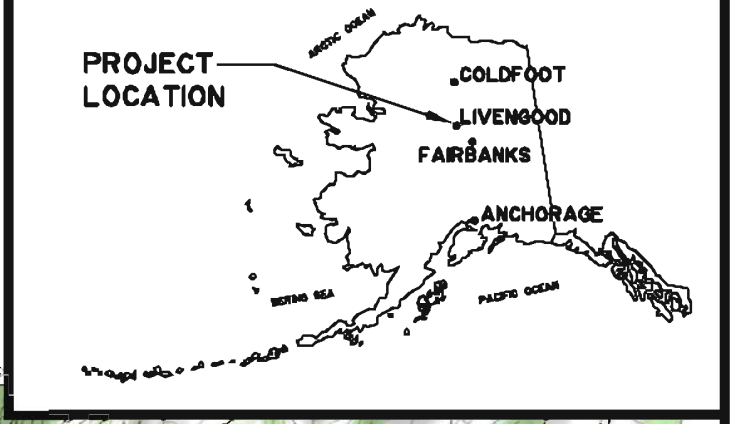
Office of History and Archaeology Coversheet
Report: *"Cultural Resources Survey of Dalton Highway MP 11-18 Rehabilitation Project, Interior Alaska"* prepared by Northern Land Use Research, Inc.
NLUR Addendum to Full Report

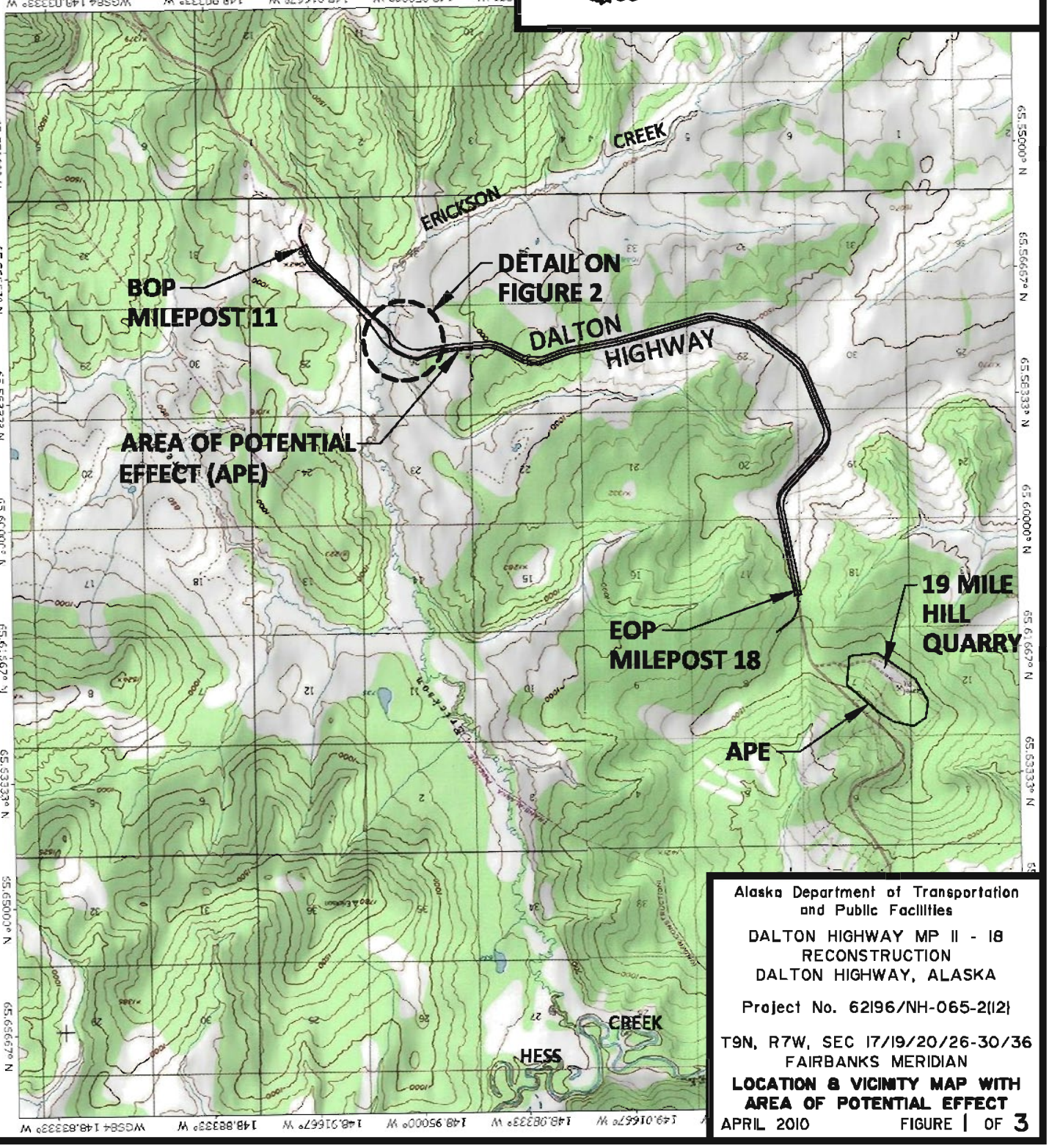
cc w/o enclosures:

Sarah Riddle, P.E., DOT&PF Northern Region, Project Manager
Bruce Campbell, DOT&PF Northern Region, Regional Environmental Manager
Amy Russell, DOT&PF Northern Region, Cultural Resources Specialist
Laurie Mulcahy, DOT&PF Statewide, Environmental Program Manager

NOTE:

NORTH IS DOWN BY PROJECT-SPECIFIC CONVENTION.





Alaska Department of Transportation and Public Facilities

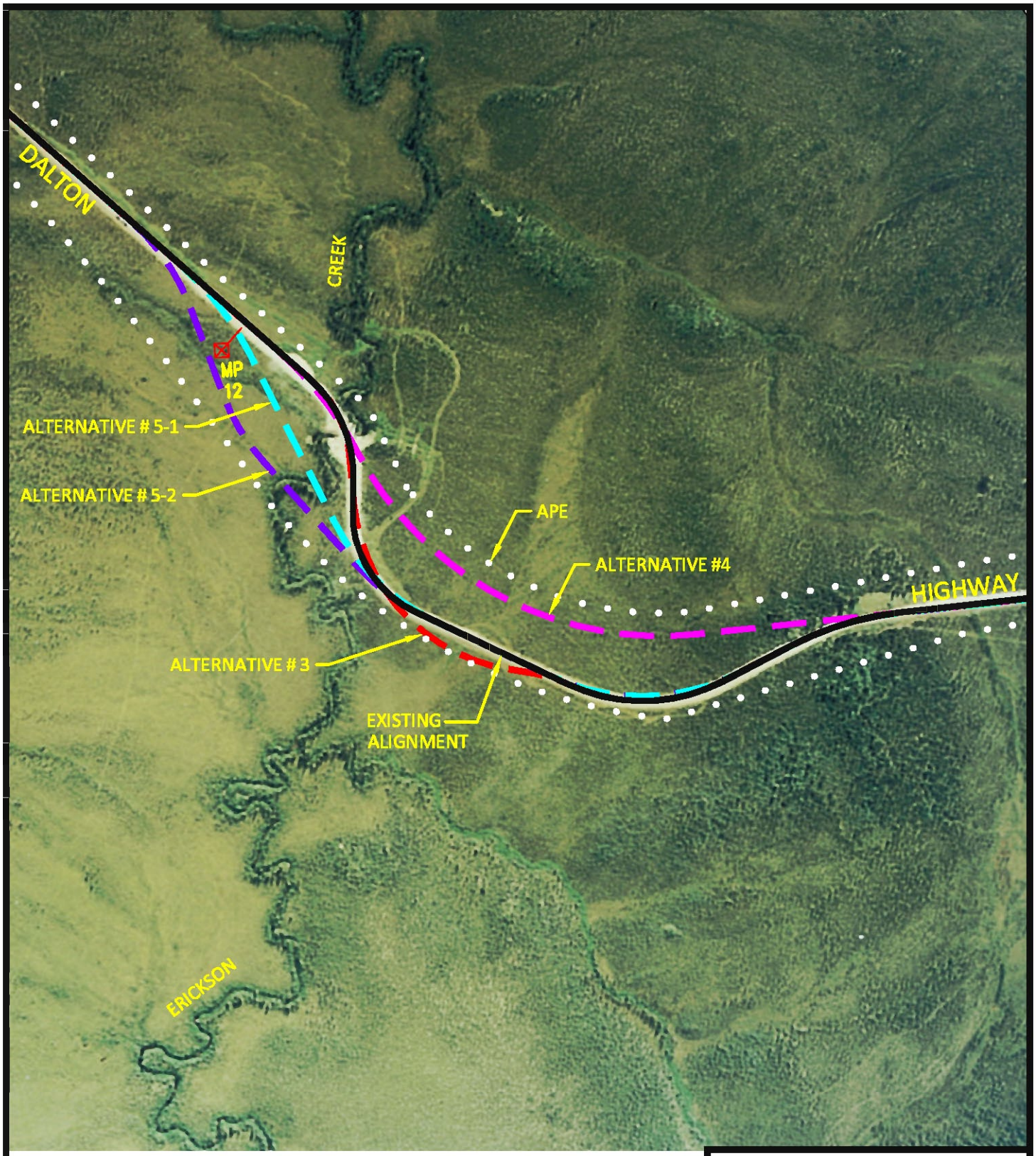
DALTON HIGHWAY MP 11 - 18
RECONSTRUCTION
DALTON HIGHWAY, ALASKA

Project No. 62196/NH-065-2(12)

T9N, R7W, SEC 17/19/20/26-30/36
FAIRBANKS MERIDIAN

LOCATION & VICINITY MAP WITH AREA OF POTENTIAL EFFECT

APRIL 2010 FIGURE 1 OF 3



NOTE:

NORTH IS DOWN BY PROJECT-SPECIFIC CONVENTION.

Alaska Department of Transportation and Public Facilities

DALTON HIGHWAY MP II - 18
RECONSTRUCTION
DALTON HIGHWAY, ALASKA

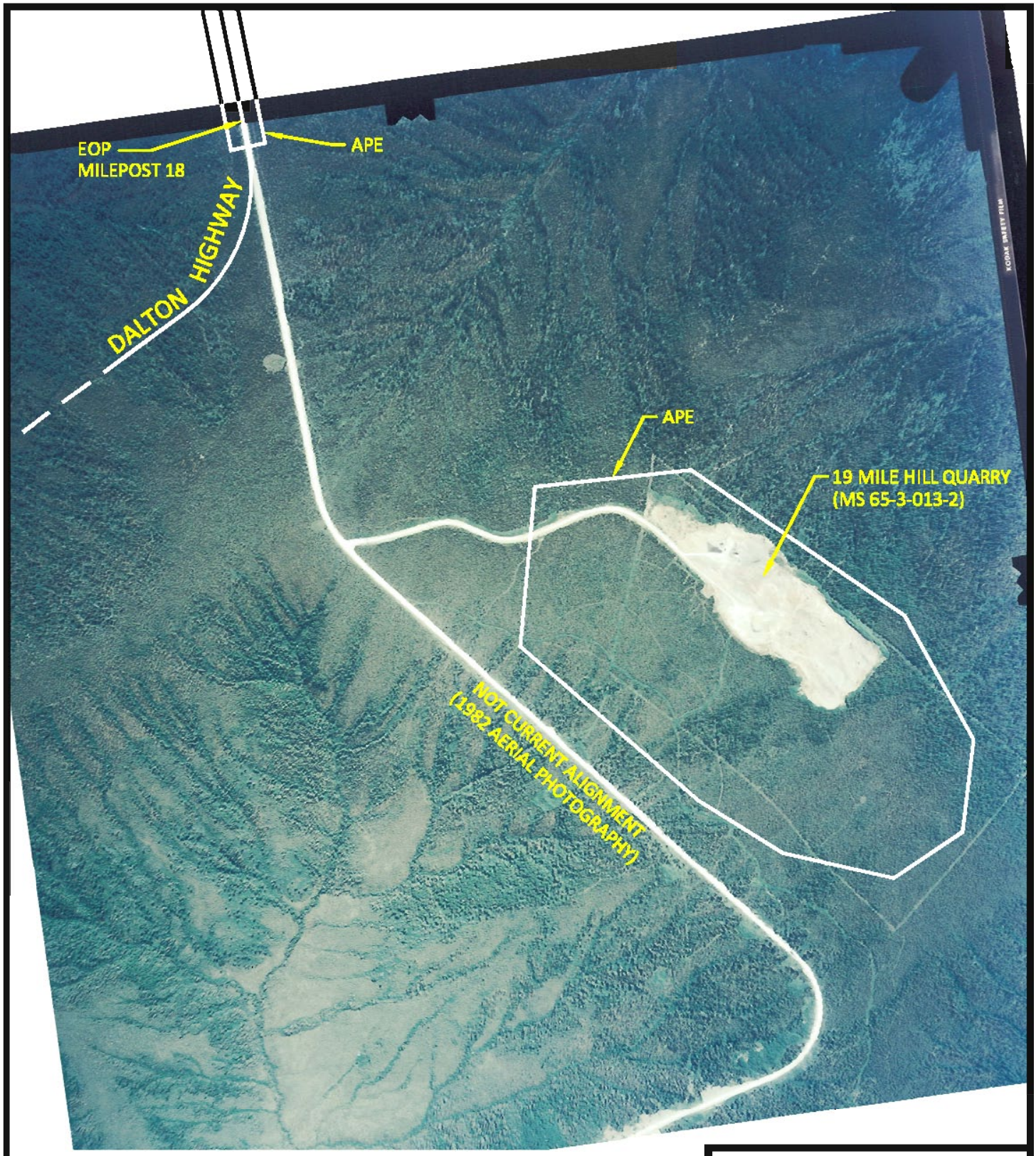
Project No. 62196/NH-065-2(12)

T9N, R7W, SEC 17/19/20/26-30/36
FAIRBANKS MERIDIAN

ALIGNMENT ALTERNATIVES

APRIL 2010 FIGURE 2 OF 3

Plotted 4/26/2010 4:10 PM by Ryan Goetzel Z:\project\62196.01 DOT N Dalton Hwy MP 11-18\Earth Science\Acad\Geo\Acad\62196.01 Realignment Alternatives.dwg



NOTE:

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Alaska Department of Transportation and Public Facilities

DALTON HIGHWAY MP 11 - 18
RECONSTRUCTION
DALTON HIGHWAY, ALASKA

Project No. 62196/NH-065-2(12)

T9N, R7W, SEC 17/19/20/26-30/36
FAIRBANKS MERIDIAN

MATERIAL SITE APE

APRIL 2010 FIGURE 3 OF 3

Plotted: 4/26/2010 4:44 PM by Ryan Gaetke Z:\projects\62196 DOT N Dalton Hwy MP 11-18\Earth Science\Mxds\ReviewAreas\V8382.01 Material Site APE.mxd

U.S. Department
of Transportation
Federal Highway Administration

Alaska Division

May 24, 2010

709 West 9th Street, Rm. 851
P.O. Box 21648
Juneau, AK 99802
(907) 586-7418
(907) 586-7420 Fax
www.fhwa.dot.gov/akdiv

Mr. Jerry Isaac, President
Tanana Chiefs Conference
122 First Avenue, Suite 600
Fairbanks, Alaska 99701

In Reply Refer To:
NH-065-2(12)/62196

Dear Mr. Isaac:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of Federal Highway Administration (FHWA), is proposing to construct roadway improvements to the Dalton Highway between Mileposts 11 and 18 (Figure 1). The proposed project is located in Sections 17, 19, 20, 26-30, and 36, Township 9 North, Range 7 West, Fairbanks Meridian, USGS Quadrangles Livengood C-4 and C-5. Pursuant to 36 CFR 800.4(d)(1), implementing regulations of Section 106 of the National Historic Preservation Act, the FHWA finds that no historic properties would be affected by the proposed construction.

Project Description

This project proposes to improve roadway safety and performance by widening the highway to a uniform width of 32 feet, and reconstructing the MP 11-18 alignment. The project will apply asphalt to the road surface from MP 11-18 (an upgrade from the current gravel surface), replace existing failed culverts and install new culverts as needed to facilitate drainage. Roadway width will be increased to provide a consistent 32 foot width (including lanes and shoulders) along the entire project length, and from MP 13-18 the vertical alignment will be raised from 1 foot to 15 feet to meet design sight distance requirements. At Erickson Creek, the raise in grade may be as much as 30 feet in order to meet grade requirements and to maintain a fill condition through a known area of ice rich soil (MP 12, Figure 2). The project proposes to construct a horizontal realignment at Erickson Creek to achieve 50 MPH design standards; however, geologic conditions (massive ice) may limit the extent of this realignment. Several alternative realignments for the work in this location are shown on Figure 2. Relocation of the existing 123 foot long by 120 inch diameter culvert at Erickson Creek may be required for the highway realignment in this area. All realignment options will require new right of way (ROW) acquisition from the Alaska Department of Natural Resources (DNR).

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Finding of Effect

There were no eligible properties found within the APE and the archaeologist recommended a finding of "No Historic Properties Affected" for this project. Subsequently, the FHWA finds that no historic properties will be affected by the proposed project.

Consultation

Letters are being sent to the following parties: State Historic Preservation Officer; Doyon, Ltd., and the Tanana Chiefs Conference. The FHWA respectfully requests notification regarding any places of traditional religious and cultural importance to your tribal organization that could be affected by the proposed project.

If you wish to comment on this project or this finding, I can be reached at the above contact information. In addition, Pete Forsling, Northern Region Engineer, is available at the same address above, by telephone at (907)586-7418, or by e-mail at peter.forsling@dot.gov.

I encourage you to include the DOT&PF in your response so that your comments and concerns may be immediately directed to project development. The DOT&PF point of contact for this project is Bruce Campbell, Northern Region Environmental Manager, reachable by telephone at (907)451-2238 or by email at bruce.campbell@alaska.gov.

We request that comments be received within thirty days of your receipt of this correspondence.

Sincerely,

David C. Miller
Division Administrator

Enclosures:

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U.S. Department
of Transportation
Federal Highway Administration

Alaska Division

May 24, 2010

709 West 9th Street, Rm. 851
P.O. Box 21648
Juneau, AK 99802
(907) 586-7418
(907) 586-7420 Fax
www.fhwa.dot.gov/akdiv

Mr. Norm Phillips, Jr., President/CEO
Doyon, Ltd.
1 Doyon Place, Suite 300
Fairbanks, Alaska 99701

In Reply Refer To:
NH-065-2(12)/62196

Dear Mr. Phillips:

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Sincerely,

David C. Miller
Division Administrator

Enclosures:

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Office of History and Archaeology Coversheet
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NLUR Addendum to Full Report

cc w/o enclosures:

Sarah Riddle, P.E., DOT&PF Northern Region, Project Manager
Bruce Campbell, DOT&PF Northern Region, Regional Environmental Manager
Amy Russell, DOT&PF Northern Region, Cultural Resources Specialist
Laurie Mulcahy, DOT&PF Statewide, Environmental Program Manager

T

5130-12 Atkins

U.S. Department of Transportation
Federal Highway Administration

Alaska Division

709 West 9th Street, Rm. 851
P.O. Box 21648
Juneau, AK 99802
(907) 586-7418
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www.fhwa.dot.gov/akdiv

May 24, 2010

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 West 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

RECEIVED
MAY 27 2010
OHA

In Reply Refer To:
NH-065-2(12)/62196

Federal Highway Administration
JUL 2 2010
Juneau, Alaska

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is proposing to construct roadway improvements to the Dalton Highway between Mileposts 11 and 18 (Figure 1). The proposed project is located in Sections 17, 19, 20, 26-30, and 36, Township 9 North, Range 7 West, Fairbanks Meridian, USGS Quadrangles Livengood C-4 and C-5. Pursuant to 36 CFR 800.4(d)(1), implementing regulations of Section 106 of the National Historic Preservation Act, the FHWA finds that no historic properties would be affected by the proposed construction.

Project Description

This project proposes to improve roadway safety and performance by widening the highway to a uniform width of 32 feet, and reconstructing the MP 11-18 alignment. The project will apply asphalt to the road surface from MP 11-18 (an upgrade from the current gravel surface), replace existing failed culverts and install new culverts as needed to facilitate drainage. Roadway width will be increased to provide a consistent 32 foot width (including lanes and shoulders) along the entire project length, and from MP 13-18 the vertical alignment will be raised from 1 foot to 15 feet to meet design sight distance requirements. At Erickson Creek, the raise in grade may be as much as 30 feet in order to meet grade requirements and to maintain a fill condition through a known area of ice rich soil (MP 12, Figure 2). The project proposes to construct a horizontal realignment at Erickson Creek to achieve 50 MPH design standards; however, geologic conditions (massive ice) may limit the extent of this realignment. Several alternative realignments for the work in this location are shown on Figure 2. Relocation of the existing 123 foot long by 120 inch diameter culvert at Erickson Creek may be required for the highway realignment in this area. All realignment options will require new right of way (ROW) acquisition from the Alaska Department of Natural Resources (DNR).

Area of Potential Affect

The Area of Potential Effect (APE) for the proposed project includes a 300-foot wide corridor centered on the existing highway between MP 11 and 18 (Figure 1), with a widening to 600 feet at the proposed horizontal realignment at Erickson Creek (Figure 2). The widened APE begins at approximately MP 12 and extends for about 4,300 feet, before resuming a 300 foot width near MP 12.8. The APE also includes a 200 acre material site located just north of the project corridor (19 Mile Hill Quarry, Figures 1 and 3). The APE was established to include the footprint of all potential roadway realignments and the material site likely to be used for this project.

RECOVERY.GOV

No Historic Properties Affected
Alaska State Historic Preservation Officer
Date: 4/30/2010
No.: 3130-12 Atkins

Cultural Resource Identification

A 2008 cultural resources survey revealed no archaeological sites and no properties eligible for the National Register of Historic Places in the APE. The survey is described in a report by Northern Land Use Research Inc. (NLUR), entitled *"Cultural Resources Survey of the Dalton Highway MP 11-18 Rehabilitation Project, Interior Alaska."* One potential realignment of the road added to the project after completion of the NLUR survey occurs just 44 feet outside of the survey area. An NLUR addendum to the report (19 April 2010, RE: Dalton Highway, MP 11-18 Cultural Resource Survey, Addendum to Full Report) evaluated the potential for archaeological materials in this new portion of the APE and determined that the new realignment area appears low in potential for cultural resources. The delineation of this area is shown on page 3 of the attached addendum.

The Dalton Highway itself is within the APE and has not been evaluated as a potential historic property. Historic significance and National Register eligibility of the Dalton Highway will ultimately be assessed through the historic context efforts of the recently implemented *Programmatic Agreement (PA) Regarding Alaska's Highway System Roads Affected by the Federal Aid Highway Program* (February 23, 2010).

Finding of Effect

There were no eligible properties found within the APE and the archaeologist recommended a finding of "No Historic Properties Affected" for this project. Subsequently, the FHWA finds that no historic properties will be affected by the proposed project.

Consultation

Letters stating an initial finding of "No Historic Properties Affected" and requesting comments have been sent to Doyon, Limited and Tanana Chiefs Conference.

Please direct your concurrence or comments to me at the address above, by telephone at (907)586-7427, or by e-mail at Peter.Forsling@dot.gov.

Sincerely,

Peter J. Forsling
Northern Region/Structural Engineer

Enclosures:

Figure 1: Location and Vicinity Map with Area of Potential Effect
Figure 2: Potential Realignment Options at Erickson Creek
Figure 3: Material Site APE

Office of History and Archaeology Coversheet
Report: *"Cultural Resources Survey of Dalton Highway MP 11-18 Rehabilitation Project, Interior Alaska"* prepared by Northern Land Use Research, Inc.
NLUR Addendum to Full Report

cc w/o enclosures:

Sarah Riddle, P.E., DOT&PF Northern Region, Project Manager
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CULTURAL RESOURCES SURVEY OF DALTON HIGHWAY MP 11 – 18 REHABILITATION PROJECT, INTERIOR ALASKA

DOT&PF Project No. 62196

Report prepared for:
Alaska Department of Transportation & Public Facilities
Northern Region
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Fairbanks, Alaska 99709

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September 2009

CONFIDENTIALITY NOTICE

The locations of cultural resources given in this report are provided to facilitate environmental and engineering planning efforts only. Under the provisions of the Archaeological Resources Protection Act and the National Historic Preservation Act, site location information is confidential; disclosure of such information is exempt from requests under Federal and State freedom of information laws. This report is not a public document. It is intended for release to DOT&PF, SHPO and appropriate permitting agencies only.

EXECUTIVE SUMMARY

The Alaska Department of Transportation & Public Facilities retained the services of Northern Land Use Research (NLUR) to complete a cultural resource survey, inventory, and assessment in the Area of Potential Effect (APE) for the proposed Dalton Highway MP 11 – 18 rehabilitation project (DOT&PF Project No. 62196). The 474-acre APE, as defined on maps provided to NLUR from DOT&PF, includes a typically 300-foot-wide (150 feet each side of center) corridor centered on the existing Dalton Highway between MP 11 and 18, and a 200-acre material site situated roughly 0.5 mile north of the road corridor near MP 18. NLUR surveyed the APE on July 9, 10, and 11, 2008. The survey included pedestrian transects and limited subsurface testing. No previously undocumented historic properties were identified as a result of the survey. NLUR recommends a finding of "No Historic Properties Affected" for the Dalton Highway project.

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1.0 INTRODUCTION

1.1 Project Background

The Alaska Department of Transportation & Public Facilities Northern Region (DOT&PF) retained Northern Land Use Research (NLUR) to complete a cultural resource identification survey of the Area of Potential Effect (APE) for the proposed Dalton Highway MP 11 – 18 rehabilitation project (DOT&PF Project No. 62196).

Because the project involves federal funding via the Federal Highway Administration (FHWA), it is officially an undertaking as defined under Section 106 of the National Historic Preservation Act [NHPA 16 USC 470 and its implementing regulations (36 CFR 800)]. Federal regulations require that the lead federal agency consider the project's potential to adversely affect cultural resources. This is, in part, accomplished through a process of identifying and evaluating cultural resources for nomination to the National Register of Historic Places (NRHP). Eligibility status is a key management concept as NRHP-eligible sites may require additional consideration, such as mitigation, prior to project commencement.

DOT&PF proposes to upgrade the Dalton Highway from milepost (MP) 11 to MP18 to current standards. This section of the road was constructed in 1969-1970 to serve as an access road for constructing the Trans-Alaska Pipeline. It has several substandard curves and steep grades with an undulating profile. The upgrade will include horizontal and vertical alignments and roadway width. The work will also include asphaltic surfacing. The APE, as defined on figures supplied by DOT&PF, includes a typically 300-foot-wide (150 feet each side of center) corridor centered on the existing Dalton Highway between MP 11 and 18. The corridor width varies in some places, with a maximum extent of 600 feet in width, and shifts from being centered along the existing highway, because there are curves that will be re-aligned. The total right-of-way APE is 274 acres. The project APE also includes a 200-acre material site roughly ½ mile north of the road corridor near MP 18 for a total surveyed acreage of 474 acres. The project is in the Livengood C-4 and C-5 quadrangles, Township 9 North, Range 8 West, Sections 1 and 12; Township 9 North, Range 7 West, Sections 7, 17, 19, 20, 25, 26, 27, 28, 29, 30, 35, and 36, Fairbanks Meridian (Figure 1).

NLUR archaeologists Molly Proue, M.A., R.P.A., and Heather Hardy, M.A., surveyed the road corridor and material site on July 9, 10, and 11, 2008. This report presents a cultural background for the project area and the results of the survey. No new or previously recorded historic properties (includes historic and prehistoric sites) were identified during the survey.

1.2 Project Setting and Environment

The project area is located within the Yukon-Tanana Uplands physiographic province (Wahrhaftig 1965). The APE lies approximately 100 road miles (160 km) northeast of

Fairbanks. The community of Livengood is approximately 11 miles southeast of the APE near the junction of the Dalton and Elliot Highways (Figure 1). As of 2007, the estimated population of Livengood was 17 (ADCRA 2008). The project area lies within the traditional lands of interior Athabascans.

The Yukon-Tanana Uplands are characterized by rounded, even-topped ridges with gentle side slopes ranging from 1,500 to 3,000 feet in elevation above sea level (fasl), flat, alluvium floored valleys. The underlying bedrock is composed of Paleozoic cherts and limestones (Cobb 1973). The area has never been glaciated, and contains discontinuous permafrost (Cobb 1973). Surface deposits include stream terraces covered with gravel and other finer alluvial sediments, and loess (Cobb 1973). Placer gold in the creeks and benches is probably derived from quartz veins and altered mafic greenstone (Cobb 1973). The climate of the region is cold and continental, with summer temperatures ranging from 50ºF to 70ºF and winter temperatures between –6ºF and –21ºF (ADCRA 2008).

The vegetation in the area consists of a spruce-hardwood forest. White spruce, birch, and aspen are located in the valley bottoms and well-drained areas, while black spruce populate north-facing slopes and poorly-drained areas. The underbrush consists primarily of mosses and grasses in the fairly well-drained areas and tussocks and sphagnum moss in the areas of higher moisture. Above treeline, vegetation is dominated by alpine tundra (Selkregg 1974). Animal species present within the area include moose, black and brown bear, and wolf (Betts 1997; Selkregg 1974). Caribou were known to utilize this area in the earlier 20th century and may be beginning to come back into the area (Betts 1997; L'Ecuyer 1997). Other animals present in the region include numerous small mammals and furbearers, waterfowl, willow grouse and several species of fish, including salmon.

2.0 SURVEY METHODS

The primary objectives of the 2008 Dalton Highway field survey are to comply with legal and regulatory mandates, especially Section 106 of the NHPA (as amended 2000) and 36 CFR 800 (as amended 2004) which aim to maximize the identification and evaluation of cultural resources within a project's APE. Methods involved standard archaeological procedures for a project of this nature, including background literature review and field survey. Staff archaeologist Molly Proue, M.A., R.P.A., and archaeological technician Heather Hardy, M.A., conducted the field survey between July 9 and July 11, 2008.

Prior to conducting fieldwork, available sources of information pertaining to the cultural resources of the project area were examined. Published and unpublished sources in the extensive files and library of NLUR formed the primary source of information, and the Alaska Heritage Resource Survey (AHRS 2008) files were also consulted. Survey documentation included standard archaeological field data observations, photographic coverage, and surficial soil/sediment observations. Field survey methods consisted of pedestrian transects, spaced 30 meters apart, by two archaeologists walking over the highway right of way and the proposed material source area. Shapefiles of the material site and proposed ROW APE were provided by ADOT and were uploaded onto a Garmin

GPSmap 76Cx unit for use in the field. Discretionary subsurface testing was conducted in areas of the APE that exhibited a higher probability of site discovery. These areas are referred to as Testing Areas (TAs) and included the excavation of 50 x 50 cm shovel test pits (TPs).

GPS protocols are derived from NLUR's standard procedures, and include specific documentation of the survey area, subsurface testing areas, and site recording. This survey meets the Alaska State Historic Preservation Officer's (SHPO's) definition of "Evaluation Phase" survey (OHA 2000), Historic Preservation Series 11, and the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. No previously unknown cultural resources were located during the present survey.

3.0 CULTURAL SETTING

3.1 Cultural Chronology[1] of Interior Alaska[2]

Interior Alaska regional prehistory is often divided into three broad archaeological culture traditions: the American Paleoarctic Tradition, Northern Archaic Tradition, and Athabascan Tradition. These traditions are general designations for Interior Alaskan prehistoric cultures with recognizable differences in technologies and times of occurrence (see Bacon 1987; Cook 1968; Dixon 1985; Mason et al. 2001, West 1967, 1975, 1996). Archaeological research in Interior Alaska indicates that humans have inhabited the Tanana River Basin, a major tributary of the Yukon River, for over 14,000 calendar years (12,000 radiocarbon years), making the interior of Alaska an important region with some of the earliest dated sites in the Americas. Additionally, the relatively recent introduction of Euroamericans into Interior Alaska provides some of the latest dates for proto-historic sites.

3.1.1 American Paleoarctic Tradition (12,000 to 7,000 radiocarbon years ago)

The American Paleoarctic Tradition, as proposed by Anderson (1970), relates stone tool technologies observed from Alaskan sites to stone technologies from Northeast Eurasia (Rainey 1939). The Paleoarctic Tradition, as originally defined, described artifact types that included microblades, bifacial points, large bifacial cores and tools, burins made on flakes, endscrapers and other expedient tools including some made on macroblades. However, nearly contemporaneous with the Paleoarctic Tradition is the tradition termed Paleoindian, which is characterized by large well-made lanceolate projectile points, both fluted and unfluted (Reanier 1995). Such lithic artifacts have been found not only in Canada and the contiguous United States, but also in a number of localities in northern Alaska including the Koyukuk drainage near the obsidian source of Batza Tena (Clark

[1] Radiocarbon age estimates that are uncalibrated are referred to as radiocarbon years or BP (before present); calibrated radiocarbon age estimates are referred to as cal BP, calendar years or calibrated years before present based on calibration curve IntCal04 (Reimer et al. 2004).

[2] This cultural chronology was adapted from previous NLUR reports; Reuther et al. (2007), Gelvin-Reymiller (2007) and Potter (2005a).

and McFadyen Clark 1983). Sites producing such materials were either undated or at best uncertainly dated. In the past two decades, however, work at the Paleoindian site at Mesa and Tuluaq Hill in the northern and western Brooks Range respectively have produced a suite of dates ranging from 11,700 years ago to 9,700 years ago (Kunz and Reanier 1996; Rasic 2000).

Among the complexes within the Paleoarctic Tradition that have been discussed in the past are the "Nenana Complex" (11,000 years ago) initially proposed by Powers and Hoffecker (1989) based on sites in the Nenana River Valley. Artifacts from this complex include large unifacial chopper-like artifacts and flake tools, and bifacially-worked projectile points or pointed-tools, but they lack microblades and microcores or burins. These sites were thought to be precursors to the "Denali Complex" which has a major focus on microblade technology. West (1967) defined the Denali Complex (10,500 to 8,000 years ago) based on sites near Donnelly Ridge that yielded microblades and microcores. Additionally, Cook termed sites with distinctive triangular bifacially worked points as "Chindadn" sites (11,000 to 10,000 years ago) from his work at Healy Lake (Cook 1968, 1975; Holmes and Cook 1999). Subsequent work at Tanana Valley sites such as Gerstle River (Potter 2005b) and Swan Point (Holmes et al. 1996) suggests defining a complex or time period based on the presence or absence of microblades has not proven useful.

Several sites in the Tanana Valley have preserved faunal material as well as extensive lithic artifact assemblages. The Broken Mammoth site yielded bones from ungulates (wapiti, bison, caribou, sheep, and moose), fox, wolf, hare, ground squirrel, other small rodents, waterfowl (duck, geese, and swan), and salmonid fish (Holmes 1996; Yesner 1996). Three worked mammoth ivory pieces found suggest that bone points were in use during the 11,800 to 11,200 year time period, and an eyed bone needle was recovered near a hearth dated at 10,300 radiocarbon years (Holmes 1996:313). At the Gerstle River site, multiple individuals of wapiti (elk) and bison were recovered in direct association with the features and lithic artifacts (Potter 2005b). Fewer sites have been located along the Yukon River undoubtedly due in part to the remoteness and expanse of this interior region. However, the obsidian from the Koyukuk River Batza Tena site has been identified from a number of Paleoarctic sites, which indicates that the use of the source and associated trading routes have considerable time depth (Clark and McFadyen Clark 1993).

3.1.2 Northern Archaic Tradition (6,000 to 2,000 radiocarbon years ago)

After a possible hiatus of dated interior sites from about 7,800 to 6,200 cal years BP, side-notched projectile point/biface forms begin to appear in Interior Alaska archaeological assemblages. Several archaeologists (e.g., Anderson 1968; Workman 1978) have identified these side-notched biface assemblages as part of the Northern Archaic Tradition. While some have argued that the broad occurrence of this point type throughout Interior Alaska and southwestern Yukon possibly represents the spread of a new boreal forest-oriented cultural tradition (Anderson 1968; Dixon 1985), the presence of numerous sites in tundra areas may negate this interpretation.

Some archaeologists question whether the possible diffusion of a trait or type represents an archaeological tradition (Cook and Gillispie 1986), and the continuity of microblade technology through this period (Potter 2004) suggests that the Paleoarctic and Northern Archaic Traditions may be related (c.f. Dixon's 1985 discussion of the Late Denali Complex). The relationship of the apparent gap in sites of radiocarbon ages between 7,800 and 6,200 cal BP and archaeological traditions is not well understood, and may be related to environmental factors not yet fully apparent (Mason et al. 2001). Notched points have been found at Bonanza Creek (Holmes 1971) and Pio Point (Dillingham 1994) in the Koyukuk drainage, several sites in the Livengood area to the east (Derry 1976), and at a number of sites along Tanana River drainages (Mobley 1996; Thorson and Bacon 1983).

Utilization of microblade and core, and burin technologies appears to continue into or side-by-side with the Northern Archaic Tradition, as does the production of lanceolate and other point forms. The continuation of microblade production has led some culture historians to suggest a later phase of a Denali Complex (Holmes 1978). The so-called "Late Denali Complex," as well as the Northern Archaic tradition, is poorly understood at this stage of research in Interior Alaska (e.g., Dixon 1985).

3.1.3 Athabascan Tradition (2,000 radiocarbon years ago to circa A.D. 1880)

At present, sites in Interior Alaska (south of the Brooks Range) dating to at least 2,000 years ago and up to AD 1880 are generally attributed to the Athabascan Tradition. Aspects of this tradition continue into the present, but, in its archaeological denotation, refer to the archaeological culture. Early prehistoric Athabascan sites are characterized by subsurface housepit and cache features associated with a variety of flaked and ground stone, bone, wood, bark, and antler artifacts. Athabascan Tradition sites that have been excavated in Alaska's interior are not numerous; recent testing in an early historic house depression near Tok indicates that change through time within the Athabascan Tradition is an increased use of expedient tools, a factor that may contribute to the often cited visibility problem of Athabascan assemblages (Sheppard 2001). Sites with material culture with organic as well as lithic artifacts include Lake Minchumina (Holmes 1986), Eagle (Andrews 1987), the upper Tanana site of Dixthada (Shinkwin 1979), and Kayak, Lake Creek and Okak sites on the Koyukuk River (McFadyen Clark 1996). The Athabascan component at Swan Point contains pecked and ground stone artifacts as well as flaked stone tools including straight-based lanceolate bifaces and microblades (Holmes et al. 1996).

Faunal materials found at Athabascan tradition sites include a broad spectrum of interior wildlife. Rainey (1939:365) identified moose, caribou, beaver, hare, small rodents, fish, bird faunal materials, and freshwater mussel shells from Dixthada. The Old Fish Camp site on the Khotol River also yielded freshwater mussels (Ream 1986). Plaskett (1977:123) adds black bear, Dall sheep, and marmot from the Nenana Gorge encampment to the list. Sites along the Yukon, Koyukuk, and Kaiyuh Flats often have depressions as features, vestiges of cache pits for keeping fish and other foods. The

Kayak and Okak sites contained fish remains as well as bird and large and small mammals (McFadyen Clark 1996).

Proto-historic (or late prehistoric) Athabascan sites include artifact assemblages dominated by Native-made items with a small amount of non-Native trade goods (e.g., iron and glass beads). These goods were obtained through trade with other Alaska Native groups, and are datable to the Hudson's Bay Company and Russian American Company fur trade, as well as prospector and missionary influence along the Yukon River (AD 1740-1850) (McFadyen Clark 1981; VanStone and Goddard 1981). Aboriginal trade centers between Inupiaq, Yupik, and Athabascans, many in Koyukon territory, were at localities now known as Nulato, Kateel, Nuklukayet, Alatna, Nohoolchintna, Hughes, the head of the Buckland River, and on the coast at Unalakleet. Interior people had indirect contact with Russian, French, and Euroamerican traders through intermediary groups on the coast of Alaska, or through upper Yukon trading affiliations. Koyukon were known to travel to the north coast near Barrow, as well as to Belle Isle near Eagle on the Yukon River to trade (Andrews 1975), though apparently their preferred trading partners were Kobuk and Nunamiut Iñupiaq (McFadyen Clark 1981). Proto-historic and historic Athabascan sites reflect these trading practices, and generally have a mixture of log cabin and house pit dwellings affiliated with a greater percentage of Euroamerican artifacts, and possible changes in site location in order to obtain these goods.

Known interior Athabascan sites are commonly located near lakes, streams, and rivers since these water bodies were rich in food resources, and were also used as transportation systems. Fish wheels were introduced in 1910; prior to that time, people drifted and dipped for fish with nets, or placed traps in tributaries (Andrews 1977). Peripheral to the interior of Alaska, the undated Kavik materials from Anaktuvuk Pass (Campbell 1968) are thought by many to belong to the Athabascan tradition and similar material has been uncovered at the Atigun Site in the northern Brooks Range (Wilson 1978). The Itkillik Complex from Onion Portage on the Kobuk River dating to about 1,400 years ago is also thought to belong to this tradition (Anderson 1988).

3.2 Ethnohistory, Exploration and History of the Yukon-Tanana Uplands[3]

The pre-contact lifestyle of the Athabascans of interior Alaska was seasonally nomadic and emphasized upland caribou hunting in the fall and fishing in the summer. Bands utilized large, well-defined territories centered near clear water tributaries of the major rivers (Hosley 1981:546; McFayden Clark 1981:585). While most lands were "communally owned," some resources such as fishing spots, berry patches, and traplines, were considered the exclusive property of particular families and were used year after year. Actual seasonal rounds varied with availability of resources and were characterized by flexible group size and multiple concurrent resource exploitation (Olson 1981:704).

[3] This sub-section incorporates the previous NLUR work of Betts (1997), Kriz (2004), Potter et al. (2002), Stern et al. (2008), and Williams (1997).

Trade networks were complex and far-reaching, and predate European trade by centuries. They were maintained primarily by travel along the river highways and trails that utilized passes near the coast (Betts 1997:12; Hosley 1981:546). Native trade systems brought native goods from coastal Eskimos, Aleuts, and even further south (e.g. dentalia), as well as goods from Asia and Europe, long before direct contact (Betts 1997:11; McFayden Clark 1981:595; Whymper 1868:183). The trade center nearest the project area was Nuklukayet located at the confluence of the Yukon and Tanana rivers. Dog traction was adopted later based upon Eskimo or Euroamerican use and adapted to existing hunting strategies (Hosley 1981:549; Petroff 1880:258; Schwatka 1885:94).

Small settlements were occupied during the dark days of winter when little activity was possible (Cantwell 1904:222). This was usually a time of social ceremonies and dances (Andrews 1977:64), while trading would be carried out in late winter when the light began to return (Betts 1997:11). These winter settlements were situated along fresh water streams away from the main rivers (Allen 1900:477). Froelich Rainey (1939:371) observed on the Tanana River that the larger the tributary stream, the further up from the mouth the settlement was located. Winter houses were semi-subterranean split-pole structures with moss, bark and sod roofs, central hearths, and long entrance tunnels (Andrews 1977). A similar pole and bark structure was used as a semi-permanent summer dwelling, but was not dug into the ground. The roof and walls were filled in by arched poles and covered with moss, twigs, and bark (Andrews 1977:66-67). Skin tents, windbreaks, and snow houses were built for temporary shelters. Caches included pits and elevated pole gable-roofed rooms (Andrews 1977:66). During the 20th century, bands and families at the mouth of Baker Creek, the Kantishna River, the Tolovana River, and the Cosna River dispersed to Old Minto, Nenana, Tanana and Manley Hot Springs.

Along the Yukon River, a non-Native presence was established as early as 1833 with the establishment of a Russian trading post at Nulato (Van Stone 1974). In 1847, a Hudson's Bay post was established at Fort Yukon. Russian and British traders participated in Indian trade fairs at the confluence of the Yukon and Tanana rivers (Nuklukayet; Stuck 1917:99. 136; Webb 1985:44-45). A permanent trading post was established at Nuklukayet by 1869 and first operated by the Pioneer Company and then by the Alaska Commercial Company (ACC; Webb 1985:56). In 1873, the trading post was renamed Tanana Station remained a central location for upper river trading until the establishment of a post at Rampart around 1890 began to draw trade away from the older post (John 1986:18; McKennan 1981:567; Webb 1985:61).

In contrast, very few Euroamerican explorations and settlements were conducted or established along the Tanana River during the late 1800s. The first American government expedition reporting something of lower Tanana Natives was that of Whymper and Dall in 1867 (cited in Olson 1968:119-120). A trading post near Harper's Bend a few miles downriver from Cos Jacket had been built in the 1870s by Harper as the first trading post in the area, but it was not long-lived and was abandoned prior to the government explorations. In 1885, Lieutenant Henry Allen mapped the river, making it more accessible for future travelers. Allen reported a Native campsite at the mouth of the Kantishna River, and another large but temporary camp of 75 inhabitants two miles

downriver from the mouth of the Kantishna (Allen 1985:71). Lieutenant Joseph Castner and party came three years later, reporting little, however, of the inhabitants of the lower section of the Tanana (Woodman 1984:58). The Native village of Cos Jacket (Crossjacket) at the mouth of the Cosna River was recorded by Lieutenant Frederick Schwatka in 1883, during a brief foray on the lower Tanana River along his Yukon River travels. All told, there was relatively little direct Euroamerican contact along the lower Tanana River until the turn of the century.

Gold extraction played a prominent role in the modern economic development and the increase of Euroamerican settlement of the Yukon-Tanana Upland region. Gold prospecting began on the local stream bars, such as Minook Creek that heads at Eureka Dome and drains north into the Yukon, as early as 1882 (Adney 1968:459; Cobb 1973:164). The initial finds of gold along Minook Creek were of fine-grained materials; coarser materials of a sufficient amount were not found until the 1890s. These discoveries along Minook led to a more permanent settlement of the Rampart area (Orth 1967:791).

At the turn of the century, the Manley Hot Springs/Eureka area was abruptly inundated with gold seekers. In 1899, gold was discovered on Eureka and Pioneer Creeks that head near Eureka Dome and drain south toward larger tributaries of the Tanana (Orth 1967:321). Within a few years, miners moving on from Rampart streamed into the hills north of Manley Hot Springs, and began mining on creeks such as those which became known as American, Sullivan, Woodchopper, and El Dorado (Dayo 1985:34).

In 1902 a mining prospector named John Karshner established a homestead at the hot springs (Orth 1967:619), later named Manley Hot Springs after mining developer Frank Manley built a resort hotel along Hot Springs Slough. Tolovana, also a station of the 1902-03 telegraph line at the confluence of the Tolovana and Tanana rivers, became an important trading post and roadhouse on the "Fairbanks Trail." The latter was initially a mail route from Fairbanks to Fort Gibbon (Holmes and Dale 1988:7). The road between Manley Hot Springs and Eureka was put through in 1908. Tofty developed as a mining community in 1908, and its connection to Hot Springs thereafter was also maintained by the Road Commission. The two-mile road connecting Hot Springs with a supply landing on the Tanana River was built in 1908 as well (Holmes and Dale 1988:7).

In 1914, N.R. Hudson and Jay Livengood located a deep placer paystreak along the upper Tolovana River. The following year a stampede ensued to the camp that was initially called "Brooks," but was known as Livengood by 1916 (Farmen n.d.). Gold seekers flocked to the area and the town flourished throughout the 1920s. The peak years of population and gold production at Livengood lasted from 1918 through 1922. Livengood itself had a population over 1,500 residents with over 5,000 people in the area which included Eureka and Manley Hot Springs. Regular weekly air service between Fairbanks and Livengood started in the 1920s although by then Livengood's heyday was over. The airfield fell into disuse by the late 1950s, shortly after the closure of the post office in October 1957 (Parker 2003:126). During construction of the TAPS pipeline in the mid-1970s, Livengood Construction camp, and an airstrip were built near West Fork (ibid).

As the drift mined gold-bearing gravels played out, mining required more capital and larger equipment. By 1938, Livengood Placers started to build a camp for the assembly of a dredge at Livengood. The Yuba dredge, weighing 1,000 tons with six cubic foot buckets required water to float in and operate. The Hess Creek dam and ditch formed a reservoir six and a half miles above Livengood Creek to transport water through a tunnel between the Yukon and Tolovana drainages. World War II delayed the start of the dredge operation until 1946. The underground (drift) methods left a frozen muck overburden that was "stripped," removed so that the lowermost frozen ground could be thawed, dredged, and the gold separated from the larger rocks and sand. The Livengood dredge was sold in 1955 and moved to the Hogatza River, a tributary of the Koyukuk River for operations there (Parker 2003:130-131).

3.2.1 History of the Dalton Highway

The Dalton Highway, from its junction with the Elliot Highway northward, was constructed during the late 1960s and early 1970s coincident with planning and construction of the Trans-Alaska Pipeline System (TAPS). The portion of the highway between Livengood and the Yukon River was approved by Congress in 1969 and constructed by TAPS in 1970 (Witcher 2001). The highway was originally known as the Haul Road, because it was used exclusively by commercial vehicles to transport materials needed for oil development to the North Slope. The highway was re-christened the Dalton Highway in 1981 by the State of Alaska in honor of James B. Dalton, an Alaskan arctic engineering expert involved in early oil exploration efforts on the North Slope (BLM 2008). The highway was opened to the public in 1981 as far as Disaster Creek at MP 211. In 1994, public access was extended all the way to Deadhorse (BLM 2008).

3.3 Previous Archaeological Research near the APE

There are no AHRS sites located within 1 mile of the project APE (AHRS 2008). Additionally, there are no historic trails located within 1 mile of the APE (ADNR 2004).

Systematic cultural resource surveys did not occur in the project area until the early 1970s in preparation for the construction of the Trans-Alaska Pipeline System, at which time a series of cultural resources surveys were conducted (e.g., Alexander et al. 1970; Cook 1970, 1971, 1976, and 1977; Holmes, 1971). These surveys were followed by background reports and field surveys completed by Aigner and Gannon (1981) along the route of a proposed natural gas pipeline between Delta Junction and Prudhoe Bay. In 2001, Northern Land Use Research surveyed east of the project area for a proposed natural gasline route (Potter et al. 2001, 2002).

Closer to the current project APE, a cultural resource survey was conducted by the Office of History and Archaeology during the mid-1980s (McMahan 1985). Charles E. Holmes and J. David McMahan, archaeologists with the Alaska Division of Geological and Geophysical Surveys, conducted a cultural resource survey of proposed realignments and material sources along the Dalton Highway between mileposts 9 and 28. Their work

included pedestrian survey along the highway between MP 9 and MP 11. They found no cultural resources other than recent roadside trash (McMahan 1985).

4.0 SURVEY RESULTS

NLUR staff archaeologist Molly Proue, M.A., R.P.A., and NLUR archaeological technician Heather Hardy, M.A., conducted the cultural resources survey of the proposed Dalton Highway material source and proposed highway ROW between July 9 and July 11, 2008. Specific survey results are provided below, subdivided between the material source and proposed right-of-way. No cultural resources were identified during subsurface testing or pedestrian survey.

4.1 Proposed Material Source at MP 19

The proposed material source is located north of the ROW APE, and is reached by an existing gravel access road extending west of the current alignment of the Dalton Highway into the gravel pit (Figures 2 and 3). An aerial photograph provided by DOT before fieldwork commenced showed an existing gravel pit within the southwest quadrant of the material source APE. When NLUR archaeologists arrived on the scene on July 9, they observed that the disturbed area (mined for gravel) was much more extensive than what had been depicted on the aerial photo (Figures 4 through 6). Approximately half of the APE has already been impacted by gravel mining. Signs of recent use, including modern trash dumps and campfire rings, characterized by aluminum beer cans and rotting food trash, were evident in the current gravel pit.

The APE is situated on a long ridge oriented roughly northwest/southeast. The entire top of this landform has already been removed for gravel. The remaining portions of the APE slope down from the disturbed area in all directions; the slope is very steep to the west of the APE, east of the APE portions are quite steep, and the slope is more gradual to the north and south. The entire APE was burned during the 2003 Erickson Creek fire. Due to the fire, visibility was excellent throughout the APE; in fact, because of the disturbed area's placement on high ground in conjunction with the effects of the fire, virtually the entire APE was visible when looking down from the edges of the gravel pit, in terms of shape and extent of the landform. The surface of the landform was not visible, due to the re-growth of low vegetation after the fire. NLUR archaeologists examined the stratigraphy in cuts exposed by gravel mining, and observed no cultural materials, before surveying the undisturbed portions of the APE; areas where the slope appeared greater than 45 degrees were not walked, as they could be more safely observed from adjacent transects due to the sparseness of vegetation. Extensive disturbance resulting from melting permafrost caused by the fire was observed throughout the APE, particularly on the southeastern slopes of the landform. Here, slumping ground, drunken trees, and thermokarsting were observed (Figure 7). There is a thin strip of unburned disturbance vegetation (young aspen, alder, fireweed and other small scrub plants) around the edges of the existing gravel pit (Figure 8). Vegetation further removed from the disturbed area

consists of burned black spruce with scattered birch and aspen, and an understory of fireweed, rosehips, cloudberries, Labrador tea, and cranberries (Figures 9 and 10).

Testing Area 1 (TA1) is located just north of the current extent of the gravel pit, situated so as to be removed from the disturbance but as near as possible to where the top of the landform would have been originally (Figure 11). Here, the slope is more gradual, roughly 0-15°, and two shovel test pits (TP1 and TP2) were placed on the flattest terrain. This area was considered moderate-to-low in potential for cultural resources, and two test pits were excavated. Vegetation consists of mixed forest with aspen, birch, black spruce, and alder. The understory is comprised of Labrador tea, moss, cranberry, rose hips, grasses, and blueberries. This area appears to have been minimally affected by the fire; only a few of the spruce trees here have been burned. Test pit stratigraphy generally consisted of 10 cm of rootmat, overlying 5 cm of dark brown silt, overlying 10 cm dark yellowish brown silt with angular and subangular gravels, downgrading to dense gravels (Figures 12 and 13). No cultural materials were encountered at this testing area.

Testing Area 2 (TA2) is located near the southern portion of the APE, north of the access road through the material site, and is situated on the small rise (on which the road passes) where the downward slope is still gradual (Figure 14). Vegetation is similar to that observed at TA1, only this area did not escape the ravages of the Erickson Creek fire. The area is set amidst burned black spruce, with an understory of Labrador tea, moss, cranberry, grasses, rose hips, cloudberries, and blueberries. Two shovel tests (TP3 and TP4) were excavated here. Stratigraphy generally consisted of 5-6 cm of rootmat, overlying 5-6 cm of dark yellowish brown silt with some gravels, giving way to yellowish brown frozen ground with a jello-like consistency (Figures 15 and 16). No cultural materials were encountered at this testing area.

Based on the extent of current disturbance, sloping topography without any well-defined points, and lack of proximal water sources, the material site APE appears low-to-nil in potential for cultural resources.

4.2 Proposed ROW from MP 11 – MP 18

A pedestrian survey was conducted of the entire proposed road ROW (Figures 2 and 17). The proposed ROW was surveyed by following shapefiles, uploaded to the GPS unit, supplied by DOT&PF that depicted the APE. On average, the proposed ROW was 300 feet wide and centered along the existing Dalton Highway. The width occasionally varied, with a maximum extent of 600 feet (300 feet on each side of the proposed centerline), and deviated from centering along the current highway, due to plans to realign road cuves. The total proposed ROW APE covers 274 acres. The existing highway right-of-way is an already disturbed corridor with very low archaeological potential. In addition to disturbance from road construction and maintenance, a fiberoptic line (built by KANAS Telecom) runs through the APE, switching between the east and west side of the road (Figures 18 and 19). The fiberoptic line is generally situated within the previously disturbed right-of-way, adding to the degree of disturbance rather than the width of disturbance. Vegetation along the APE changes slightly from the southern end to

the northern end, coincident with a gradual rise in elevation. In the southern portion of the APE, vegetation is primarily small, thick black spruce in muskeg (Figure 21). The central portion of the APE consists largely of mixed forest—black spruce and birch/aspen in the canopy with an understory of fireweed, rosehips, Labrador tea, grasses, willow, moss, and cranberry (Figures 22 and 23). The northern portion of the APE is dominated by black spruce with an occasional birch tree with an understory of moss, grasses, fireweed, rosehips, Labrador tea, and cranberry (Figure 24). Despite the lack of high-probability areas, four testing areas, with one shovel test pit each, were placed along the road corridor APE to demonstrate the typical soil and terrain in the proposed work areas (Figure 2).

Testing Area 3 (TA3) is located in the northern portion of the road APE, between MPs 17 and 18, west of the current road (Figure 25). Vegetation consists of black spruce with a few scattered birch trees and an understory comprised of fireweed, rosehips, Labrador tea, grasses, cloudberry, willow, moss, and cranberry. One shovel test pit (TP5) was excavated here. Stratigraphy consisted of 10 cm of rootmat, overlying 7 cm of moisture-laden black silt, overlying 6 centimeters of moisture-laden dark brown silt, gradating to frozen silt of the same color at 23 cmbs (Figure 26). No cultural materials were encountered at this testing area.

Testing Area 4 (TA4) is located just north of MP16, on the east side of the current road (Figure 27). Vegetation consists of black spruce, moss, Labrador tea, and fireweed. One shovel test pit (TP6) was excavated here, placed on terrain slightly higher than the surrounding area. Stratigraphy consisted of 20 cm of rootmat/thick moss, overlying 5-6 cm of dark yellowish brown silt with some gravels, giving way to yellowish brown frozen ground with a jello-like consistency at 24 cmbs (Figure 28). No cultural materials were encountered at this testing area.

Testing Area 5 (TA5) is located north of the current road between MPs 15 and 16 (Figure 29). Vegetation consists of burned black spruce with an understory of Labrador tea, moss, cranberry, grasses, rose hips, cloudberries, and blueberries. One shovel test pit (TP7) was excavated here. Stratigraphy consisted of 11 cm of rootmat, overlying 2 cm of very dark gray silt with some gravels, giving way to yellowish brown frozen ground with a jello-like consistency (Figure 30). No cultural materials were encountered at this testing area.

Testing Area 6 (TA6) is located south of the current road between MPs 13 and 14 (Figure 31). Vegetation consists primarily of birch with some black spruce. The understory is comprised of moss, Labrador tea, cranberries, and rosehips. One shovel test pit (TP8) was excavated here. The test pit was placed on ground sloping up and away from the current road. Stratigraphy consisted of 21 cm of rootmat, overlying 7 cm of black silt, giving way to black frozen ground at 28 cmbs (Figure 32). No cultural materials were encountered at this testing area.

South of MP 14, the APE drops in elevation and the vegetation gradates into black spruce bog, with wet muskeg. No test pits were excavated in this portion of the APE, due to the extremely wet ground conditions.

Signs of recent use were evident along the road corridor; modern trash was ubiquitous and included tire fragments, license plates, aluminum beer cans, plastic and Styrofoam food containers, clothing, and car parts. Additionally, one set trap was observed at the northern end of the APE, adjacent to a pull-off.

Much of the road APE passes through already disturbed ground due to road construction and maintenance activities and the installation of the Kanas fiberoptic line. Based on this disturbance, and the fact that the proposed ROW travels along monotonous terrain, the APE appears to be low in probability for cultural resources.

5.0 SUMMARY AND RECOMMENDATIONS

Based on the results of our field observations, no further archaeological work is recommended along the proposed road corridor and material site for consideration under Section 106 of the NHPA (16 USC 470), as amended (2000), and implementing regulations in 36 CFR 800 (revised 2004). No previously undocumented cultural resources were noted or discovered within the project APE, and NLUR recommends a finding of "**No Historic Properties Affected**" for the Dalton Highway improvements project.

In addition, no indications of burials or other human remains were observed within the surveyed area; therefore, barring an unforeseen discovery during the undertaking, there are no further historic property considerations expected. To complete the applicant's responsibility under the Section 106 process, the results of NLUR's findings should be forwarded to the Alaska SHPO, with a request for concurrence of "No Historic Properties Affected."

Because archaeological materials, features, and other potentially significant cultural remains are commonly buried, they may not be identifiable from the surface or revealed in limited subsurface sampling. Should indications of potentially significant cultural resources be encountered during ground-disturbing activities, all work in that area should cease until the discovery can be fully evaluated by a qualified archaeologist, and the Alaska SHPO notified. In the event that human remains or other indications of burials are found on federal or tribal lands during ground-disturbing activities, the protocol established under NAGPRA must be followed. Immediate steps should be taken to secure and protect the human remains and cultural items, including stabilization or covering, as appropriate. The Project Manager should immediately notify both the SHPO and the local Native American organizations likely to be culturally affiliated with the discovered remains.

The name and address of the SHPO is:

Judith Bittner
State Historic Preservation Officer
Alaska Department of Natural Resources
Office of History and Archaeology
550 West 7th Ave., Suite 1310
Anchorage, Alaska 99501-3565
(907) 269-8715 or 269-8720

5.1 Limitations

This project was carried out, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the

same or similar localities, at the time the work was performed. It is intended for the exclusive use of the Alaska Department of Transportation and Public Facilities for specific application to the referenced project. It should be noted that NLUR relied upon project information and/or verbal accounts provided by the agencies and individuals indicated in the report. NLUR can only relay this information and cannot be responsible for its accuracy or completeness. This report is not meant to represent a legal opinion.

We do not warrant that we have identified all potentially significant cultural resources present at the referenced properties, as these may be hidden in such a way that only extensive excavations, use of remote sensing equipment (e.g., ground penetrating radar, magnetometer), or other technologies/methods not included in our scope of work will reveal them. No other warranty, express or implied, is made. Any questions regarding our work and this report, the presentation of the information, and the interpretation of the data are welcome and should be referred to Project Archaeologist Molly Proue, NLUR Operations Manager Burr Neely, or NLUR Principal Archaeologist Peter Bowers.

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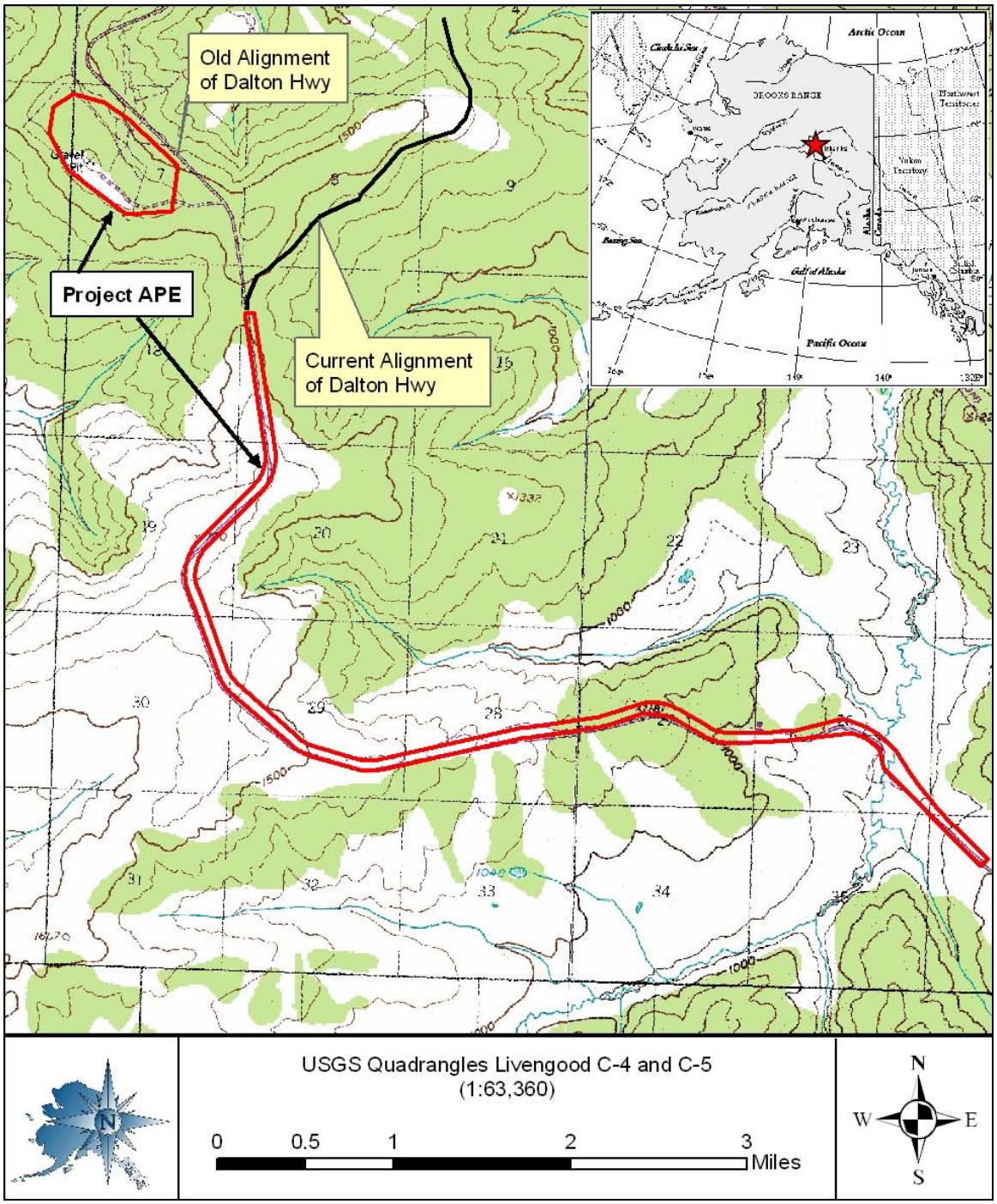

Figure 1. Project location overview map.

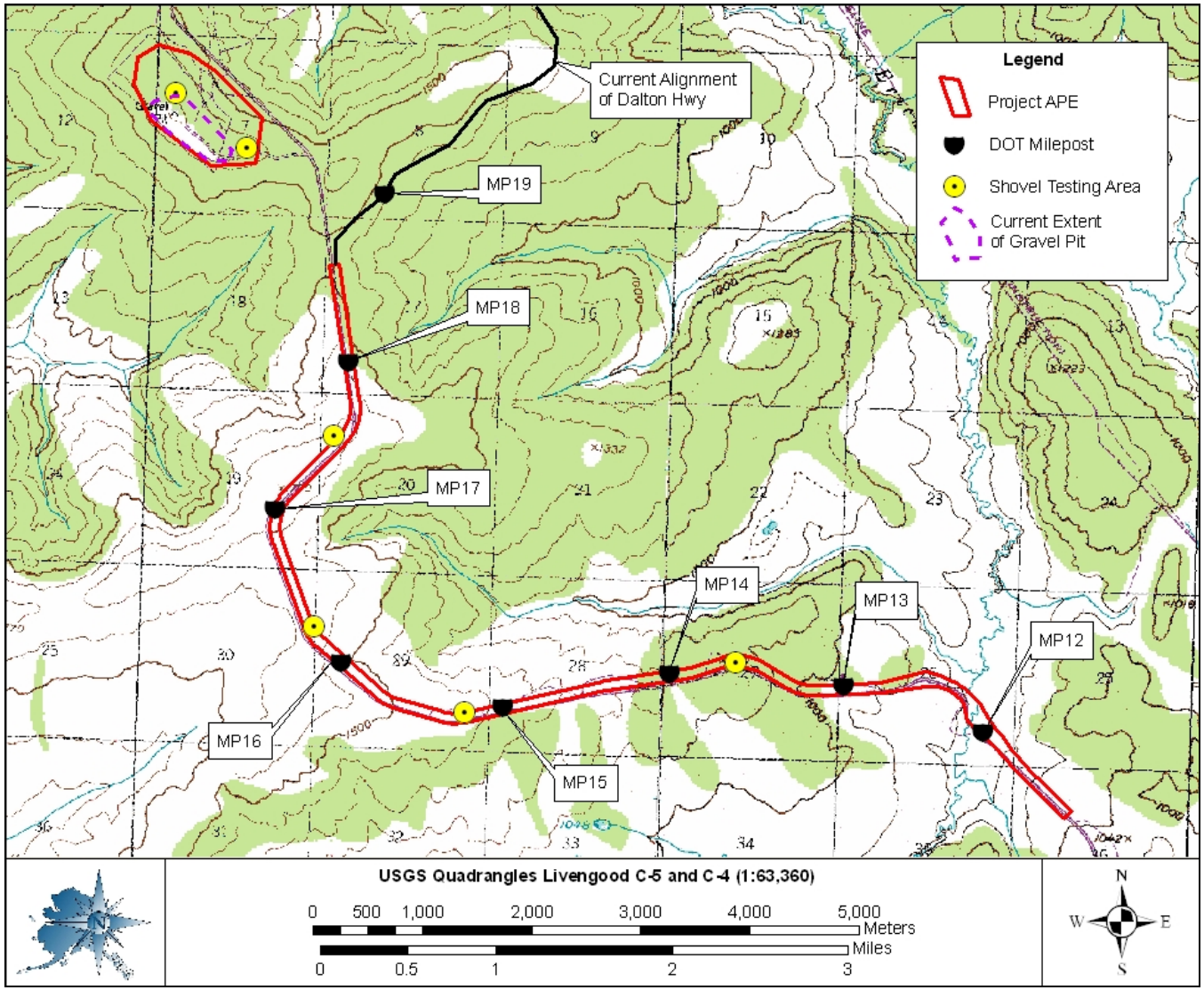

Figure 2. Project APE showing testing areas.

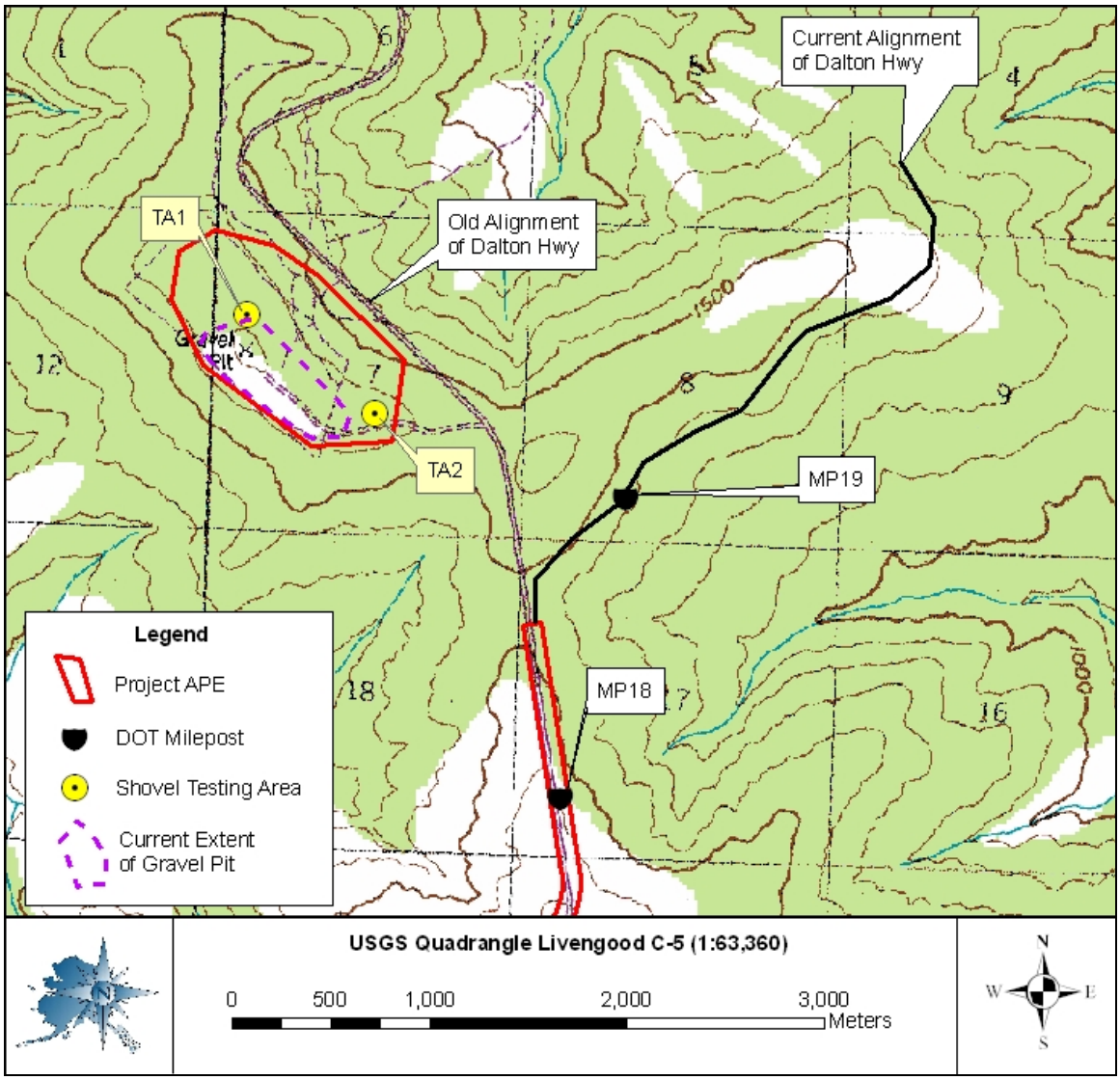

Figure 3. Material site overview.

Figure 4. Overview of material site disturbance, facing southeast (NLUR photo).

Figure 5. Overview of existing gravel pit and access road within material site, facing north west (NLUR photo).

Figure 6. Overview of existing gravel pit below access road, facing north (NLUR photo).

Figure 7. Slumping and drunken trees common in APE (NLUR photo).

Figure 8. Overview of new growth in material site disturbance, facing south (NLUR photo).

Figure 9. Overview of material site APE from the northeast edge, facing southeast (NLUR photo).

Figure 10. Overview of southern end of material site vegetation and slope, facing north (NLUR photo).

Figure 11. Overview of test area 1, facing south (NLUR photo).

Figure 12. Test area 1, test pit 1 west wall profile (NLUR photo).

Figure 13. Test area 1, test pit 2 north wall profile (NLUR photo).

Figure 14. Test area 2 overview, facing west (NLUR photo).

Figure 15. Test area 2, test pit 3 northwest wall profile (NLUR photo).

Figure 16. Test area 2, test pit 4 southeast wall profile (NLUR photo).

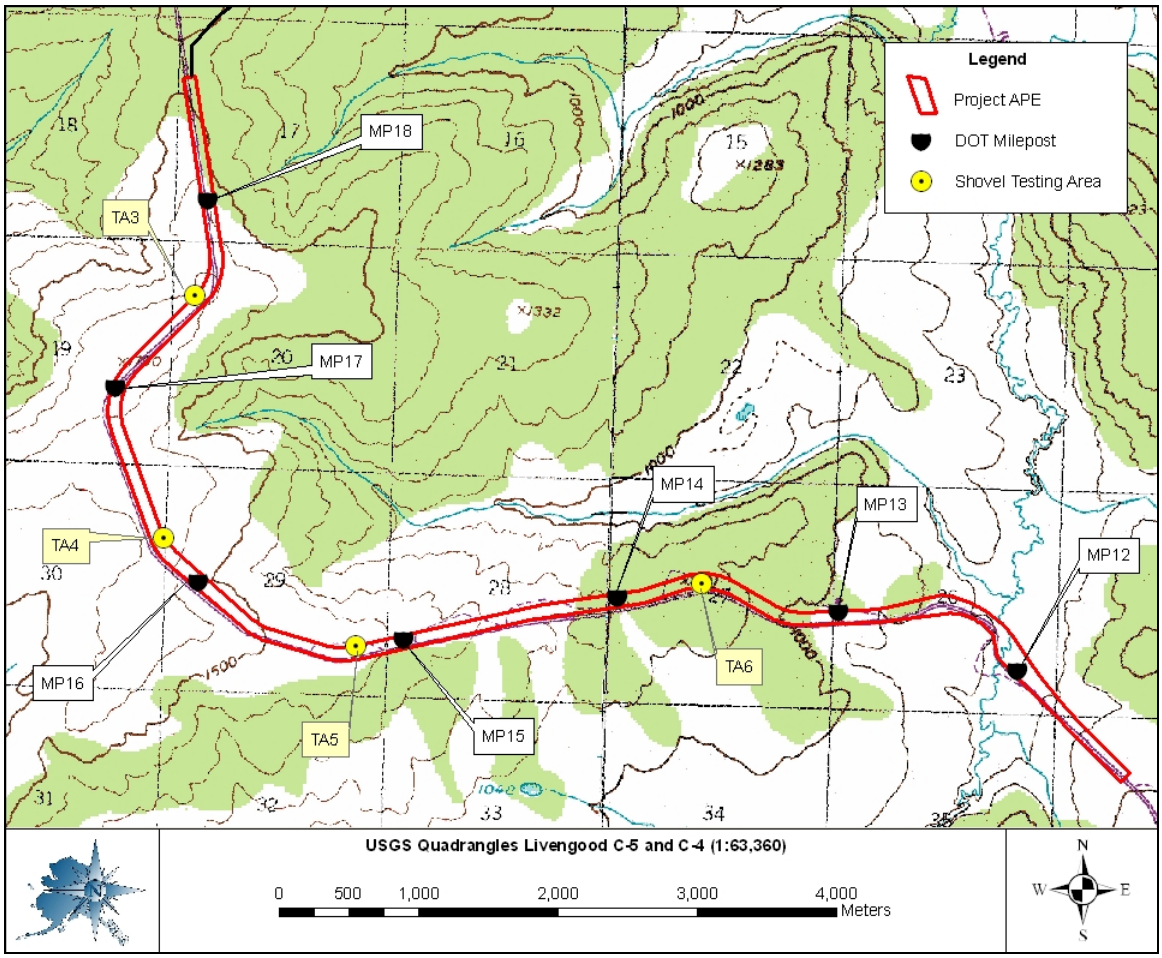

Figure 17. Road APE overview.

Figure 18. Kanas Telecom fiberoptic line marker (NLUR photo).

Figure 19. Overview of fiberoptic corridor disturbance, facing northwest (NLUR photo).

Figure 20. Disturbance vegetation along side of road corridor (NLUR photo).

Figure 21. Terrain overview at MP 12, showing vegetation typical in southern portion of APE, facing southeast (NLUR photo).

Figure 22. Overview of terrain at MP 14, showing vegetation typical in central portion of APE, facing north (NLUR photo).

Figure 23. Overview of mixed forest and fiber optic line disturbance, facing northwest (NLUR photo).

Figure 24. Terrain overview at northern end of APE, showing typical vegetation, facing west (NLUR photo).

Figure 25. Test area 3 overview, facing northeast (NLUR photo).

Figure 26. Test area 3, test pit 5 northeast wall profile (NLUR photo).

Figure 27. Test area 4 overview, facing north (NLUR photo).

Figure 28. Test area 4, test pit 6 north wall profile (NLUR photo).

Figure 29. Test area 5 overview, facing west (NLUR photo).

Figure 30. Test area 5, test pit 7 south wall profile (NLUR photo).

Figure 31. Test area 6 overview, facing west (NLUR photo).

Figure 32. Test area 6, test pit 8 east wall profile (NLUR photo).

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19 April 2010

Sarah E. Riddle, P.E.
Engineering Manager
Alaska Department of Transportation & Public Facilities, Northern Region
2301 Peger Road
Fairbanks, Alaska 99709

RE: Dalton Highway, MP 11-18 Cultural Resource Survey, Addendum to Full Report

Dear Ms. Riddle,

Northern Land Use Research, Inc. (NLUR) completed a cultural resource survey of the Alaska Department of Transportation and Public Facilities' (DOT&PF) proposed project area for the Dalton Highway MP 11-18 Improvements Project between July 9 and 11, 2008 (Proue et al. 2009). Much of the road APE passes through already disturbed ground due to road construction and maintenance activities and the installation of the Kanas fiberoptic line. Based on this disturbance, and the fact that the proposed ROW travels along monotonous terrain, the APE appears to be low in probability for cultural resources.

After field survey, DOT developed a proposed route alternative that deviates from the 2008 survey area (Figure 1). The alternative deviates from the surveyed APE for roughly 278 m (913 ft). During this deviation, the route is at most 13 m (44 ft) from the edge of the surveyed area.

In our field survey report, NLUR noted that "South of MP 14, the APE drops in elevation and the vegetation gradates into black spruce bog, with wet muskeg. No test pits were excavated in this portion of the APE, due to the extremely wet ground conditions" (Proue et al. 2009). The route alternate is situated just north of MP 12, in the area designated as black spruce bog with muskeg (Figure 2). Based on field observations in the immediate vicinity of the route alternate, this area appears low in potential for cultural resources.

It is possible, although we feel highly unlikely, that there could be deeply buried sites or sites hidden in such a way that only extensive field testing, remote sensing, or other technologies beyond our scope of work could reveal. Because archaeological materials, features, and other potentially significant cultural remains are commonly buried, they may not be identifiable from the surface or revealed in limited subsurface sampling. Should indications of potentially significant cultural resources be encountered during

ground-disturbing activities, all work in that area should cease until the discovery can be fully evaluated by a qualified archaeologist, and the Alaska SHPO notified. In the event that human remains or other indications of burials are found on federal or tribal lands during ground-disturbing activities, the protocol established under the Native American Graves Protection and Repatriation Act (NAGPRA) must be followed. Immediate steps should be taken to secure and protect the human remains and cultural items, including stabilization or covering, as appropriate. The Project Manager should immediately notify both the SHPO and the local Native American organizations likely to be culturally affiliated with the discovered remains.

Please do not hesitate to contact NLUR Project Archaeologist Molly Proue or Operations Manager Burr Neely if you have any questions.

Sincerely,

Molly Proue
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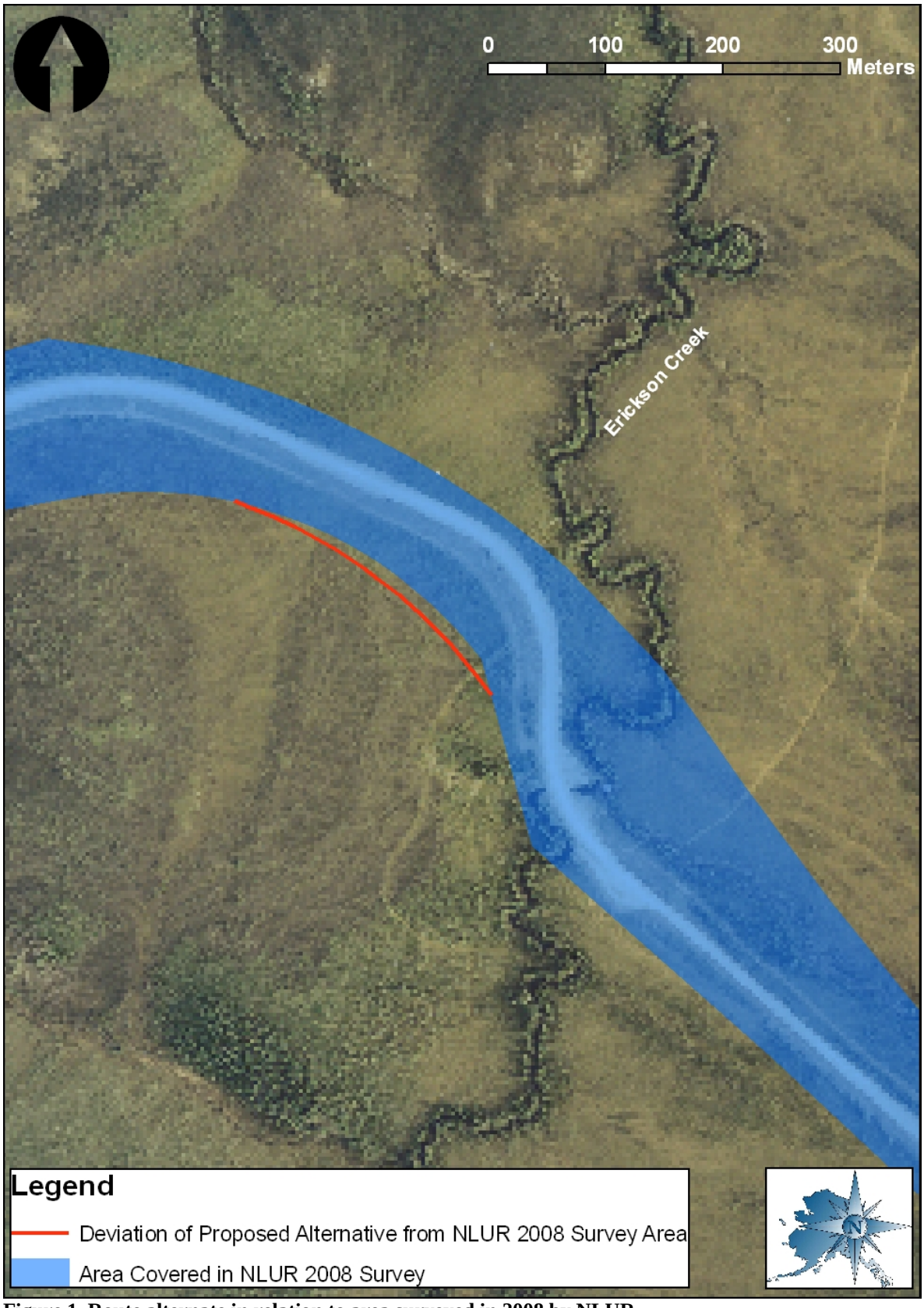

Figure 1. Route alternate in relation to area surveyed in 2008 by NLUR.

Figure 2. Typical vegetation in area of ROW alternative; photo taken roughly 200 m south of alternative (note: photo also shows KANAS fiberoptic line corridor), view south (NLUR photo).

APPENDIX C

WETLANDS ASSESSMENT

- WETLANDS ASSESSMENT AND PRELIMINARY JURISDICTIONAL DETERMINATION FOR THE DALTON HIGHWAY MP 11-18 RECONSTRUCTION PROJECT AREA, ALASKA (MAY 2010)
- HIGHWAY WETLANDS AVOIDANCE AND MINIMIZATION FORM

FINAL REPORT

WETLANDS ASSESSMENT AND PRELIMINARY JURISDICTIONAL DETERMINATION FOR THE DALTON HIGHWAY MP 11–18 RECONSTRUCTION PROJECT AREA, ALASKA

PREPARED FOR

ALASKA DEPT. OF TRANSPORTATION & PUBLIC FACILITIES
FAIRBANKS, ALASKA

UNDER CONTRACT TO

R&M CONSULTANTS, INC.
ANCHORAGE, ALASKA

PREPARED BY

ABR, INC.–ENVIRONMENTAL RESEARCH & SERVICES
FAIRBANKS, ALASKA

WETLANDS ASSESSMENT AND PRELIMINARY JURISDICTIONAL DETERMINATION FOR THE DALTON HIGHWAY MP 11–18 RECONSTRUCTION PROJECT AREA, ALASKA

FINAL REPORT

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May 2010

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INTRODUCTION

R&M Consultants, Inc. (R&M) contracted ABR, Inc.—Environmental Research & Services (ABR) to provide a wetlands determination in support of a NEPA Categorical Exclusion (CE) document being prepared for proposed improvements to the Dalton Highway (MP 11–18). The improvements include correcting foundation failures and settlement, road realignment, new culverts, and paving. The project area is located in Township 9N, Range 7W, Sections 17, 19, 20, 26 through 30, and 36, Fairbanks Meridian, USGS quadrangles Livengood C-4 and C-5. The study area is defined as a 300-foot corridor surrounding the road centerline, including two proposed realignments in the Erickson Creek area (362 acres) and expansion of an existing material site to the northwest (192 acres).

The study area is part of the Yukon–Tanana Lowlands of interior Alaska. The area is characterized by gently rolling terrain. Vegetation types are driven by aspect and permafrost, with black spruce communities common on north facing aspects and low permafrost-rich depressions, and southern exposures dominated by mixed forested uplands. The climate is continental with long, cold winters (mean = 5.9° F) and short, relatively mild summers (mean = 53.4° F). Annual precipitation is low (11.2 in), with about half falling as snow. Hilly terrain dominates with elevations ranging between 3000 and 6500 ft. Much of the study area was burned in the 2003 Erickson Creek fire (Figure 1).

METHODS

FIELD SURVEY

A field survey for the Dalton Hwy MP 11–18 wetlands determination was performed by ABR 19–22 September 2005. A total of 25 wetland determination plots were completed, using methods described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) (Appendix A1). An additional 7 verification points were completed, which are rapid site assessments to confirm site conditions are similar to those associated with wetland determinations in comparable areas. Personnel from the Alaska Department of Transportation & Public Facilities (DOT&PF), Northern Region, also completed a field survey of the study area

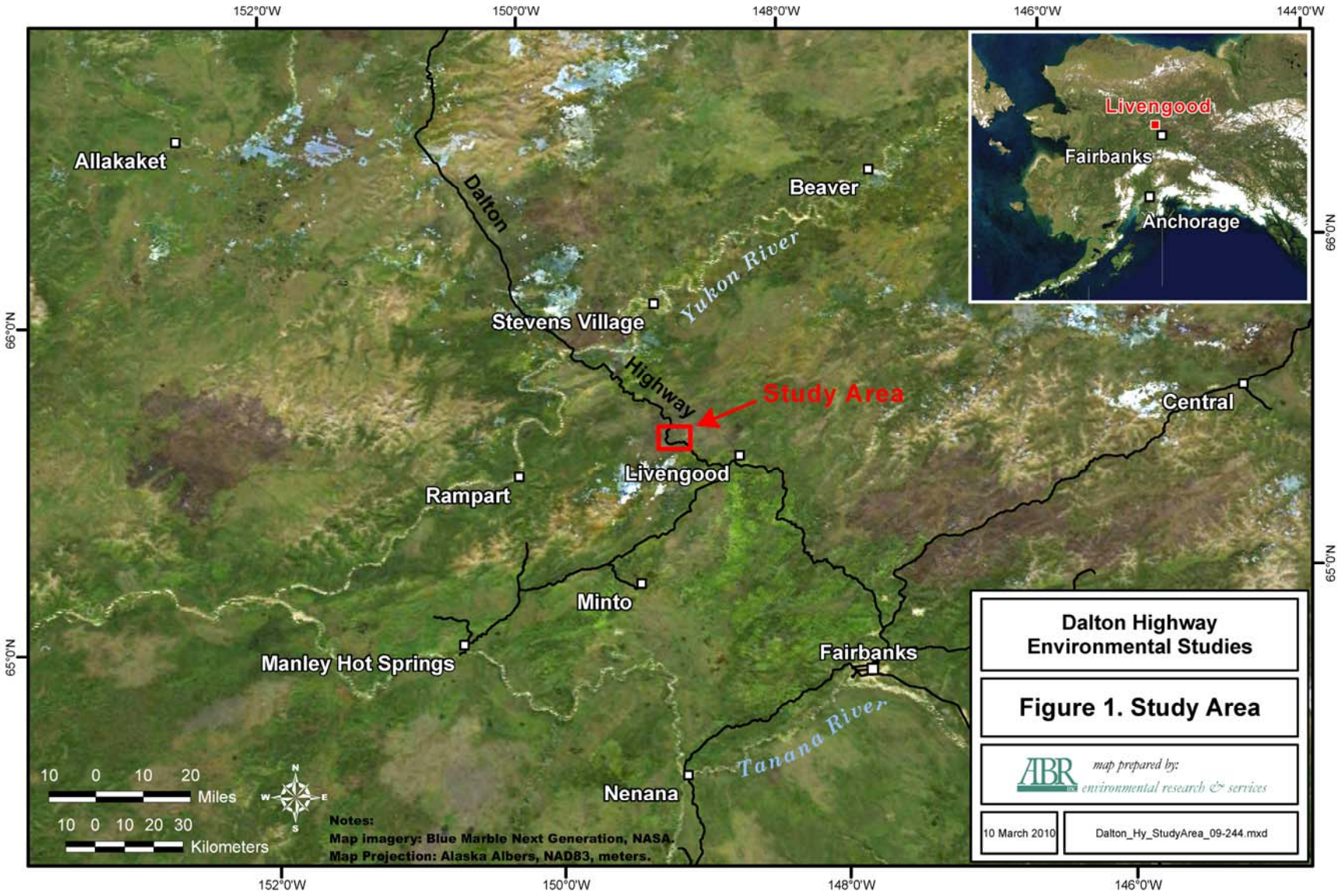

Figure 1. Location of Dalton Highway MP 11–18 reconstruction project area, Alaska, 2009.

15–16 August 2007. This field survey included 11 wetland determinations performed using methods described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region Version 2.0* (USACE 2007a). These data were used as supplementary information to the ABR survey and are included in Appendix A2.

At each field determination plot, dominant species were recorded, a soil pit was dug and hydrology and pedology were described. Ground and soil photographs were taken at each plot (Appendix B). The dominance of wetland vegetation was determined by visually estimating the ground cover (as percentages) of the dominant plant species (within each canopy layer) and determining the wetland indicator status of the plant species. Wetland plants were identified following the *Flora of Alaska and Neighboring Territories* (Hultén 1968) and the wetland indicator status was determined using the *National List of Plant Species that Occur in Wetlands: Alaska (Region A)* (Reed 1988). Indicators of hydric soil conditions include the presence of an organic soil at least 18 in thick (Histosol); an aquic or peraquic moisture regime; gleyed, low-chroma, and low-chroma mottled soils; and dark, vertical streaking of subsurface horizons by overlying organic matter (common in sandy hydric soils). Soil color was described using *Munsell Soil Color Charts* (2000). Wetland hydrologic indicators include the presence of standing water, soil saturation within 12 in of the surface, or evidence suggesting periods of past inundation, such as water marks, drift lines, surface-scoured areas, and surficial water-borne sediment deposits on vegetation or other land features.

CLASSIFICATION AND MAPPING

Wetland boundaries were delineated on-screen using *ArcGIS* software overlaid on high resolution (1.6 ft pixels) digital, black and white, satellite imagery obtained in September 2008 (Processed by Digital Globe). Each map polygon was classified and coded as a wetland type based on the dominant vegetation type and hydrology present and assigned a U.S. Fish & Wildlife National Wetland Inventory (NWI) wetland class following Cowardin et al. (1979). To assist the mapping effort, a 1979 NWI map (USFWS 2010) and color infrared (CIR) aerial photograph taken in 1986 (prior to the 2003 fire) also were used. After delineation of wetland boundaries, the areas (in acres) of wetlands and uplands were determined using *ArcGIS* software.

PRELIMINARY JURISDICTIONAL DETERMINATION

A preliminary wetlands jurisdictional determination (PJD) for the study area was completed using the *Approved JD Form* described in the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (USACE 2007b). The completed form is located in Appendix C of this report.

RESULTS AND DISCUSSION

WATERS OF THE U.S.

No navigable waters are present in the study area (Figures 2a–2h). Non-navigable waters include Erickson Creek (Upper Perennial River) and numerous Intermittent streams (2.65 acres, 0.5%). The road corridor generally follows a ridge line that empties into Erickson Creek to the east and Richardson Creek to the west. Both drainages are tributaries to Hess Creek, which flows north of the study area and empties into the navigable Yukon River (USACE 2010).

Erickson Creek (R3UBH, 1.59 acres) is a permanently flooded creek classified as a Relatively Permanent Water (RPW) based on its surface water connection to Hess Creek and the Yukon River downstream. The Intermittent streams (R4SBC) in the study area are generally small headwater streams that may be dry for a large portion of the year. No hydrology data were available for these streams, so they were classified and mapped based on the presence of culverts provided in a GIS layer from R&M and based on significant drainage channel features identified through aerial photo interpretation. Using these criteria, we determined the Intermittent streams were RPWs, with the assumption that the channels had continuous flow at least 3 months of the year.

WETLANDS

The 1977 NWI map prepared for the study area classified the majority of the area as Upland. While our plot density along the ridge line was limited, the data indicated that wetlands are more prevalent. Previous wetlands studies conducted in comparable areas within the Yukon-Tanana uplands have shown that sloping hillsides supporting black spruce communities often satisfied wetland criteria where soils were relatively poorly drained (ABR, Inc. 2000 and 2004). The fire that swept through the Dalton Highway study area in 2003 removed many of the black spruce stands that occurred, making it difficult to conclusively delineate precise wetland/upland

boundaries on the aerial photography. Thus, the burned areas we determined had previously supported black spruce stands were conservatively mapped as wetlands (Figures 2a–2h).

A small number of Permanently Flooded Excavated Ditches (PUBHx; 0.34 acres) was generally found in the vicinity of culverts where flow may be restricted during portions of the year (Figures 2a–2h).

The dominant wetland type in the study area is Saturated Emergent Meadow (PEM1B) (130.73 acres in material site, 60.43 acres in road corridor) (Figures 2a–2h, Table 1). This NWI class varies somewhat in species composition depending on landscape position. The lowland areas tend to be dominated by tussock cotton-grass (*Eriophorum vaginatum*) and low and dwarf shrubs such as mountain cranberry (*Vaccinium vitis-idaea*) and cloudberry (*Rubus chamaemorus*). Burned hillside plots are dominated by bluejoint grass (*Calamagrostis canadensis*), field horsetail (*Equisetum arvense*) and beauvered spiraea (*Spirea beauverdiana*). The plots classified as PEM1B are the most severely burned with almost 100% tree mortality; cover of standing dead spruce was up to 25%. Saturated Broadleaf Evergreen Scrub/Emergent Meadow (PSS3/EM1B) occurred mainly in the road corridor and was another class within the burned needleleaf forest. This community was similar to the PEM1B type, with up to 20% cover of standing dead spruce trees. Ericaceous shrubs in the understory, such as Labrador tea (*Ledum groenlandicum*), mountain cranberry and spiraea, were codominant with graminoids and forbs, such as bluejoint grass and woodland horsetail (*Equisetum sylvaticum*).

Less severely burned needleleaf forested wetlands with live trees still present fell into 6 NWI classes, including PSS1/4B, PSS3/4B, PSS4/1B, PSS4/3B, PFO4/EM1B, and PFO4/SS1B. They occurred in small patches along the road corridor comprising 96.8 acres in total (Figures 2a–2h, Table 1). The dominant needleleaf tree species was black spruce (*Picea mariana*) with typical boreal forest understory species including Labrador tea, bog blueberry (*Vaccinium uliginosum*) and mountain cranberry.

Saturated Broadleaf Deciduous Scrub (PSS1B) generally occupied disturbed surfaces associated with road construction activities or fire break clearing. Dominant species included Bebb willow (*Salix bebbiana*), grey-leaf willow (*S. glauca*), Scouler willow (*S. scouleriana*), green alder (*Alnus crispa*) and dwarf birch (*Betula nana*).

Table 1. Acreages of waters of the U.S., wetlands, and upland areas, within the Dalton Hwy MP 11–18 study area, Alaska. All waters and wetlands are considered jurisdictional, as they have a downstream connection with navigable waters (Yukon River).

NWI code	Description	Material Site	Road Corridor
Non-Navigable Waters of the U.S. (Section 404)			
R3UBH	Upper Perennial River		1.59
R4SBC	Intermittent Stream	0.06	0.99
	Total	**0.06**	**2.59**
Wetlands (Section 404)			
PUBHx	Permanently Flooded Excavated Ditch		0.34
PEM1B	Saturated Emergent Meadow	130.73	60.43
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub		13.02
PSS1B	Saturated Broadleaf Deciduous Scrub		27.75
PSS3/4B	Saturated Broadleaf Evergreen/Needleleaf Evergreen Scrub		65.19
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow	5.17	40.84
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub		9.51
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub		5.33
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow		0.87
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub	2.89	
	Total	**138.78**	**223.27**
	Total Wetlands	**138.84**	**225.86**
Uplands			
U	Upland	28.42	83.21
Us	Upland Fill	24.87	53.44
	Total Uplands	**53.29**	**136.65**
	Grand Total	**192.14**	**362.51**

Soils typically consisted of a relatively thin (3–6 in) organic horizon overlying a saturated silt loam. Histic epipedons may form in the low lying areas surrounding riverine drainages. Permafrost was recorded throughout the study area, with a depth of the active layer (thawed zone) ranging from 15–40 in.

UPLANDS

Vegetated Uplands (U; 28.42 acres in material site, 83.21 acres in road corridor) were primarily associated with higher elevation south facing slopes, riverbanks and disturbed areas bordering the road corridor. The plant communities consisted of undisturbed mixed forest and colonizing tall willow communities. Upland Fill (Us; 78.31 acres, 14.3%) included barren artificial surfaces associated with the existing road and material site (Figures 2a–2h, Table 1).

PRELIMINARY JURISDICTIONAL DETERMINATION

The results of the Clean Water Act (CWA) analysis (Appendix C) identified RPWs and wetlands directly abutting RPWs that connect indirectly to Traditional Navigable Waters (TNWs). The RPWs include Erickson Creek (perennial stream) and many seasonal streams draining adjacent wetlands. The wetlands are mainly forested or scrub wetlands with permafrost and all are connected to downslope annual streams via seasonal RPWs. No TNWs, non-RPWs, or isolated wetlands were identified in the study area.

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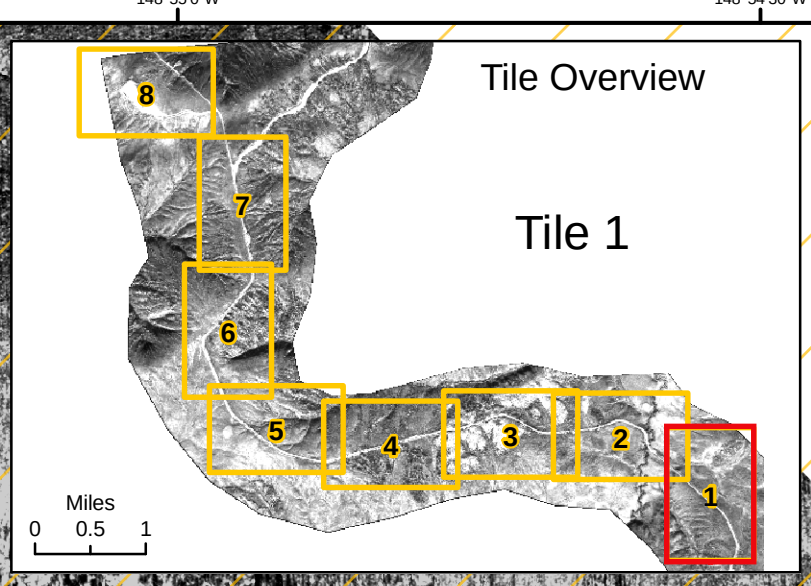
DHP-02
PSS3/4B
Us
PSS3/EM1B
DH-04
PSS3/4B
Us
PSS3/EM1B
U
MP11
DH-03
DHP-01
DH-02
DH-01
R4SBC
PSS3/4B
U
U
PSS3/EM1B



NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

Field Sample Plot
DOT Plots
Wetlands
Uplands
Wildfire Burn Scar

Dalton Highway Environmental Studies

Figure 2a. Wetland Types

ABR Inc. *map prepared by: environmental research & services*

5 May 2010

Dalton_Hy_Wetlands_Tile1_09-244.mxd

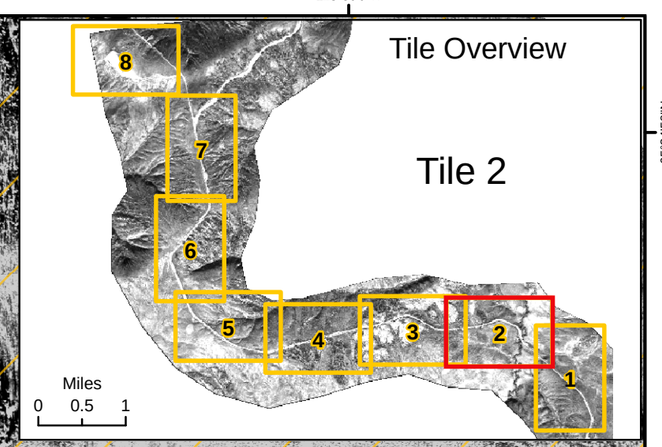
N W E S

200 0 200 400 600 Feet

Approximate Scale = 1:5,000

148°58'0"W 148°57'30"W 148°57'0"W 148°56'30"W 148°56'0"W

65°34'50"N 65°34'40"N 65°34'30"N 65°34'20"N



N
W E
S
200 0 200 400 600 Feet

Approximate Scale = 1:5,000

- Field Sample Plot
- DOT Plots
- Wetlands
- Uplands
- Wildfire Burn Scar

PSS3/4B PFO4/EM1B DH-13 DH-12 DH-14 PSS3/4B PUBHx R4SBC PSS4/3B PSS1B PSS4/1B PSS1B PSS3/4B DHP-03 DHP-04 MP13 PSS3/4B PSS4/3B PSS3/4B PSS3/4B PSS3/4B PEM1B PEM1B R4SBC PEM1B PSS4/3B R4SBC PEM1B PSS4/1B DH-11 R3UBH DH-09 DH-10 PEM1B R3UBH DH-08 DH-07 DH-21 PEM1B R3UBH R3UBH PSS1B DH-06 MP12 PSS3/4B PEM1B R3UBH PSS3/4B PEM1B PEM1B

U Us

NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

Dalton Highway Environmental Studies

Figure 2b. Wetland Types

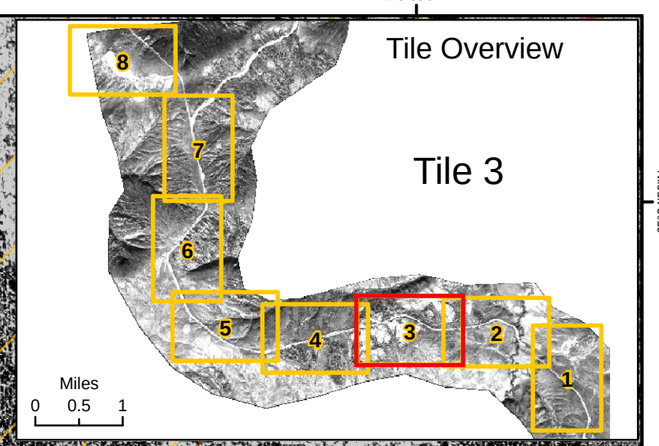
ABR Inc. *map prepared by: environmental research & services*

5 May 2010

Dalton_Hy_Wetlands_Tile2_09-244.mxd

149°0'0"W 148°59'30"W 148°59'0"W 148°58'30"W 148°58'0"W

65°34'50"N 65°34'40"N 65°34'30"N 65°34'20"N



DH-17 U Us DH-16 U DH-28 PSS3/EM1B PSS3/4B MP14 DHP-08 U U PSS3/4B PSS3/EM1B DHP-05 DH-15 R4SBC PSS4/3B PSS3/4B DHP-04 MP13 U U PSS4/3B PSS3/4B R4SBC PSS3/4B PEM1B PEM1B PSS4/3B

NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

Dalton Highway Environmental Studies

Figure 2c. Wetland Types

ABR, Inc. *map prepared by: environmental research & services*

5 May 2010 | Dalton_Hy_Wetlands_Tile3_09-244.mxd

N W E S

200 0 200 400 600 Feet

Approximate Scale = 1:5,000

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

- Field Sample Plot
- DOT Plots
- Wetlands
- Uplands
- Wildfire Burn Scar

NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

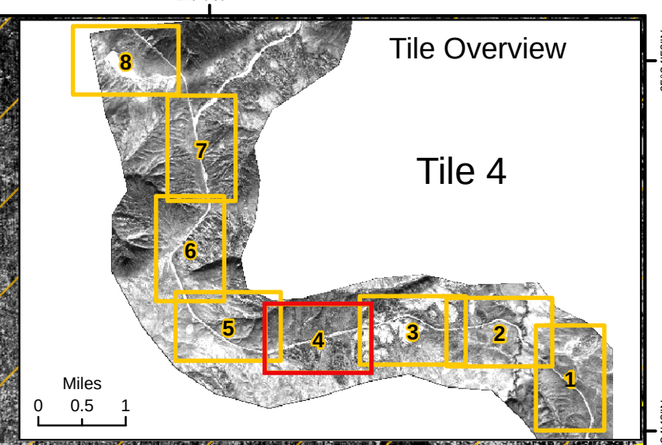
PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

149°2'30"W 149°2'0"W 149°1'30"W 149°1'0"W 149°0'30"W

65°34'50"N 65°34'40"N 65°34'30"N 65°34'20"N



PSS3/EM1B PSS4/3B PSS3/4B R4SBC U DH-28 DHP-08 5 4 MP15 PUBHx PEM1B PSS1B

Dalton Highway Environmental Studies

Figure 2d. Wetland Types

map prepared by: ABR, Inc. *environmental research & services*

5 May 2010

Dalton_Hy_Wetlands_Tile4_09-244.mxd

N W E S

200 0 200 400 600 Feet

Approximate Scale = 1:5,000

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

- Field Sample Plot
- DOT Plots
- Wetlands
- Uplands
- Wildfire Burn Scar

NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

Tile Overview

Tile 5

8 7 6 5 4 3 2 1

Miles
0 0.5 1

Field Sample Plot
DOT Plots
Wetlands
Uplands
Wildfire Burn Scar

Dalton Highway Environmental Studies

Figure 2e. Wetland Types

ABR Inc. *map prepared by: environmental research & services*

5 May 2010

Dalton_Hy_Wetlands_Tile5_09-244.mxd

N W E S

200 0 200 400 600 Feet

Approximate Scale = 1:5,000

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

MP16

149°4'30"W 149°4'0"W 149°3'30"W 149°3'0"W 149°2'30"W

65°35'0"N 65°34'50"N 65°34'40"N 65°34'30"N 65°34'20"N

149°5'0"W
149°4'30"W
149°4'0"W
65°35'50"N
65°35'40"N
65°35'30"N
65°35'20"N
65°35'10"N
65°35'0"N

Tile Overview

Tile 6

8
7
6
5
4
3
2
1

Miles
0 0.5 1

PSS3/EM1B
PSS1/4B
Us
PSS1B
PEM1B
PSS3/EM1B
PSS1/4B
U
DH-26
PSS1B
DH-27
PSS1B
PEM1B
PSS1B
MP17
2a
PSS3/4B
PSS1B
PSS3/EM1B
U
R4SBC
Us
PEM1B
U
PEM1B
U
3
PSS3/EM1B
PSS1/4B
PSS1/4B
R4SBC
U
PSS3/EM1B

Field Sample Plot
DOT Plots
Wetlands
Uplands
Wildfire Burn Scar

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

N
W E
S
200 0 200 400 600
Feet
Approximate Scale = 1:5,000

NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

Dalton Highway Environmental Studies

Figure 2f. Wetland Types

ABR, Inc. *map prepared by: environmental research & services*

5 May 2010

Dalton_Hy_Wetlands_Tile6_09-244.mxd

149°4'30"W
149°4'0"W
149°3'30"W
65°36'50"N
65°36'40"N
65°36'30"N
65°36'20"N
65°36'10"N
65°36'0"N

MP19
MP18
DHP-07
1a

U
Us
PSS3/EM1B
PSS4/3B
PSS1B
R4SBC
PSS3/4B
PEM1B

Tile Overview
Tile 7
8
7
6
5
4
3
2
1
Miles
0 0.5 1

Field Sample Plot
DOT Plots
Wetlands
Uplands
Wildfire Burn Scar

N
W E
S
200 0 200 400 600 Feet
Approximate Scale = 1:5,000

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

Dalton Highway Environmental Studies

Figure 2g. Wetland Types

ABR Inc. *map prepared by: environmental research & services*

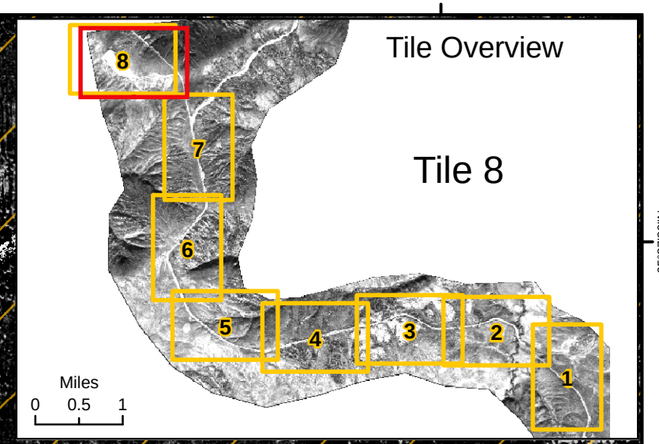
5 May 2010

Dalton_Hy_Wetlands_Tile7_09-244.mxd

149°6'30"W 149°6'0"W 149°5'30"W 149°5'0"W 149°4'30"W

65°37'30"N 65°37'20"N 65°37'10"N 65°37'0"N

PSS3/EM1B
PSS3/EM1B
PEM1B
PEM1B
PEM1B
PEM1B
R4SBC
U
Us
PFO4/SS1B
PSS3/EM1B
DH-22
DH-23
DH-24
DH-25
1
2



Field Sample Plot
DOT Plots
Wetlands
Uplands
Wildfire Burn Scar

Dalton Highway Environmental Studies

Figure 2h. Wetland Types

ABR Inc. *map prepared by: environmental research & services*

5 May 2010 | Dalton_Hy_Wetlands_Tile8_09-244.mxd

N W E S

200 0 200 400 600 Feet

Approximate Scale = 1:5,000

Notes:
Imagery acquired 11 September 2008
and processed by DigitalGlobe at 1.6-ft resolution.
Map projection: Alaska State Plane Zone 4, NAD83, feet.

NWI Code and Associated Wetlands Class[1]

Waters of the U.S. (Section 404)

Non-navigable Waters

R3UBH	Upper Perennial River
R4SBC	Intermittent Stream

Wetlands

PUBHx	Permanently Flooded Excavated Pond
PEM1B	Saturated Emergent Meadow
PSS1/4B	Saturated Broadleaf Deciduous/Needleleaf Evergreen Scrub
PSS1B	Saturated Broadleaf Deciduous Shrub
PSS3/4B	Saturated Broadleaf Evergreen/Needleaf Evergreen Scrub
PSS3/EM1B	Saturated Broadleaf Evergreen Scrub/Emergent Meadow
PSS4/1B	Saturated Needleleaf Evergreen/Broadleaf Deciduous Scrub
PSS4/3B	Saturated Needleleaf Evergreen/Broadleaf Evergreen Scrub
PFO4/EM1B	Saturated Needleleaf Evergreen Forest/Emergent Meadow
PFO4/SS1B	Saturated Needleleaf Evergreen Forest/Broadleaf Deciduous Scrub

U	Upland
Us	Upland (fill)

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979).

Appendix A-1a. ABR Wetland Determination Forms.

WETLAND DETERMINATION FORMS HAVE BEEN REMOVED FOR BREVITY. THEY ARE AVAILABLE UPON REQUEST

Appendix A-1b. ABR Field Verification Data Forms.

Plot ID	Cowardin	Date Completed	Investigators	Dominant Species/Veg Type	Field Notes
DHP01	Upland	9/19/2005	JER/TFM	Low open ericaceous shrub	Old fire break, disturbed strip next to DH01.
DHP02	PEM1B	9/19/2005	JER/TFM	Bluejoint shrub	Soils wet at surface, old clearing with fresh vehicle track disturbances
DHP03	R4SBC	9/19/2005	JER/TFM	Open spruce forest	Small creek crossing, channel 0.5m wide, not well incised.
DHP04	R4SBC	9/19/2005	JER/TFM	Open black spruce woodland	Small creek crossing, approximately 1m wide with no apparent riparian zone.
DHP05	Upland	9/19/2005	JER/TFM	Bluejoint shrub	Cleared trail, surrounded by upland types
DHP07	Upland	9/19/2005	JER/TFM	Tall closed willow	Disturbed plot located on mound of fill.
DHP08	Upland	9/19/2005	JER/TFM	Tall closed willow	Closed willow with scattered birch, site located on old fill, no permafrost.

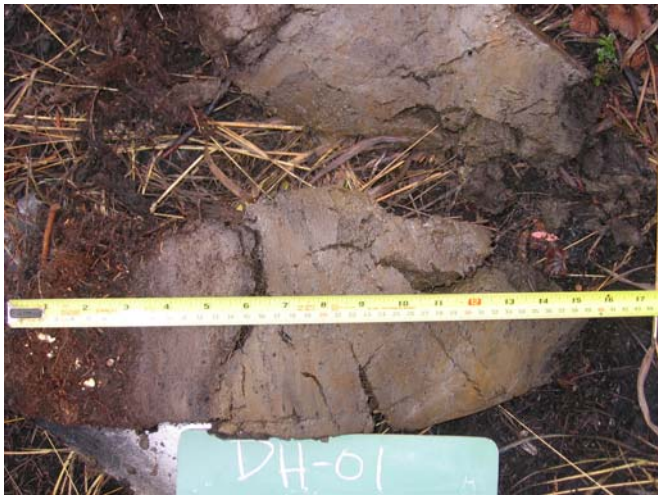
Appendix A-2. Department of Transportation Wetland Determination Data Forms.

WETLAND DETERMINATION FORMS HAVE BEEN REMOVED FOR BREVITY. THEY ARE AVAILABLE UPON REQUEST

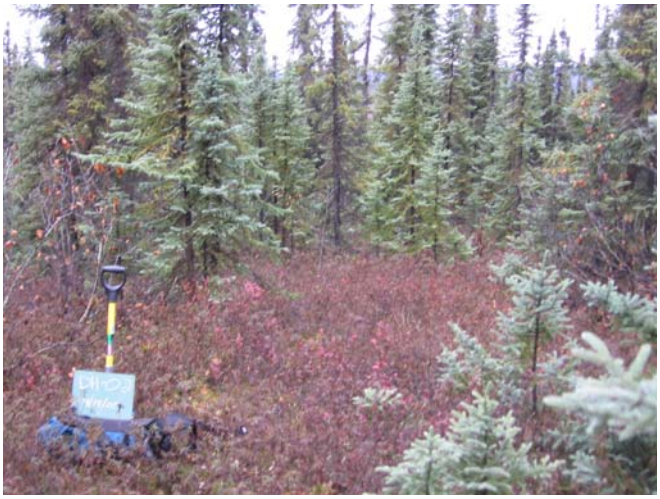
Appendix B. Site Photographs.

SITE PHOTOGRAPHS

DH01: Graminoid-Shrub Scrub (with Standing Dead)
NWI Class: PSS3/EM1B



Hydrology: Saturated at 9”
Soils: Shallow organics over silt loam



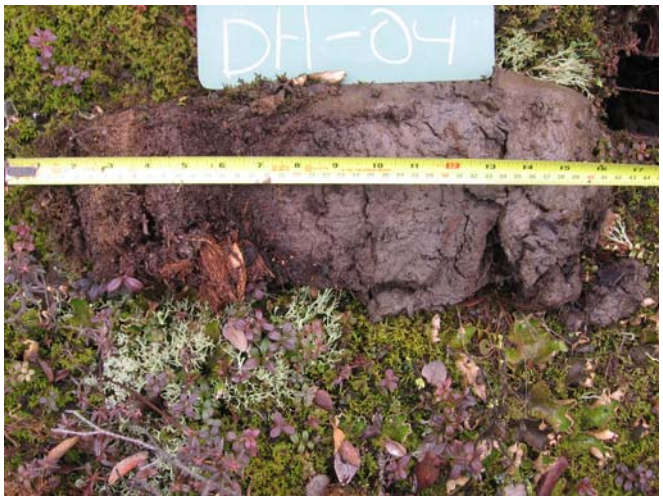
DH02: Needleleaf Forest
NWI Class: PSS3/4B

Hydrology: Saturated at 6”
Soils: Moderate organic layer over silt loam

DH03: Upland
NWI Class: U

Hydrology: Well-drained
Soils: Buried organic layers with silt loam

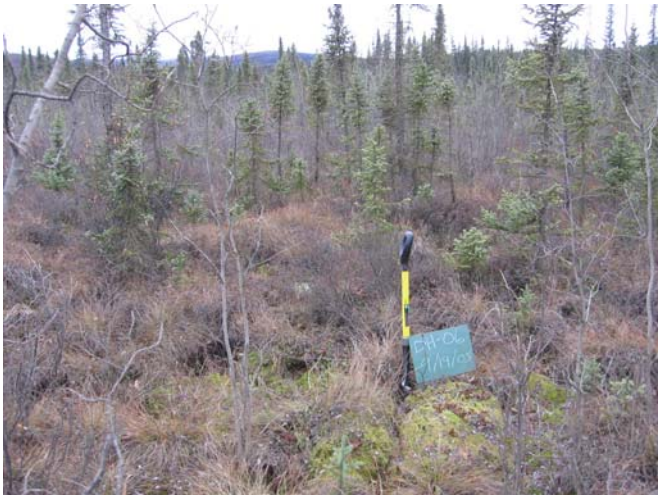
DH04: Needleleaf Forest
NWI Class: PSS3/4B



Hydrology: Saturated at 7", Frozen at 15"
Soils: Shallow organics over silt loam

DH05: Needleleaf Forest
NWI Class: PSS3/4B

Hydrology: Saturated at 5"
Soils: Moderate organics over silt loam



DH06: Low Shrub Scrub
NWI Class: PSS1B

Hydrology: Saturated at 6"
Soils: Shallow organics over silt loam

DH07: Needleleaf Forest
NWI Class: PSS3/4B

Hydrology: Saturated at 6", Frozen at 22"
Soils: Thin organics over loam

DH08: Upland
NWI Class: U

Hydrology: Well drained
Soils: Thin organics over silty sand

DH09: Low Shrub Scrub
NWI Class: PSS1B

Hydrology: Saturated at 11"
Soils: Thin organics over silt loam

DH10: Needleleaf Forest
NWI Class: PSS4/1B

Hydrology: Saturated at 6.5”
Soils: Thin organics over silt loam

DH11: Needleleaf Forest
NWI Class: PSS4/1B

Hydrology: Free water in pit at 8.5”
Soils: Thin organics over silt loam

DH12: Upland
NWI Class: U

Hydrology: Well drained
Soils: Thin organics over silt loam

DH13: Needleleaf Forest
NWI Class: PFO4/EM1B

Hydrology: Saturated at 11”
Soils: Thin organics over silt loam

DH14: Low Shrub Scrub
NWI Class: PSS1B

Hydrology: Saturated at 7”
Soils: Thin organics over silt loam

DH15: Upland
NWI Class: U

Hydrology: Well drained
Soils: Thin organics over silt loam

DH16: Upland
NWI Class: U

Hydrology: Well-drained
Soils: Thin organics over silt loam with buried organic layer

DH17: Upland
NWI Class: U

Hydrology: Well drained
Soils: Thin organics over silt loam

DH21: Graminoid-Shrub Scrub (with Standing Dead)
NWI Class: PEM1B

Hydrology: Saturated at 3.5", free water at 5.5"
Soils: Histic Epipedon with sufidic odor

DH22: Upland
NWI Class: U

Hydrology: Well-drained
Soils: Thin organics over gravelly silt loam

DH23: Gramionoid-Shrub Scrub (with Standing Dead)
NWI Class: PEM1B

Hydrology: Saturated at 8”
Soils: Thin organics over silt loam

DH24: Needleleaf Forest
NWI Class: PFO4/SS1B

Hydrology: Saturated at 6.5”
Soils: Thin organics over gravelly silt loam

DH25: Upland
NWI Class: U

Hydrology: Saturated at 6”
Soils: Thin organics over gravelly silt loam

DH26: Tall Shrub Scrub
NWI Class: PSS1B

Hydrology: Saturated at 7”
Soils: Thin organics over silt loam

DH27: Upland
NWI Class: U

Hydrology: Well drained
Soils: Thin organics over silt loam

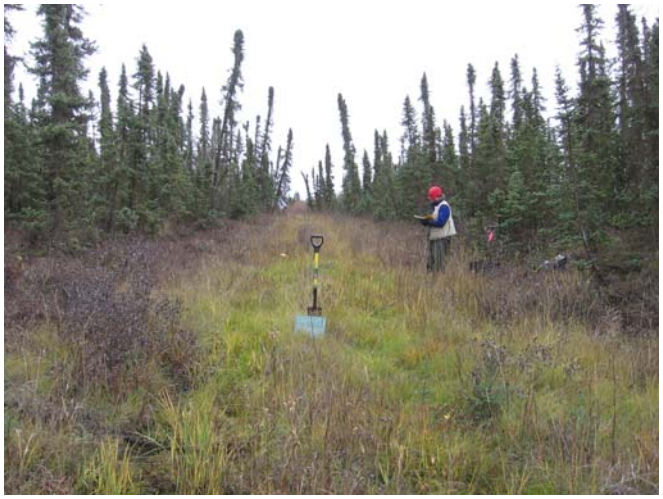
DH28: Upland
NWI Class: U

Hydrology: Well-drained
Soils: Thin organics over silt loam

DHP01: Upland

DHP01: Upland

DHP02: PEM1B



DHP02: PEM1B

DHP03: R4SBC

DHP03: R4SBC

DHP04: R4SBC

DHP05: Upland

DHP05: Upland

DHP06: Upland Fill

DHP06: Upland Fill

DHP07: Upland

DHP07: Upland

DHP08: Upland

DHP08: Upland

Appendix C. Approved Jurisdictional Determination Form.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): April, 2010

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:Alaska District, Elmendorf AFB.

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:Alaska County/parish/borough: Yukon-Koyukuk City: Livengood
Center coordinates of site (lat/long in degree decimal format): Lat. 65.57338 ° **N**, Long. 149.04263° **W**.
Universal Transverse Mercator:
Name of nearest waterbody: Yukon River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Yukon River
Name of watershed or Hydrologic Unit Code (HUC): West Hess Creek (HUC 10)

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: April 2010
☒ Field Determination. Date(s): 19–22 September 2005, ABR Inc. and 15–16 August 2007, DOT, Northern Region

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet: width (ft) and/or 2.65 acres.
      Wetlands: 353.40 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known):Not known.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 250 000**acres**
Drainage area: 600 **acres**
Average annual rainfall: 6 inches
Average annual snowfall: 5 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **30 (or more)** river miles from TNW.
Project waters are **2-5** river miles from RPW.
Project waters are **30 (or more)** aerial (straight) miles from TNW.
Project waters are **2-5** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: All Intermittent stream in the study area flow either to Erickson Creek or Richardson Creek, these two creeks connect with Hess Creek which empties into the Yukon River.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 2 feet
Average depth: <1 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable, vegetated.
Presence of run/riffle/pool complexes. Explain: relatively straight run through project area.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): Unknown %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Combination of ground water and runoff.
Other information on duration and volume: .

Surface flow is: **Discrete and confined**. Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☒ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☒ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Suspended sediment.
Identify specific pollutants, if known: Significant dust cover bordering roadway.

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☒ Wetland fringe. Characteristics: Typical forested sloping wetlands for the area abut RPWs in study area.
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size:353.40acres

Wetland type. Explain: Forested, Scrub and Emergent vegetated wetlands.

Wetland quality. Explain:Dust input from unpaved road.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **No Flow** . Explain: .

Surface flow is**: Not present**

Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☒ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **30 (or more)** river miles from TNW.

Project waters are **30 (or more)** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Surface water is rare.

Identify specific pollutants, if known: Possible pollutants related to dust input from road.

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☒ Vegetation type/percent cover. Explain:Wetlands are all 100% vegetated.
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (353.40) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Y	353.40		

Summarize overall biological, chemical and physical functions being performed: All wetlands in this study area are considered to be part of the same headwater wetland system. All mapped wetland types are at least connected to a perennial flowing river downstream by a seasonal headwater RPW. Wetlands identifed in this study are typical of the Yukon-Tanana Uplands.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: At the time of sampling Erickson Creek and small tributary to Erickson Creek (Figure 2a and 2b in wetlands report) showed characteristics of a permanently flooded waterway..
   - ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows

seasonally: The seasonal RPWs found throughout the study site were classified as such based on aerial photo interpretation. A seasonal stream was delineated where significant channel features and changes in vegetation type were observed as well as the presence of a culvert. The seasonal streams found in this study area are typical of headwater streams found throughout the Yukon Tanana Uplands which are fed by a combination of ground water and surface runoff sources..

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **3304** linear feet width (ft).
☒ Other non-wetland waters: **1.05**acres.
Identify type(s) of waters: **Erickson Creek and small tributary and numerous seasonal drainages along road corridor**.

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **353.40**acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Wetland Delination for MP11-18 Dalton Hwy, ABR Inc.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☒ Corps navigable waters' study:U.S. Army Corps of Engineers (USACE) 2010. Corps of Engineers, Alaska District, Navigable Waters [Online] http://www.poa.usace.army.mil/reg/NavWat.htm. March 2010.
☒ U.S. Geological Survey Hydrologic Atlas: .
☒ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:Livengood C5 and C5.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Fish and Wildlife Service (USFWS). 2010. National Wetland Inventory: Geospatial Wetlands Digital Data. [Online] http://www.fws.gov/wetlands/data/index.html. March 2010.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date):high resolution (1.6 ft pixels) digital, black and white, satellite imagery obtained in September 2008 (Processed by Digital Globe).
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☒ Applicable/supporting scientific literature:See Wetlands Report.
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

State of Alaska
Department of Transportation and Public Facilities

Highway Wetlands Avoidance and Minimization Form

Project Name: Dalton Highway MP 11-18 Reconstruction
Project Number: ***62196/NH-065-2(12)***
Date: 30 June 2010

Question	***Yes***	**No**	**NA**

I. Project Scope: Provide a brief description of and reason for the project.

The purpose of this project is to improve the safety and performance of the Dalton Highway between mileposts (MP) 11 and 18 by reconstructing the roadway. The original roadway was thought of as a haul route to support the Trans Alaska Pipeline System and was constructed to the State of Alaska Department of Highway secondary road standards.

Several deficiencies have been observed in the MP 11-18 corridor, including:

- Fill sections across some low areas are showing signs of major foundation failures.
- Generally, the entire roadway is very narrow and inconsistent in width, particularly through 12-Mile curve and the Erickson Creek area; truckers currently radio ahead and pull over as needed to allow for one-way traffic. Realignment is desirable.
- There are several areas where continuous settlement is occurring, including a section at MP 14 that required a recent 2-foot grade raise.
- There is a lack of cross culverts and ditches in several locations.
- The shot rock embankment on some steeper grades seems to be promoting the flow of water to follow the roadbed and saturate the embankment in low areas.
- Steep grades (up to 12%)

This project proposes to widen the existing highway to a uniform top width of 32 feet (lanes and shoulders), widen the recovery area (clear zone), reduce grades, flatten horizontal curves and construct a realignment at Erickson Creek (MP 12). Paving this section of road is currently under evaluation. The cross section upgrades would be consistent with previous Dalton Highway reconstruction projects. Existing culverts would be extended, failed culverts replaced, and new culverts installed as needed to improve drainage. The existing highway profile would be raised in the range of 1 to 15 feet in order to meet sight distance requirements for a 50 MPH design speed. At Erickson Creek (MP 12), the project proposes to realign approximately 3,500 feet of the highway in order to replace the existing 30 MPH reversing horizontal curves with new curves meeting 50 MPH design standards. In conjunction, there would be a proposed change in the profile by as much as 30 feet to provide flatter grades on the realignment compared to the existing highway (8% vs. 10%) and to facilitate an all- embankment construction to avoid excavation in a known area of ice-rich soils. To accommodate the proposed realignment, the existing 123-foot long by 10-foot diameter culvert would be removed, and a new culvert that is approximately 14 feet in diameter and 230 feet in length would be installed approximately 100 feet southeast of the existing culvert. The new culvert would be designed to meet current ADF&G Tier I fish passage standards.

Several realignment alternatives were considered to address the operational and safety concerns associated with the existing highway geometry at MP 12. Realignment alternatives proposed north of the existing highway were eliminated from consideration primarily due to greater amounts of new highway constructed over undisturbed ground, crossing Erickson Creek at new locations, longer culvert lengths, steep grades, and deep sidehill fills. To the

Question	*Yes*	No	NA

Question	*Yes*	No	NA
extent possible, the proposed realignment utilizes the disturbed areas associated with the existing highway The proposed action, as described in this document, meets the project purpose and need and applicable design criteria while avoiding and minimizing environmental impacts. An existing 200-acre, State owned material site (MS # 65-3-013-2), commonly known as 19-Mile Hill Quarry, would be made available to the project. Existing roads would provide access. Wetland delineations and cultural/historical surveys of the material site were completed in conjunction with the MP 11-18 highway corridor. The site includes both previously mined and undisturbed areas. Approximately 850,000 cubic yards of material would be needed to meet the project's embankment needs. It is estimated that 250,000 cubic yards of material would be extracted from the already disturbed area, with the balance (600,000 cubic yards) extracted from undisturbed areas.			
II. Avoidance Measures			
1. Can the proposed project or project components be located in an upland area? If not, explain in detail. (Refer to preliminary jurisdictional wetland determination.)	☐	☒	☐
If yes, does this upland area provide unique habitat to the area or contain other protected resources, such as cultural resources, federally listed or candidate species, bald eagles, or other raptors? Consult with the agency with jurisdiction or expertise if appropriate, such as the Corps, USF&WS, NMFS, or ADF&G.	☐	☐	☒
Are there other project-related impacts to the upland area that are considered substantial, such as subsistence use or other socioeconomic factors? Consult with the agency with jurisdiction or expertise, if appropriate.	☐	☒	☐
Describe: Complete avoidance of wetlands is not possible as more than 60% of areas abutting the existing highway has been delineated as wetlands. By widening the existing highway, the average impact width is estimated to be 15 feet on either side of the highway, thus avoiding greater wetland impacts associated with new highway locations or major realignments. The realignment at Erickson Creek is an essential component of improving safety by replacing the existing 30 MPH reversing horizontal curves with new curves that meet 50 MPH design standards. Impacts to jurisdictional waters in this area cannot be avoided due to the fact that Erickson Creek crosses the highway corridor. Impacts have been minimized by siting the realignment, to the extent possible, within previously disturbed areas.			
2. In consideration of future traffic forecasts, future transportation projects, or expected community growth and maintenance considerations, has the project or project components been sited to avoid wetland impacts?	☒	☐	☐
Can design options such as steeper side slopes, flexible design or flexible design standards be used to avoid impacts?	☐	☒	☐
Can the footprint of any specific project component be reduced to avoid wetlands?	☐	☒	☐
Can improvements be consolidated to avoid impacts?	☐	☒	☐
Have existing roads, material sites, and other facilities been incorporated	☒	☐	☐

Question	*Yes*	No	NA
into the design of the proposed project to avoid wetland impacts?			
Describe: The proposed improvements accommodate future traffic volumes and have been sited to minimize wetland impacts to the greatest extent possible by widening the existing facility. Steep side slopes and grades are used in certain areas to avoid wetland impacts and still meet minimum design requirements. Components of the project have already been consolidated where possible. For example, realignment at Erickson Creek and the reconstruction of the corridor could have been separate projects but have been consolidated to reduce impacts and to facilitate construction. Refer to section III.2 for impact minimization measures. As much material as possible will be extracted from the previously mined areas within the available material site to avoid wetland impacts (approximately 250,000 CY). However, in order to meet the material needs of the project, the mining area would need to be expanded to extract an additional 600,000 CY from previously undisturbed areas thus resulting in additional wetland impacts.			
3. Have crossings of fish streams been avoided? (Consult the Anadromous Fish Catalog or contact ADF&G for information on fish-bearing waters.)	☐	☒	☐
Describe: Erickson Creek intersects the existing highway; an alternate alignment that would avoid this crossing is not feasible. Coordination with ADF&G began early in project development to avoid and minimize impacts to resident fish species. The new culvert would be designed to meet fish passage requirements in accordance with DOT&PF/ADF&G Culvert Design and Construction Memorandum of Agreement (August 2001).			
4. If the regional environmental manager has determined that the project may adversely affect Essential Fish Habitat (EFH), list the preliminary EFH conservation measures below.			
Describe: Essential Fish Habitat is not present in the project area.			
III. Minimization Measures (If the impacts can't be avoided, continue.)			
1. Can the proposed project or project components be located in a lower-value wetland area? If not, explain in detail. (Refer to appropriate resource mapping or functional value assessment.)	☐	☒	☐
If yes, would construction affect other protected resources, such as cultural resources, federally listed or candidate species, bald eagles, or other raptors? Consult with the agency with jurisdiction or expertise, if appropriate.	☐	☐	☒
Are there other project-related impacts to this lower-value wetland that are considered substantial, such as to cultural resources, subsistence use, or other socioeconomic factors? Consult with the agency with jurisdiction or expertise, if appropriate.	☐	☒	☐
Describe: There is no practicable lower value/non-wetland alternative given the existence, location, and function of the Dalton Highway. The wetlands impacted by the proposed project are relatively lower in value due to their proximity to the existing highway. Some are considered roadside ditches or ponds where water regularly collects alongside the toe of the road. A new alignment would have a greater impact on undisturbed wetlands, therefore realignment is being used only where absolutely necessary. Impacts to relatively higher value wetlands, such as open water and emergent wetlands, have been minimized as much as			

Question	*Yes*	*No*	*NA*
possible. The crossing of Erickson Creek utilizes the existing highway and previuosly disturbed areas (uplands) to minimize impacts. No other substantial project-related impacts have been identified or are anticipated.			
2. In consideration of traffic forecast changes in use, future projects, expected community growth, and maintenance, has the proposed project or project components been sited to minimize wetland impacts? Has this been applied to all individual components of the highway?	☒	☐	☐
	☒	☐	☐
Can the footprint of specific project components be reduced, e.g. steeper side slopes?	☐	☒	☐
Can improvements be consolidated to minimize impacts?	☐	☒	☐
Have existing roads, material sites and other facilities been incorporated into the design of the proposed project to minimize wetlands impacts?	☒	☐	☐
Describe: All project components have been designed to accommodate traffic forecasts and anticipated maintenance needs. The realignment near MP 12 is necessary to correct the poor geometry and upgrade the road to meet current design and safety standards. All previously considered realignment alternatives in this area would have incurred similar wetland impacts to those of the proposed action. In certain areas, steeper grades have been proposed to limit the amount of fill required and to minimize wetland impacts. The steepest slopes recommended for stability would be used for the project. The existing road alignment and embankment will be reused to the most practical extent. An existing material site (MS 65-3-013-2), located near the project area will be made available for the project. Utilizing this existing material site, access road, and previously mined areas further minimizes wetland impacts.			
3. Have crossings of fish streams been located to minimize adverse effects to the extent practicable? (Contact agencies with jurisdiction or expertise as appropriate.)	☒	☐	☐
Have adverse effects on fish spawning habitat been minimized?	☐	☐	☒
Have stream crossings been designed in accordance with the DOT&PF/ADF&G Culvert Design and Construction Memorandum of Agreement?	☒	☐	☐
4. If the regional environmental manager has determined that the project may adversely affect EFH, list the preliminary EFH conservation measures below.			
Describe: The project would install a new culvert crossing for the realignment at Erickson Creek. The new structure would adhere to fish passage requirements per the MOA. Impacts to water quality and fish passage related to construction activities are temporary; however, efforts would be made to minimize the amount of time that equipment is in the stream channel. N/A: Fish spawning habitat is not located within the project area. N/A: Essential Fish habitat is not present in the project area.			

Question	*Yes*	No	NA
VI. Material Site Considerations Contractor-supplied and commercial material sites are not subject to an avoidance and minimization review.			
1. Has a material site been designated for the project? If yes, continue. If no, go to V.	☒	☐	☐
If a new material site is required have you considered locating and accessing material an adequate distance from the project so that it can be reclaimed as wetlands or other wildlife habitat?	☐	☐	☒
Would a new site, located a safe distance from the project, require a new road, resulting in additional wetland resource or community use impacts? Are there means to avoid a new access road? Describe below if development of this new site would result in more or fewer wetlands impacts than a new or existing material site located close to the project.	☐	☐	☒
	☐	☐	☒
If a new or existing material site has been selected that would be located a safe distance from the project and requires minimal additional road building, is there a mine reclamation plan? If located an appropriate distance from the project, can the material site be reclaimed to provide open water habitat such as shallows, islands, and irregular shorelines? (Consult agencies with jurisdiction or expertise as appropriate.)	☒	☐	☐
	☐	☒	☐
Has geotechnical and hydrological information been collected and used to maximize gravel exploitation while minimizing wetland impacts (such as mining deeper, adjusting material site boundaries, and using portions of the pit for temporary stockpiling of material)?	☒	☐	☐
Has a long-term material site been considered? If so, can a portion of the site be closed and reclaimed at the end of the project?	☒	☐	☐
	☐	☒	☐
Describe: An existing material site, 19 Mile Hill Quarry (MS 65-3-013-2), would be made available to the project for material extraction. This material site is currently operating under a material sale contract that expires 31 August 2014. An existing access road connects the site to the old Dalton Highway. Mining within the previously disturbed areas of the material site and utilizing the existing access road would result in fewer wetland impacts than establishing a new material site and access road at a new location. Higher quality or equivalent material than what can be extracted from 19 Mile Hill Quarry is likely not available along the Dalton Highway south of MP 24. The effort involved in determining a suitable source of material located an adequate distance from the project would be cost prohibitive. Furthermore, the existing material site has been surveyed for cultural and archaeological resources and has had a wetland delineation so that impacts to these resources may be avoided and minimized. Information on file for this material site includes a reclamation plan that was developed for previous mining activities. The contractor must develop a mining plan for review and approval for the specific areas to be mined prior to beginning extraction. This site is considered open and active and will continue as a material source beyond the construction of the project. Reclamation to provide open water habitat is not feasible at this time. Previous geotechnical investigations have been conducted to determine the quality and quantity of material. However, additional investigations should be conducted prior to mining to determine the location of suitable material. No surface water is present within the previously mined area. The possibility of closing a portion of the material site for reclamation at the end of the project may be addressed in the project specific mining plan.			

Question	*Yes*	No	NA

V. Additional Material Site Considerations			
1. Will project overburden be stockpiled, preferably in uplands, for use as "top soil" or in reclamation of material sites or previously disturbed areas?	☒	☐	☐
Describe: The contractor will be responsible for stockpiling overburden and for its ultimate use. According to the reclamation plan on file, stockpiles of topsoil that have not revegetated should be spread over the slopes. Reclamation of the site will include smoothing slopes and contouring them where possible to blend with the surrounding terrain.			
2. How will access roads and other fills associated with the material site be restored upon project completion?			
Describe: This material site is currently permitted by DOT&PF through August 2014 , and is likely to continue to be used under a new permit after that date. Restoration and reclamation of the material site and access roads is therefore not feasible at the end of the proposed project.			
3. Can development of the material site be timed to avoid or minimize effects during spawning, migration, and nesting periods? (Consult agencies with jurisdiction or special expertise.)	☒	☐	☐
Describe: No surface waters are present within the material site. Vegetation clearing associated with mining activities will not occur between May 1st and July 15th per the United States Fish & Wildlife Service (USFWS) Recommended Time Periods for Avoiding Vegetation Clearing (May 2007), unless specifically authorized by the USFWS.			