Kenai Spur Highway Extension
Kenai Peninsula Borough
Environmental Assessment
AK KENAI 2016(1)
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Kenai Peninsula Borough
Environmental Assessment

AK KENAI 2016(1)

Submitted
Pursuant to Public Law 91-190
National Environmental Policy Act

U.S. Department of Transportation
Federal Highway Administration
Western Federal Lands Highway Division

11/10/2018

Date Approved

Dan Donovan
Director of Program Administration
Federal Highway Administration
Western Federal Lands Highway Division

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January 2018
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Executive Summary
The Western Federal Lands Highway Division (WFLHD) of the Federal Highway Administration (FHWA) has prepared this environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA). This EA discloses the environmental consequences of the Proposed Action and a No Action alternative. This EA also provides sufficient evidence to determine whether an environmental impact statement (EIS) will be prepared or whether a finding of no significant impact is appropriate. The Kenai Peninsula Borough (KPB) propose to construct north of Nikiski, Alaska an 8.1-mile road extension that would continue from the end of the Spur Highway from Captain Cook State Recreation Area to Otter Creek in the Gray Cliff subdivision (see location map, Figure 1). The project will reduce the impacts to wetlands and aquatic habitat, currently created by off-road vehicles traversing to the private properties. In 1998 through a Congressional action (H.R. 2400 The Transportation Equity Act of the 21st Century), the federal government appropriated approximately $6,000,000 to be used by KPB as a Federal-aid grant to construct an extension of the Kenai Spur Highway (KSH). A part of the funding was used for preliminary design and NEPA scoping by KPB in 2005. In 2014 a private enterprise for oil and gas exploration proposed to construct a similar road improvement. The private firm, Apache Corporation ceased operations in the state of Alaska, and agreed to donate to KPB the preliminary engineering and environmental work undertaken to that point. KPB is contributing that donated work to the project as part of the required matching contribution of 20% of the Federal grant funds. WFLHD is working with the KPB in a Stewardship and Oversight (S&O) role to ensure KPB delivers the project in accordance with Title 23 requirements and other applicable federal laws.
Figure 1.
Kenai Spur Extension
<table>
<thead>
<tr>
<th>Environmental Resource</th>
<th>No Action Alternative</th>
<th>Build (Selected) Alternative Direct Impacts</th>
<th>Build (Selected) Alternative Indirect Impacts</th>
<th>Build (Selected) Alternative Cumulative Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation and Access</strong></td>
<td>Continued access difficulties, access limited to ORVs/ATVs and foot travel.</td>
<td>Construction</td>
<td>Increased long-term reliability of road. Traffic use would likely increase over time because of improved access that would allow automobile use. Improved access and road reliability could facilitate private roads or driveways constructed to connect undeveloped property to the to the KSH extension.</td>
<td>Combined with past, present, and reasonably foreseeable future actions, the Build Alternative would not be expected to contribute to cumulative effects to transportation and traffic.</td>
</tr>
<tr>
<td><strong>Land Use</strong></td>
<td>No change to land use</td>
<td>Construction No impact Operation No impact. Work would occur within the existing KPB dedicated ROW.</td>
<td>No major change to land use, the existing developable land was platted by KPB in 1980’s.</td>
<td>No change to land use, combined with past, present and reasonably foreseeable future actions.</td>
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<tr>
<td><strong>Recreation</strong></td>
<td>Continued access difficulties to recreation areas and activities</td>
<td>Construction Temporary, minor decrease in recreational use due to construction traffic controls</td>
<td>Increased road reliability and safety for recreationists</td>
<td>Increased road reliability and safety would encourage increased recreation access and opportunities</td>
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<td>Environmental Resource</td>
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<td>Build (Selected) Alternative Direct Impacts</td>
<td>Build (Selected) Alternative Indirect Impacts</td>
<td>Build (Selected) Alternative Cumulative Impacts</td>
</tr>
<tr>
<td>------------------------</td>
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</tr>
<tr>
<td>Wetlands</td>
<td>Continued on-going degradation and sedimentation of existing wetlands and streams caused by ORV/ATV traffic off-tracking and taking multiple routes to successfully traverse through to reach private properties in Gray Cliff and Moose Point subdivisions</td>
<td>Permanent impact to 14.0 acres of wetlands</td>
<td>Potential temporary impacts outside the construction zone. Mitigated through implementation of Best Management Practices (BMPs). Despite the permanent loss of wetlands to build the road, the overall impact to the resource will likely be positive because it will provide travelers a solid crossing through these areas and ease the ongoing resource damage from the avoidance of new trails that are being created.</td>
<td>Improved access to platted lots could facilitate increased rate of wetland fills from construction of private roads or driveways constructed to connect undeveloped property to the KSE.</td>
</tr>
<tr>
<td>Floodplains</td>
<td>No mapped floodplains in the project area.</td>
<td>Construction No impact Operation No impact.</td>
<td>No impact.</td>
<td>No impact.</td>
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<td>Environmental Resource</td>
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<td>Build (Selected) Alternative Direct Impacts</td>
<td>Build (Selected) Alternative Indirect Impacts</td>
<td>Build (Selected) Alternative Cumulative Impacts</td>
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</table>
| Fish, Wildlife & Vegetation | Ongoing temporary disturbances to wildlife species. An invasive species, reed canary grass, has been introduced in the area, continued disturbance in wetlands will allow this invasive to become distributed through the corridor. Anadromous and local rearing streams are being crossed in an expanding footprint by off road vehicles causing loss of fish habitat and impacts downstream. Potential removal of riparian plants, mature forest, or early and mid-successional forest due to regular maintenance of the 100' ROW. | Construction  
Construction would temporarily disrupt wildlife populations  
Temporary loss of habitat due to construction-related clearing; disturbed areas would be re-vegetated to re-establish habitat value in the long run | Potentially improved mobility of amphibians in streams through the aquatic organism passage culverts that cross under the proposed KSE. Removal and replanting of wetland vegetation in the construction zone allows the reestablishment of native vegetation outside the road prism as off-tracking by ORVs/ATVs is eliminated. | Improved access to platted lots could facilitate increased rate of development and vegetation removal of these private lots adjacent to the KSE. |
| Cultural and Historic Resources | No impact | Construction  
No impact  
Operation  
No impact | No impact | No impact |
| Soils and Geology | No change | Minimal impact | Minimal impact | Minimal impact |
| Noise | No change | Construction  
Temporary increased noise levels would occur at closest sensitive receptors but would be below levels outside the project area | Potential temporary increases in noise | Neutral cumulative impact |
<table>
<thead>
<tr>
<th>Environmental Resource</th>
<th>No Action Alternative</th>
<th>Build (Selected) Alternative Direct Impacts</th>
<th>Build (Selected) Alternative Indirect Impacts</th>
<th>Build (Selected) Alternative Cumulative Impacts</th>
</tr>
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<tbody>
<tr>
<td>Visual Quality</td>
<td>No change</td>
<td>Construction</td>
<td>No effect</td>
<td>No cumulative impact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporary reduction in visual quality from construction equipment and vegetation removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Quality</td>
<td>No change</td>
<td>Construction</td>
<td>No effect</td>
<td>Neutral cumulative impact, exhaust from automobiles instead of ORVs/ATVs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporary increase in dust and exhaust during construction</td>
<td></td>
<td></td>
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<tr>
<td>Water Quality</td>
<td>Continued on-going degradation and sedimentation of existing wetlands and streams caused by ORV/ATV traffic off-tracking and taking multiple routes to successfully traverse through to reach private properties in Gray Cliff and Moose Point subdivisions</td>
<td>Construction</td>
<td>Implementation of this project will rectify on-going environmental degradation and an on-going source of pollution into Cook Inlet by providing a stable, year-round traveling surface that will restrict off-tracking by off-road vehicles and the on-going degradation of Leif’s Creek and wetlands and sediment loads into Leif’s Creek and Cook Inlet</td>
<td>Improved access to platted lots could facilitate increased rate of development and thus cause minor water quality degradation.</td>
</tr>
<tr>
<td>Hazardous Materials and Spills</td>
<td>Risk of petroleum spill/hazardous waste spill incident as a result of a crash into the high-pressure transmission line</td>
<td>Construction</td>
<td>No effect</td>
<td>No Impact</td>
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<tr>
<td></td>
<td></td>
<td>Potential for spills during construction as a result of failed BMPs</td>
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</tr>
<tr>
<td>Social and Community</td>
<td>No Impact</td>
<td>Construction</td>
<td>No change to levels outside the project area</td>
<td>Minimal Impact</td>
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<tr>
<td></td>
<td></td>
<td>Temporary traffic delays, increased noise, access</td>
<td></td>
<td></td>
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<tr>
<td>Environmental Resource</td>
<td>No Action Alternative</td>
<td>Build (Selected) Alternative Direct Impacts</td>
<td>Build (Selected) Alternative Indirect Impacts</td>
<td>Build (Selected) Alternative Cumulative Impacts</td>
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</tr>
<tr>
<td>Environmental Justice</td>
<td>No Impact</td>
<td>Construction</td>
<td>Potential economic benefits related to increased use of area, resulting from increased road reliability</td>
<td>No Impact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>changes, and other construction-related disruptions to residents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Appendices

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### Acronyms and Abbreviations

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<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tr>
<td>ADEC</td>
<td>Alaska Department of Environmental Conservation</td>
</tr>
<tr>
<td>ADF&amp;G</td>
<td>Alaska Department of Fish and Game</td>
</tr>
<tr>
<td>ADT</td>
<td>Average Daily Traffic</td>
</tr>
<tr>
<td>AK</td>
<td>Alaska</td>
</tr>
<tr>
<td>APDES</td>
<td>Alaska Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>APE</td>
<td>Area of Potential Effect</td>
</tr>
<tr>
<td>ATV</td>
<td>All-Terrain Vehicle</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>CEQ</td>
<td>Council on Environmental Quality</td>
</tr>
<tr>
<td>CCSRS</td>
<td>Captain Cook State Recreation Area</td>
</tr>
<tr>
<td>CIRI</td>
<td>Cook Inlet Region Incorporated</td>
</tr>
<tr>
<td>CO</td>
<td>Contract Officer</td>
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<td>DCCED</td>
<td>Alaska Department of Commerce, Community and Economic Development</td>
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<td>EA</td>
<td>Environmental Assessment</td>
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<td>EJ</td>
<td>Environmental Justice</td>
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<td>Environmental Protection Agency</td>
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<td>EO</td>
<td>Executive Order</td>
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<td>ESCP</td>
<td>Erosion and Sediment Control Plan</td>
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<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<td>FHWA</td>
<td>Federal Highway Administration</td>
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<td>KNWR</td>
<td>Kenai National Wildlife Refuge</td>
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<td>KPB</td>
<td>Kenai Peninsula Borough</td>
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<td>KSE</td>
<td>Kenai Spur Extension</td>
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<td>KSH</td>
<td>Kenai Spur Highway</td>
</tr>
<tr>
<td>LF</td>
<td>Linear Feet</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td>NRCS</td>
<td>Natural Resources Conservation Service</td>
</tr>
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<td>OHA</td>
<td>Office of History and Archeology</td>
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Kenai Spur Highway Extension Environmental Assessment
Draft for Public Review
ORV  Off-Road Vehicle
ROW  Right-of-Way
S&O  Stewardship & Oversight
SPCC Spill Prevention Control and Countermeasures
SWPPP Stormwater Pollution Prevention Plan
USACE US Army Corps of Engineers
USDOT US Department of Transportation
USFWS US Fish & Wildlife Service
WFLHD Western Federal Lands Highway Division
1. Introduction

1.1. Background

In the 1980’s private property north of the Captain Cook State Recreation Area in Nikiski was subdivided into residential lots for the Gray Cliff and Moose Point subdivisions. During the process of subdividing the Gray Cliff and Moose Point subdivisions KPB established a 100-foot-wide transportation corridor to provide access to the lots offered for sale. As these lots were developed and occupied, the only overland access to these properties was via the clearing adjacent the existing Andeavor AK Pipeline and Harvest Pipeline Company corridor. As there was no developed trail or roadway, access was solely through off-road vehicles pioneering trails through the pipeline easement and adjacent KPB right-of-way (ROW). Because of the unimproved nature of the route and presence of wetlands, several large, impassable sinkholes have formed from the ORV traffic that require users to bypass on one side or the other. This has resulted in multiple vehicle trails that are spread over a large area rather than being confined to a single alignment or within the platted ROW. These off-road activities have caused significant degradation to streams such as Leif’s Creek and Otter Creek; both of which support anadromous fish runs, as well as significant degradation to wetland and upland habitats. This activity has also caused erosion, sedimentation and water quality degradation to Leif’s Creek and the associated turbid runoff and sedimentation into Cook Inlet. Jacobs Ladder is a heavily used access off-road trail that travels along, and through Leif’s Creek as it accesses and connects Cook Inlet Beach to the KSH ROW.

Alaska is arguably the least-connected state in the Union in terms of road transportation. The state's road system covers a relatively small area of the state, linking the central population centers. Under H.R. 2400 The Transportation Equity Act of the 21st Century (TEA 21) of 1998 the extension of the Kenai Spur Highway was appropriated $6,000,000 to be used by the KPB to construct an extension of the KSH. While some funding was used for preliminary design and environmental work, KPB concluded that the project development costs, including NEPA compliance, would exhaust the allocated funds before completion of construction.

In 2014, Apache Corporation began considering the development of a drill pad site within the Kenai National Wildlife Refuge (KNWR) in the Nikiski area, approximately seven miles north of the KSH terminus. The Apache Kenai Spur Extension was designed as an oil and gas exploration road. Apache took preliminary steps towards developing a project extending the KSH to the proposed site. In September, 2015 the US Army Corps of Engineers (USACE) issued permit POA-2014-460 authorizing Apache Corporation to fill 16.6 acres of jurisdictional wetland as part of constructing the Kenai Spur Extension (KSE) to access fields for oil and gas exploration. As the issuance of the 404 permit was a federal action the USACE conducted an environmental assessment as required under the National Environmental Policy Act (NEPA). In 2016 Apache Corporation pulled out of existing business developments in Alaska and withdrew from the planned development to extend the KSH to the proposed oil and gas exploration field. Apache accumulated a significant amount of preliminary engineering and environmental data and permits for the project and agreed to donate the completed work and environmental approvals to the Kenai Peninsula Borough. KPB is using that donated preliminary engineering and environmental work as part of the required 20% ‘match’ to access the remaining grant funds. WFLHD is working with the KPB in a Stewardship and Oversight (S&O) role to ensure KPB delivers the project in accordance with Title 23 requirements and other applicable federal laws. WFLHD is performing Stewardship &Oversight and environmental services on the project pursuant to its authority under 23 USC 308. This Environmental Assessment (EA) describes the reasonable range of alternatives and the process the Project Partners used to determine these alternatives. It also analyzes the impacts of these alternatives in the context of the existing environmental conditions and proposes mitigation measures to reduce or eliminate impacts.
1.2. Project Location

The project location is in the KPB in Section 2, Township 8N Range 10W; Section 36, Township 9N Range 10W; and Sections 14-15, 21-24, 28-31, Township 9N Range 9W Seward Meridian; near Nikiski, Alaska. The beginning of the project is located at 60° 48’ 24.035” N, 150° 59’ 54.627” W. The entirety of the proposed KSH is within the KPB-platted ROW.

Figure 2. Project Map of Kenai Spur Highway Extension

1.3. KPB Proposed Project vs. Apache Oil Proposal – A Comparison

The proposed extension of KSH is an 8.1 mile, 24-foot wide single-lane gravel road with an 18-foot wide driving surface. The project would begin at the Captain Cook State Recreation Area (CCSRA) and extend northeast, within the KPB’s existing ROW through the Gray Cliff and Moose Point Subdivisions and terminate just past the bridge crossing of Otter Creek. In the uplands the surface will be cleared and grubbed, geotextile mat put down and the road constructed in 8-inch lifts to a depth of at least 24-inches compacted to 95% density. In the uplands the “top” or driving surface will be 18 feet wide on a 24-foot wide roadbed. In the wetlands the surface will not be cleared or grubbed, vegetation will be cut to the surface, then woven geotextile mat (Geotex NW 601® or equivalent) put down and the road will be a 30-foot wide single-lane gravel road with an 18-foot wide driving surface constructed in 12-inch lifts to a depth of at least 30-inches.
compacted to 95% density. Road subsidence is anticipated to occur in the sections built on top of wetlands. This proposed KPB extension of KSH would accommodate drainage and include intermittent turnouts for passage of large vehicles. This road would be open to public use and access and maintained by the KPB. Construction of the Jacobs Ladder Trail will be added as 0.24 miles of 10-foot wide gravel trail to provide access between the KSH and top of the beach access. The Jacobs Ladder Trail will be funded through a State of Alaska Department of Commerce, Community and Economic Development (DCCED) grant and is not part of the WFLHD funding or KPB matching contributions. The project entirety is located on existing platted subdivision road ROWs. Turnarounds and turnouts are sited in upland areas. The project road and trail alignment have been mapped and impacts to wetlands minimized to the extent practicable. The project will provide improved access to recreation areas and subdivisions.

In 2015 US Army Corps of Engineers (USACE) conducted a NEPA evaluation as part of the Clean Water Act Section 404 permit POA-2014-460 issued to Apache Alaska Corporation (Apache) for a similar proposed scope of project to be developed and constructed by Apache for the purpose of allowing a private oil and gas company access to lands within the Kenai National Wildlife Refuge for oil and gas exploration. The USACE issued its Memorandum for Record of Decision on the permit, including on environmental compliance on September 20, 2015. The information in that document is hereby incorporated into this Environmental Assessment. USACE Section 404 permit on the Apache application is based upon the road crossing a total of 16.6 acres of wetland and comprising of 57,643 cubic yards of fill in those wetlands. See Section 11, below for link to the document.

On October 5, 2017 the USACE issued a modification to the permit POA-2012-460-M1 comprising of a reduced wetland fill area of 14.0 acres and 47,956 cubic yards of fill in wetlands. Construction requirements, including clearing, grubbing, gravel, culverts, drainage mat sections, turnouts and subdivision approaches, will be as originally provided.

The design of the KSH extension remains the same as in the prior USACE Section 404 permit, from the beginning of the project to station 421+46, near Mountain Violet Drive, constructing an 18’ wide road with 10’ wide turnouts at specified locations not to exceed every 2000 LF and subdivision road approaches at platted ROWs. The road width and shoulder slopes have been modified from the Apache design to reduce impacts from 26-foot width and 2.5:1 side slopes to 18-foot width and 2:1 side slopes. This design deviation was approved of the Borough Road Service Area Board.
Design omissions from the original USACE submittal include:

- Eliminating the 400-foot by 160-foot turnaround pad adjacent to Otter Creek and Mountain Violet Drive. This decrease in design scope will reduce the sum-total of permanent wetland impact by 1.28 acres.
- Eliminating construction of Mountain Violet Drive and associated production pads in Sections 13, 23 and 24 will result in another reduction of 0.07 acres of permanent wetland impact.

Design additions from the original USACE submittal includes:

- Extending the 18-foot wide road over the newly constructed 50-foot Otter Creek Bridge to an upland area near Warmwood Drive, and would total 834 LF of wetland impact; and
- Constructing a 10-foot wide gravel off-road vehicle access on Jacobs Ladder Drive from the KSH to the top of the bluff, an additional 645 LF of wetland impact. Jacobs Ladder currently provides dedicated ROW access from the Cook Inlet Beach to the KSH, adjacent to Leif’s Creek. The construction of the Jacobs Ladder trail will provide off-road vehicles improved access in an area where they are currently creating an ever-expanding footprint in the nearby wetlands and increasing the sediment load to Leif’s Creek.
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<th>Environmental Discipline</th>
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<th>Change from USACE NEPA Evaluation</th>
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<tr>
<td>Transportation and Access</td>
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<td>Legal access. Road maintained by KPB.</td>
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<tr>
<td>Land Use</td>
<td>Public Land. All work will occur within the KPB ROW.</td>
<td>Public Land. All work will occur within the KPB ROW.</td>
<td>No change.</td>
</tr>
<tr>
<td>Recreation</td>
<td>Improved road reliability and safety encouraging additional recreation use beyond the project limits.</td>
<td>Improved road reliability and safety encouraging additional recreation use beyond the project limits.</td>
<td>No change.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>The project will result in the fill and permanent loss of 14.0 acres of jurisdictional wetland and a modification to permit POA-2014-460.</td>
<td>Permit POA-2014-460 authorized the fill and permanent loss of 16.6 acres of jurisdictional wetland.</td>
<td>A reduction by 2.6 acres of wetland impact/permanent loss.</td>
</tr>
<tr>
<td>Floodplains</td>
<td>No impact.</td>
<td>No impact.</td>
<td>No change.</td>
</tr>
<tr>
<td>Fish, Wildlife &amp; Vegetation</td>
<td>Vegetation clearing would be limited to the 100’ ROW. Any tree removal would be conducted outside the migratory bird nesting window. All anadromous fish streams have designed and ADF&amp;G permitted aquatic organism passage. The proposed project area supports multiple species of terrestrial and avian wildlife; improved road surface conditions would allow for increased traffic speeds, increasing risk of wildlife collisions, adverse impacts as a result of the proposed project are not anticipated because of the abundance of adjacent habitat and low volumes of traffic.</td>
<td>Vegetation clearing would be limited to the 100’ ROW. Any tree removal would be conducted outside the migratory bird nesting window. All anadromous fish streams have designed and ADF&amp;G permitted aquatic organism passage. The proposed project area supports multiple species of terrestrial and avian wildlife; improved road surface conditions would allow for increased traffic speeds, increasing risk of wildlife collisions, adverse impacts as a result of the proposed project are not anticipated because of the abundance of adjacent habitat and low volumes of traffic.</td>
<td>No change.</td>
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<td>Soils and Geology</td>
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<tr>
<td>Noise</td>
<td>During construction increased noise levels would occur at closest sensitive receptors.</td>
<td>During construction increased noise levels would occur at closest sensitive receptors.</td>
<td>No change.</td>
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<tr>
<td>Visual Quality</td>
<td>There are no officially designated scenic areas or attributes in the project area.</td>
<td>There are no officially designated scenic areas or attributes in the project area.</td>
<td>No change.</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Vehicle traffic on a graveled surface could produce dust during dry seasons.</td>
<td>Vehicle traffic on a graveled surface could produce dust during dry seasons.</td>
<td>No change.</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Project will rectify on-going environmental degradation and an on-going source of pollution into Cook Inlet by providing a stable, year-round traveling surface.</td>
<td>Project will rectify on-going environmental degradation and an on-going source of pollution into Cook Inlet by providing a stable, year-round traveling surface.</td>
<td>No change.</td>
</tr>
<tr>
<td>Hazardous Materials and Spills</td>
<td>No impact</td>
<td>No impact</td>
<td>No change</td>
</tr>
<tr>
<td>Social and Community</td>
<td>Permanent all season access to Gray Cliff and Moose Point subdivisions and recreational access and use.</td>
<td>Permanent all season access to Gray Cliff and Moose Point subdivisions and recreational access and use.</td>
<td>No change.</td>
</tr>
<tr>
<td>Environmental Justice</td>
<td>No Impact</td>
<td>No Impact</td>
<td>No change</td>
</tr>
</tbody>
</table>

2. Project Purpose and Need

2.1. Purpose
Implementation of this project will restrict off-tracking by off-road vehicles and rectify on-going environmental degradation and an on-going source of pollution into Cook Inlet by providing a stable, year-
round traveling surface for residents of Gray Cliff and Moose Point Subdivision and recreationalists going beyond to Kenai NWR. Road construction away from the pipelines will also reduce chances of conflict and potential damages.

2.2. Need
Residents and property owners within the Gray Cliff Subdivision, and Moose Point Subdivision have long requested improved access to their properties. Currently access is limited to off-road vehicles (ORVs) and by foot. Access is limited by the season and time of day. Beach access is used to avoid the first ~4 miles of KSH extension because of the wetland/swampy areas where ATVs can get stuck is limited to 2x a day when the tide in Cook Inlet is low. Emergency response to residents and property owners in the Gray Cliff and Moose Point Subdivisions is limited to what can be accessed via ATVs or ORVs. Access is limited seasonally when all-terrain vehicles (ATVs) or ORVs traverse through the wetlands turning the areas turned into impassable mudholes, limiting consistent access to when the ground is frozen. Access is limited daily when property owners look to bypass some of the more impassable areas by traveling along the beach of Cook Inlet during periods of low tide and then traveling up Jacobs Ladder. By completing the KSH extension, emergency response to residents and property owners in the Gray Cliff and Moose Point Subdivisions will be greatly improved. ORVs/ATVs are currently using the utility easement over the high-pressure petroleum transmission pipelines.

3. Project Alternatives

3.1. KPB Preferred Alternative
This section describes the project alternatives; the Build Alternative and the No Action Alternative. The KPB proposed extension of KSH is intended to be an 8.1 mile, single-lane gravel road extending to a turnaround just beyond the existing crossing of Otter Creek. The funding amount for the project is fixed, in the event the level of funding is not sufficient for construction of the entire project, the total project length could be reduced. The extension will be an 18-foot wide driving surface with 10-foot wide turnouts at specified locations, and subdivision road approaches stationed when Gray Cliff and Moose Point Subdivisions were platted.
In the uplands, the 18-foot wide road will be constructed by:

1. Clearing and grubbing with the mulch left in place.
2. Geotextile fabric to separate the native ground from the imported fill.
3. Gravel fill placed and compacted in 8” lifts. (3 lifts minimum)
4. The top 4” of fill to be composed of 3” minus gravel.

In the wetlands, the 18-foot wide road will be constructed by:

1. Vegetation cut to ground level, but no grubbing or excavation.
2. Geotextile fabric to separate the native ground from the imported fill.
3. Gravel fill placed and compacted in 12” lifts. (2.5 lifts minimum)
4. The top 4” of fill to be composed of 3” minus gravel.
5. To limit the footprint/impacts in wetlands, the Contractor may not place fill, remove material or run equipment outside the designated 29.5’ construction zone.
3.2. No Action Alternative
With the No Action Alternative, the proposed project would not be constructed and restricted access to Gray Cliff and Moose Point Subdivisions would continue. Environmental degradation and the on-going source of sediment pollution into Cook Inlet would continue; a result of ORVs/ATVs continued off-tracking and mud-bogging through the unimproved KPB ROW. The risk of a transmission pipeline leak could occur; a result of a crash into the pipeline, because of the close proximity of high-pressure oil transmission lines to ORV/ATV traveling at high rates of speed to avoid getting stuck in the mud on very slippery and uneven surfaces.

3.3. How the Build Alternative Satisfies the Purpose and Need
The purpose of the proposed improvements is to meet the needs of the public; to provide safe, year-round access to Gray Cliff and Moose Point Subdivisions, visitors to Kenai NWR and eliminate the ever-expanding off-road vehicle trails around and through the KPB ROW, causing degradation to streams, wetlands and upland areas and threatening the integrity of the pipeline.

4. Affected Environment and Environmental Consequences
For the purpose of this EA, the project area is the extent where the project would have direct impacts. Indirect impacts are analyzed in this EA, even if they occur outside of the project area. This EA analyzes project impacts the environmental resources (e.g. transportation, land use, wildlife and vegetation) that the project has potential to impact. This section is divided into subsections for the separate resources, and for each resource the following categories are described:

- Affected Environment
- Direct Impacts
- Indirect Impacts (as necessary)
- Cumulative Impacts (as necessary)
- Mitigation (as necessary)

Affected Environment
The affected environment is the existing conditions relevant to the specific environmental discipline. The affected environment section discusses, commensurate with the likelihood and extent of the potential impacts, the existing social, economic, and environmental settings surrounding the project. It also identifies environmentally sensitive features in the project corridor. Each environmental resource subsection describes the affected environment related to that specific resource.

Direct Impacts
Direct impacts are those effects caused by the construction or operation of the proposed action. They include potential impacts in the immediate project footprint. Temporary impacts are included in this section and include impacts due to construction, which will be for a finite period of time, likely less than 2 years.

Indirect Impacts
Indirect effects occur separated from the proposed project by time or distance. In general, the project could generate long term changes to either human activity levels or land use in the action area because it is increasing roadway capacity and providing improved access to previously less accessible areas.
Cumulative Impacts
The Council on Environmental Quality (CEQ) defines cumulative impacts as those effects of past, current, or future public or private activities that are reasonably certain to occur within project area, combined with the effects of the proposed action.

Cumulative effects are the combination of a project’s impacts on a particular resource with the impacts of other past, present, and future human activities on that same resource. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 Code of Federal Regulations [CFR] 1508.7).

Mitigation
The CEQ regulations define mitigation as:
- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation measures for this project have been proposed to mitigate for impacts to the extent possible and are described in further detail below and summarized in Section 8.

4.1. Transportation and Access
This section describes existing conditions and potential impacts of the proposed project alternatives related to transportation and access. Transportation information was collected from the 2003 Kenai Peninsula Borough Transportation Plan.

4.1.1. Affected Environment
The KPB Road Service Area (RSA) maintains over 630 miles (95% is gravel and 5% is paved) of roads (see Figure 4). The RSA is divided into five regions, Central, West, North, East and South. Each region is divided into units. There are twenty-eight (28) road maintenance units borough-wide. The Kenai Spur Extension Project area is located in Road Maintenance Unit N5. Kenai Spur Highway at mile post 15 to approximate mile post 35 (North Kenai/Nikiski) is maintained by the Borough. Road maintenance includes snow plowing, sanding, minor road repairs, grading and ditch clearing.

4.1.1.1. Road Conditions
Residents presently use ORVs/ATV vehicles to access property and recreational areas beyond the existing road system. Off-road vehicle use has altered the vegetation and exposed soil and degraded stream banks, and that disturbance continues to grow as travelers take ever wider paths around muddy and wet areas. The off-road vehicle use has led to adverse effects on water quality (both on- and off-site), degraded wetland and riparian areas, and fish and wildlife habitats.
Figure 5. KPB Road Service Area
4.1.2. Environmental Consequences

4.1.2.1. No Action
Because of the unimproved nature of the route and presence of wetlands, several large, impassable sinkholes have formed from the ORV/ATV traffic that require users to bypass on one side or the other (see Figure 5). This has resulted in multiple vehicle trails that are spread over a large area rather than being confined to a single alignment or within the platted ROW.

4.1.2.2. Build Alternative

4.1.2.2.1. Direct Impacts
The proposed alternative would provide motor vehicles a stable, year-round traveling surface for residents of Gray Cliff and Moose Point Subdivision and will restrict off-tracking by off-road vehicles and the on-going degradation of Leif’s Creek and wetlands. During construction, there will be delays that will temporarily affect access for residents of Gray Cliff and Moose Point Subdivision. During construction, the municipality of Nikiski could see a slight uptick in construction related traffic, however, haul truck traffic should have minimal effect to traffic in Nikiski. The likely material site for constructing the road is north of Nikiski, trucks hauling construction material likely will not enter town.

4.1.2.2.2. Indirect Impacts
The proposed project would improve long-term reliability, access, and safety along the KSH. Emergency vehicles would be able to access residents of Gray Cliff and Moose Point Subdivision. Improved access could result in increased traffic. Improved access and road

Figure 6. Present Road Conditions, Kenai Spur Road
reliability could facilitate private roads or driveways constructed to connect undeveloped property to the to the KSH extension.

4.1.2.2.3. Cumulative Impacts
The proposed improvements to the extension of the KSH complement other past projects, such as the Leif’s Creek and Otter Creek Bridges. Combined with past, present, and reasonably foreseeable future actions, the Build Alternative would not be expected to contribute to cumulative effects to transportation and traffic.

4.1.2.2.4 Mitigation Measures
WFLHD recommends the following mitigation measures to offset transportation- and access related impacts during construction:
- Signage installed and public notices locally advertised in advance of and during traffic changes to inform the public;
- Installation and coordination of temporary traffic control devices to minimize the impacts to motorists.

4.2. Land Use
This section describes existing land use within the project area. Information was gathered from the 2005 Kenai Peninsula Borough Comprehensive Plan. In addition, site reconnaissance was conducted in June 2016.

4.2.1. Affected Environment
The Kenai Moose Range, now the Kenai National Wildlife Refuge (KNWR) was established in 1941 for the purpose of protecting the habitat of Kenai Peninsula moose. In 1964 the Secretary of the Interior modified the boundary of KNWR, moving the boundary from the western coastline of the Kenai Peninsula to its present location and withdrawing 21,000 acres from the KNWR along a strip between Captain Cook State Recreation Area (CCSRA) to Point Possession for development. In 1981 a KPB Resolution was implemented to acquire certain parcels of the Kenai National Moose Range in exchange for KPB lands. Once the former Moose Range property was KPB ownership, a resolution was passed to zone the property for residential development. During the process of subdividing the Gray Cliff and Moose Point subdivisions the KPB established a 100-foot wide transportation corridor to provide access to the lots that were offered for sale. This project is located within that transportation corridor. This section describes existing conditions and potential impacts of the proposed project alternatives related to land use. Information was gathered from the 2005 Kenai Peninsula Borough Comprehensive Plan. In addition, site reconnaissance was conducted in June 2016.

4.2.1.1. Existing and Planned Land Uses
The project area is within a rural, relatively isolated, and unincorporated section of KPB that includes a mixture of land uses: forest and recreational lands, federal lands and private properties. Approximately 358,000 acres, or 3.4% of the Kenai Borough, is in small privately owned tracts, obtained through homesteads, home sites. Majority of the development in the Borough is concentrated on this private land. Native allotments, and other state, federal and borough land disposal programs make up the remaining 96.6% land ownership. Land use within the project is mapped and shown on Figure 6. The occupied residential parcels are located throughout the length of the project. Most accessory building (cabins and storage buildings) are more concentrated along the south end of the project. The population of the Kenai Peninsula Borough increased by approximately 25% between 2000 and 2010, the number of parcels used for residential purposes increased by 30%. This may be due to a variety of factors, including an increase in the number of vacation or second homes and a decrease in household size.
4.2.2. Environmental Consequences

4.2.2.1 No Action
Under the No Action Alternative, residential development Gray Cliff and Moose Point Subdivisions would likely occur at the present pace, which is likely slower than the Build Alternative.

4.2.2.2. Build Alternative
4.2.2.2.1 Direct Impacts
The project would improve access to Gray Cliff and Moose Point Subdivisions and terminates at the bridge crossing Otter Creek. It does not provide access to other new areas (other than as described in Indirect Impacts below), it would not directly affect land use in the project area, other than the land in the proposed ROW directly converted to transportation use. Because the proposed road improvement would improve access to Gray Cliff and Moose Point Subdivisions, as well as the Kenai National Wildlife Refuge, it is possible that development of individual parcels within the planned residential developments could occur sooner, but would not result in a change in the land use as land use is subject to current and future KPB land-use plans. Any change in use would require a change in the comprehensive land use plan.

4.2.2.2.2. Indirect Impacts
The Build Alternative would allow improved material and equipment access, thereby potentially facilitating a slightly increased rate of development of Gray Cliff and Moose Point Subdivisions, particularly those parcels with current access to the corridor. The majority of parcels are currently landlocked or otherwise inaccessible, and would remain so.

Figure 7. Land Use Kenai Spur Extension

[Source: Kenai Peninsula Borough GIS]
4.2.2.2.3. Cumulative Impacts
Past actions had the most measurable effects on land use in the area. The most likely cumulative impacts or unusual circumstances are related to increased rate of development of the existing platted subdivisions of Gray Cliff and Moose Point through improved material and equipment access. Any new proposed land used activities will require compliance with the Kenai Peninsula Borough Comprehensive Plan.

4.2.2.2.4. Mitigation Measures
Any proposed land use activities will require compliance with the 2005 Kenai Peninsula Borough Comprehensive Plan, or future comprehensive land use plan. KPB will keep the public informed of changes in the comprehensive land use plan through the KPB website and newspaper notices (e.g. Peninsula Clarion).

4.3. Recreation
This section describes existing recreation opportunities within the project area. Information was gathered from the 2010 Kenai National Wildlife Refuge Comprehensive Conservation Plan, Kenai National Wildlife Refuge Visitors Guide and 2013 North Peninsula Recreation Service Area Master Plan.

4.3.1. Affected Environment
The project area is surrounded by outdoor recreation. Nearby is the East Foreland Lighthouse reserve, the Captain Cook State Park, the Kenai National Wildlife Refuge (KNWR) and the Chugach National Forest. There is no shortage of greenspace for the community to get outside. For indoor recreation, the nearby community of Nikiski has the North Peninsula Recreation Center. The KSH extension is immediately adjacent to the KNWR. The KNWR provides recreation opportunities including, but not limited to: hiking, wildlife viewing, camping (including cabins), canoeing, cross-country skiing and fishing.

4.3.2. Environmental Consequences

4.3.2.1 No Action
The No Action Alternative would not change or otherwise affect recreation opportunities in the project area.

4.3.2.2. Build Alternative
4.3.2.2.1. Direct Impacts
The Build Alternative would improve recreational access to the KNWR by providing a stable, year-round traveling surface and the public would not need ORV/ATV get closer to the boundary of the Refuge. During construction, there will be construction delays that could temporarily disrupt access to open space destinations beyond the project limits. Coordination efforts prior to, and during construction activities with entities interacting with tourists (Nikiski Chamber of Commerce, Kenai Peninsula Borough, USFWS) would minimize impacts to tourists.

4.3.2.2.2. Indirect Impacts
Because of the stable, year-round traveling surface adjacent to the boundary of the Refuge there could be more year-round access and recreational use of the KNWR, but the impact is minimal because of the sheer size of the Refuge (approximately 1,987,202 acres) and relatively remote location.
4.3.2.3. Cumulative Impacts
There are no known changes to use or management of the Kenai NWR that could be affected by this proposed action.

4.3.2.4. Mitigation Measures
The following mitigation measure is recommended to minimize potential impacts to recreation. Mitigation measures related to transportation and access along the KSH also would be applicable to maintaining recreational uses.

- KPB would coordinate with USFWS so that notices regarding KSH delays and closures can be posted on the USFWS KNWR website, in newspapers (e.g. Peninsula Clarion), etc.;

4.4. Wetlands
This section describes wetlands within the project area. Information was gathered from the US Army Corps of Engineers 404 Permit POA-2014-460, the Kenai Spur Extension POA-2014-460 Supplemental Information prepared by Kenai Peninsula Borough Road Service Area and the reissued permit POA-2015-460-M1.

Figure 8. Wetlands in and near the Kenai Spur Extension

(Source: Kenai Peninsula Borough GIS)

4.4.1. Affected Environment
Approximately 50% of the wetlands in the project area are palustrine-emergent (PEM) wetlands. Palustrine forested wetlands (PFO) and palustrine scrub shrub (PSS) wetlands each make up approximately 25% of the wetlands in the area (see Figure 7). The disturbed wetlands in the area have been subject to ongoing, persistent disturbance to both the surface soils and the vegetation due to off-road vehicle use. Information was gathered from the US Army Corps of Engineers 404 Permit POA-2014-460 and the Kenai Spur Extension POA-2014-460 Supplemental Information prepared by Kenai Peninsula Borough Road Service Area.
4.4.2. Environmental Consequences

4.4.2.1. No Action
Under the No Action Alternative existing impacts to wetlands and fish streams in the area will likely continue or worsen because of the unimproved existing travel conditions. Because of the unimproved nature of the route and presence of wetlands, the continuous ORV/ATV traffic has resulted in several large, impassable sinkholes that have formed requiring travelers to bypass on one side or the other. This has resulted in multiple vehicle trails that are ever expanding and will continue to expand to the extents of the ROW.

4.4.2.2. Build Alternative

4.4.2.2.1. Direct Impacts
The Build Alternative would result in permanent impact to and loss of 14.0 acres of wetlands. The construction of the KSH extension will require filling and building on top of existing wetlands. The project road and trail alignment have been mapped and impacts to wetlands minimized to the extent practicable. Wetlands are widespread in western Kenai Peninsula lowlands and cannot be completely avoided by this project. Although the project footprint will result in the permanent loss of 14.0 acres of wetlands and 497 linear feet of stream habitat, constructing the road will reduce or eliminate the chronic wetland and stream degradation occurring from off-road vehicle use and will contribute to the conservation of wetlands, streams and wildlife habitat along the proposed road, as well as improving water quality in the streams and wetlands. Temporary impacts to wetlands are more likely to occur at locations immediately adjacent to where the KSH extension is to be constructed. Temporary disturbances to wildlife activity, hydrology and water quality will be avoided as much as possible through the use of Best Management Practices (BMPs).

4.4.2.2.2. Indirect Impacts
The proposed roadway extension would allow private property owners improved access, increased residential development could result in the discharge of fill into wetlands for the construction of additional side roads, homes and utility installation. Increased access could also facilitate the spread of invasive wetland plant species from within and outside the project corridor.

4.4.2.2.3. Cumulative Impacts
Past activities in the project area have likely impacted wetlands through ground-disturbing and development activities, though most of the land outside of the KPB ROW remains forested. Though no future public works projects or private developments are identified at this time, future development in the area could impact wetlands.

4.4.2.2.4. Mitigation Measures
The following mitigation measures are recommended to minimize potential impacts to wetlands:

- Avoidance:
  - Full avoidance of wetlands by siting the project turnarounds and all but 1 turnout in upland areas.
  - Fill area boundaries will be clearly delineated in the field to avoid accidental impacts from equipment operation and fill material placement.
  - In wetlands, the Contractor may not place fill (including clearing debris) outside the designated 29.5’ wide construction zone.
The contractor may not clear vegetation or run equipment outside the designated 40’ wide clearing zone.

Minimization:
- Using a corridor that is already designated ROW, which has been identified for road construction by the KPB. The KPB received federal funding for road construction in the Gray Cliff ROW in the 1990s, and has planned for development of an access road to the Gray Cliff subdivision and further north since subdividing the area.
- Using a corridor that is already degraded by off-road vehicle use, and placing the road within degraded wetlands rather than undisturbed wetlands, on unavoidable wetland crossings.
- Construction of an 18’ wide one-lane driving surface with 2:1 shoulders itself reduces additional impacts to Waters of the US than a KPB standard 28’ wide two-lane driving surface with 2.5:1 shoulders would cause. This design width exception reduces the wetland impact footprint by 4.6 acres.
- Clearing minimum width necessary for project construction and safe operation. On segments crossing wetlands, the maximum clearing width is 40 feet, rather than the 50-foot limits used in uplands.
- Not grubbing wetlands and in uplands not grubbing land outside the project footprint.
- Using steep (2:1) road embankment slopes on wetland crossings to minimize the footprint width while providing long-term stability. The steeper slopes are anticipated to deter off-road vehicle users from leaving the roadway.
- Installing culverts and drainage mat in wetland areas as appropriate to minimize road effects on natural drainage patterns and to restore hydrologic flow currently impacted by extensive off-road vehicle use.
- Implement all BMPs and conditions identified in US Army Corps of Engineers Permit POA-2015-460-M1 and Alaska Department of Fish & Game Habitat Permits.

4.5. Floodplains
Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

4.5.1. Affected Environment
None of the project area falls within a FEMA-regulated 100-year flood plain.

4.5.2. Environmental Consequences
Since there are no floodplains in the project area, the Build Alternative will have no impacts on floodplains.

4.6. Fish, Wildlife, and Vegetation
This section describes the potential impacts of the proposed road improvements on fish, wildlife and vegetation. The proposed road improvements would remain within the KPB ROW immediately adjacent to the Andeavor AK Pipeline and Harvest Pipeline Company utility pipeline easement.
Vegetation: much of the project corridor is occupied by degraded habitats, a result of maintenance the historic Andeavor AK Pipeline and Harvest Pipeline Company utility pipeline as well as years of continuous disturbances as a result from ORV/ATV off-tracking.

4.6.1. Affected Environment
The project area is immediately adjacent to the KNWR and is home to a wide diversity of wildlife including moose, eagles, brown and black bears, lynx, wolves, and trumpeter swans. Leif’s Creek and Otter Creek have runs of anadromous salmonids.

Vegetation: much of the project corridor is occupied by degraded habitats, a result of maintenance of the pipeline corridor for over 30 years, as well as continuous disturbances from ORV/ATV off-tracking. All construction staging and vegetation clearing would occur within the designated 40-foot wide construction zone.

4.6.2. Environmental Consequences

4.6.2.1. No Action
Under the No Action Alternative, anadromous and local rearing streams are being crossed in an expanding footprint by off road vehicles causing loss of fish habitat and impacts downstream. Wildlife habitat would be degraded from the chronic disturbance to the vegetation and not allow for natural succession of the vegetation community. Continuous vegetation disturbance from ORV/ATV off-tracking would not allow native vegetation to re-establish and allow for invasive, weedy species such as reed canary grass to spread.

4.6.2.2. Build Alternative

4.6.2.2.1. Direct Impacts
There will be a permanent loss of wetland and upland habitat available for wildlife as it is converted to roadway. During construction of the KSH extension there will be temporary, localized disruption to wildlife from construction noise and vegetation clearing. There would be temporary loss of habitat due to construction-related clearing but the disturbed areas would be re-vegetated to re-establish habitat value.

4.6.2.2.2. Indirect Impacts
Kenai Peninsula supports multiple species of terrestrial and avian wildlife. The proposed roadway extension would allow for autos to travel the KSH extension at higher speeds than ORV/ATV traffic could travel, this can increase the risk of wildlife collisions. The loss of wetland and upland habitat that is converted to a roadway could have an effect on local wildlife populations but the anticipated level of impact would be low because of the abundance of adjacent wildlife habitat. The habitat that will be lost is relatively low quality due to the ongoing disturbance. Native vegetation and disturbed areas outside the road prism would become re-established as off-tracking by ORVs/ATVs is eliminated.

4.6.2.2.3. Cumulative Impacts
Improved access to platted lots could facilitate increased rate of development and vegetation removal of these private lots adjacent to the to the KSH extension.

4.6.2.2.4. Mitigation Measures
The following mitigation measures are recommended to minimize potential impacts to fish and wildlife resources during construction:

- Limited tree cutting/clearing between May 1 and July 15
• Implement all BMPs and conditions identified in US Army Corps of Engineers Permit POA-2015-460-M1 and Alaska Department of Fish & Game Habitat Permits.
• All equipment working in project area would be free of weed seed.
• Precautions would be taken to prevent the introduction and spread of weeds caused by moving weed-infested sand, gravel, borrow, and fill material.
• In addition to Leif’s Creek and Otter Creek, two other un-named streams support anadromous fish and 4 other streams support resident fish. All stream crossings will be designed to meet Alaska Department of Fish and Game (ADF&G) fish passage criteria.

4.7. Cultural and Historic Resources
This section describes cultural resources and potential effects within the Area of Potential Effect (APE). For the purpose of complying with Section 106 of the National Historic Preservation Act, the APE is defined as the designated construction zone + 5 feet on each side (50-feet corridor).

4.7.1. Affected Environment
Evidence for the earliest human occupation in the region comes from radiocarbon dates and comparisons with stone tools found at other prehistoric Alaska sites. Dates over 5000 years old were from a site at the Kenai River-Russian River junction (Mobley 2012), and a site in Kachemak Bay.

About 1000 years ago, Athabaskans from Alaska’s interior displaced the Eskimo- or Alutiq-related population from Cook Inlet (Mobley et al. 2003:9-12). The Dena’ina Indians that Europeans encountered in Cook Inlet in the late 1700s are considered to be direct descendants of the original Athabaskan immigrants a millennium ago. Archaeological sites typically consist of rectangular or circular depressions representing the remains of semi-subterranean houses or food caches, often associated with salmon – particularly silver salmon streams. Artifacts are few in Dena’ina sites, as are bones and shells. In 2011 the known archaeological sites in the study area were presumed to be of Dena’ina origin.

A cultural resource survey was conducted within the project Area of Potential Effect (APE) September 24-28 and October 9, 10 and 12, 2014. No historic sites were identified, the Alaska Office of History and Archeology (OHA) concurred with this determination September 25, 2017.

4.7.2. Environmental Consequences

4.7.2.1. No Action
With the No Action Alternative, ORV/ATV off-tracking would continue, similar to existing conditions; but would not likely disturb or adversely affect cultural or historic resources, based on the Apache Alaska Corporation Cultural Resources Plan finding that archaeological material or historic-period buildings or structures are unlikely to exist in the project area.

4.7.2.2. Build Alternative
No previously recorded cultural resources will be affected by the Build Alternative.

4.7.2.2.1. Direct Impacts
While no cultural resources were identified on the KSH Extension during previous inventories, there were resources identified in relatively close proximity. There is always a possibility that unanticipated resources will be found through ground disturbance.

4.7.2.2.2. Indirect Impacts
There are known cultural resources in the vicinity but no cultural resources identified within the project APE. Project BMPs will limit the ground disturbance to within the clearing limits.
Improved access by constructing the road extension could potentially allow access and possibly impacts to known cultural resources outside of the project APE.

### 4.7.2.2.3. Cumulative Impacts

The proposed project would not result in disruptions or other adverse direct, indirect, or cumulative impacts to cultural or historic resources, based on the finding that no cultural resources are likely to exist in the project area.

### 4.7.2.2.4. Mitigation Measures

The following mitigation measures are recommended to minimize potential impacts to cultural resources:

- If previously unknown archeological materials or human remains are discovered during the course of construction, all activities will cease in the immediate area of the finds pending further recommendations from the FHWA in consultation with the Alaska OHA.

### 4.8. Soils and Geology

This section describes the potential impacts of the proposed road improvements on soils and geology. The geology of the area is bedrock overlain by a widespread complex of unconsolidated deposits laid down as a direct or indirect consequence of glaciation or by subsequent stream activity (Riehle, et.al. 1977).

#### 4.8.1. Affected Environment

Fifteen soils were mapped in and within 500 feet of the project corridor by the Natural Resources Conservation Service, (NRCS web soil survey). Mapped soils units in the proposed ROW range from well drained soils, with hydric inclusions, to very poorly drained. The wetlands were located primarily on the Nikolai peat and Cohoe-Nikolai complex, which are hydric soil units. However, a portion of the wetlands are also located on Naptowne silt loam units. Naptowne silt loam is not a hydric soil, but the mapped units contain Nikolai and Starichkof inclusions, which are hydric. Those wetlands on the Naptowne silt loam tend to be smaller and spread out. Those wetlands on the Nikolai peat units tend to form larger complexes. Large peat wetlands have pore spaces which are used by salmon for overwintering.

#### 4.8.2. Environmental Consequences

##### 4.8.2.1. No Action

Under the No Action Alternative, soils within the ROW will continue to be disturbed as a result of the continuous ORV/ATV traffic creating multiple vehicle trails that are ever expanding and will continue to expand to the extents of the ROW.

##### 4.8.2.2. Build Alternative

#### 4.8.2.2.1. Direct Impacts

Exposed areas of fresh cuts and fills are subject to wind and water erosion. The proposed Build Alternative is a fill project, it would not expose new soils or rock cuts, it would not result in new impacts to the soils and geology of the area and affects would be limited to within the designated 40’ wide construction zone. Appropriate sediment and erosion control BMPs would be installed before construction begins and would be maintained in working order throughout the construction period and until vegetation is established. Overall, the Build Alternative would have only minor and localized impacts to the soils and geology of the area.
4.8.2.2. Indirect Impacts
The Build Alternative is a fill project and would have negligible impacts to the soils and geology of the surrounding area.

4.8.2.2.3. Cumulative Impacts
The effects of the Build Alternative on past, current, or future public or private activities that are reasonably certain to occur within project area would be limited in scope and effect. Mitigation measures as described below would further limit cumulative impacts.

4.8.2.2.4. Mitigation Measures
The following mitigation measures are proposed to reduce the levels of impact to soils and geologic resources from the Build Alternative:

- Topsoil would be conserved and stockpiled for later use to enhance revegetation success.
- Locally native plants would be used to improve the revegetation rate.
- Appropriate sediment and erosion control BMPs would be put into place before construction begins and would be maintained in working order throughout the construction period and until vegetation is established.

4.9 Noise
This section describes the potential noise impacts of the proposed road improvements. Noise has not been identified as a major concern in the project area.

4.9.1. Affected Environment
With limited access onto the extension of KSH traffic volumes and traffic noise has not been substantial. The project study area is defined as a buffer 3,200 feet from the limits of construction, based on the distance that construction noise would travel over land. The distance of 3,200 feet was calculated based on guidance from the FHWA Noise Barrier Design Handbook.

4.9.2. Environmental Consequences

4.9.2.1. No Action
ATV/ORV traffic would be expected to slowly increase over time with the No Action Alternative. However, since traffic volumes are expected to remain relatively low, the no Build Alternative is not expected to result in considerable long-term increases in noise.

4.9.2.2. Build Alternative

4.9.2.2.1. Direct Impacts
A temporary increase in noise levels in the vicinity of the project would occur due to construction activities associated with the Build Alternative. To minimize the temporarily higher noise levels, all equipment would be required to comply with FHWA’s standard noise mitigation measures. With reliable year-round access traffic would be expected to increase over time more than with the No Build Alternative. However, even with an increase in traffic, traffic volumes are expected to remain relatively low and not expected to result in considerable long-term increases in noise.

4.9.2.2.2. Indirect Impacts
With improved access allowing automobiles instead of ATV/ORVs traffic would be expected to increase over time more than with the No Build Alternative but not expected to result in considerable long-term increases in noise.
4.9.2.2.3. Cumulative Impacts
With a slight increase in year-round traffic, traffic volumes are expected to increase but remain relatively low with perhaps a slight increase in the frequency of noise elevated above ambient levels.

4.9.2.2.4. Mitigation Measures
The following mitigation measures would be implemented to reduce the levels of impacts from noise generation from construction of any of the Build Alternatives:

- All equipment would have sound control devices no less effective than those provided on the original equipment. All equipment would have muffled exhaust.
- All equipment would comply with pertinent noise standards of the EPA.

4.10 Visual Quality
This section describes the potential impacts of the proposed road improvements on visual quality. There are no officially designated scenic areas or attributes in the project area.

4.10.1. Affected Environment
The project area is a combination of rural development, federal land (KNWR) and Alaska native owned corporation land (Cook Inlet Region Inc.) varying from mostly natural to degraded.

4.10.2. Environmental Consequences

4.10.2.1. No Action
The visual elements of the project area would remain the same as existing conditions with the No Action Alternative.

4.10.2.2. Build Alternative
The Build Alternative would impact the visual qualities of the area very little.

4.10.2.2.1. Direct Impacts
Impacts from the Build Alternative would be minor, the ROW has been cleared of vegetation and has existed for over 35 years. The project would be constructing a road with minor fills in an area that land use is mainly rural residential or vacant, and is not designated as scenic.

4.10.2.2.2. Indirect Impacts
Indirect impacts to visual quality may occur as a result of improved access allowing for residential development and vegetation clearing of some of the platted parcels within Gray Cliff and Moose Point Subdivisions, but the impact would be minor, the remaining undeveloped properties are regulated to what was platted by the Borough.

4.10.2.2.3. Cumulative Impacts
Incremental impacts to visual quality from the Build Alternative, when added to other past, present, and reasonably foreseeable future actions, would result in minor or non-substantial cumulative impacts to visual resources.

4.10.2.2.4. Mitigation Measures
- All disturbed areas will be reseeded with native vegetation.

4.11 Air Quality
This section describes the potential impacts of the proposed road improvements on air quality. The federal government has established National Ambient Air Quality Standards to protect the public from air pollution. Designated “attainment” areas are areas that have not violated these air quality standards. Geographic areas
where concentrations of a pollutant exceed the ambient air quality standards are classified as “non-attainment” areas. Areas previously designated as non-attainment that are now in compliance with air quality standards are classified as “maintenance” areas.

4.11.1. Affected Environment
The project corridor is situated within an EPA air quality “attainment” area for all regulated pollutants.

4.11.2. Environmental Consequences

4.11.2.1. No Action
The No Action Alternative would not result in any change of air quality in the area.

4.11.2.2. Build Alternative

4.11.2.2.1. Direct Impacts
Vehicle traffic on a graveled surface for the 8.1 miles to Otter Creek could produce dust during dry seasons. However, the amount of expected growth in vehicle traffic from this project is so small, it would not have measurable impacts on air quality, nor would it be expected to cause the area to be designated a non-attainment area. The project area is not listed among the U.S. EPA nonattainment areas for criteria pollutants (U.S. EPA 2010). During construction, it could be expected there be a temporary increase in exhaust and fugitive dust. These impacts would be minimized through the implementation of construction BMPs.

4.11.2.2.2. Indirect Impacts
Minor impacts to the surrounding environment would include a slight increase in the emission of air pollution, possibility of dust from the travel way migrating to areas adjacent to the travel way. However, the levels of traffic, coastal climate, and lack of sensitive locations along the road/trail will combine to minimize these affects.

4.11.2.2.3. Cumulative Impacts
Incremental impacts to air quality from the Build Alternative, when added to other past, present, and reasonably foreseeable future actions, are not expected to adversely affect regional or local air quality.

4.11.2.2.4. Mitigation Measures
The mitigation measures are recommended to minimize potential impacts to air quality during construction:
- Operate all equipment in accordance with manufacturer’s recommendations to minimize emissions
- Shut down idling heavy equipment when not in use
- Implement BMPs during construction activities to mitigate fugitive dust and reduce particulate matter emissions, e.g. apply water as needed to control fugitive dust emissions
- KPB will utilize calcium chloride as part of the routine road maintenance program as a dust calming measure

4.12 Water Quality
This section describes the potential impacts of the proposed road improvements on water quality.

4.12.1. Affected Environment
Water quality data are generally unavailable for surface waters within the study area. None of the water bodies within the project corridor (or flowing into waters within the study area) are listed on the Alaska
4.12.2. Environmental Consequences

4.12.2.1. No Action

ORV/ATV activities and off-tracking have caused significant degradation to streams such as Leif’s Creek and Otter Creek; both of which support anadromous fish runs, as well as significant degradation to wetland and upland habitats. This activity has also caused erosion, sedimentation and water quality degradation to Leif’s Creek and the associated turbid runoff and sedimentation into Cook Inlet. Chronic sediment discharge into Leif’s Creek, Otter Creek and Cook Inlet will continue with the No Action Alternative. Existing risk of long-term adverse impacts to water quality associated with ATV crossings through anadromous fish streams during periods when the ground is not frozen will continue. The continued use of the unimproved trail through bogs and wetlands will also continue to intercept, concentrate, and otherwise change surface water drainages. ORV/ATV travel along the beach during low tide will continue.

4.12.2.2. Build Alternative

4.12.2.2.1 Direct Impacts

The Build Alternative will have impacts to water quality. The ecosystem’s capacity for water quality treatment will be slightly reduced as a result of the loss of 14.0 acres of wetlands providing sediment filtration, nutrient uptake and other water quality functions. These impacts will be mitigated through reduced non-point pollution as a result no more off-tracking which will lessen sedimentation into Leif Creek as it discharges into Cook Inlet. Wetland surface hydrology and connectivity would be bisected by the road fill. Disconnects in wetland surface hydrology would be minimized through installation of cross-drain culverts. During construction, there would be temporary impacts to water quality as a result of filling 14.0 acres of wetlands. These impacts would be minimized through the implementation of BMPs during construction. A permanent road will compact underlying soil and reduce the soil surface area available for infiltration. Due to the expanse of similar soils in the study area, this will have a negligible effect on the recharge potential of the soils during precipitation events.

4.12.2.2.2 Indirect Impacts

Increased usage of the KSH extension would increase pollutants from auto vehicles (dust and vehicle leaks). However, traffic is still relatively low and will produce minimal pollutants.

4.12.2.2.3 Cumulative Impacts

Improved access to platted lots could facilitate increased rate of development and thus cause minor water quality degradation as a result.

4.12.2.2.4 Mitigation Measures

- ADF&G permits have been obtained to cross two streams that are occupied by anadromous fish, as well as three other streams that contain resident fish. Currently, ORV/ATVs are crossing through the streams causing loss of habitat by degrading the bank habitat and increasing sediment load within the corridor.
- Installing culverts and drainage mats in wetland areas as appropriate to minimize road effects on natural drainage patterns and to restore hydrologic flow currently impacted by extensive off-road vehicle use.
- Contractor will develop a Stormwater Pollution Prevention Plan (SWPPP) and BMPs would be implemented to control and prevent stormwater runoff from causing
sedimentation in the wetlands, and turbidity in the open waters. Erosion control measures would be left in place until vegetation becomes established.

- No storage of fuel, vehicle fueling or maintenance would be conducted within 100 feet of water bodies.
- An Erosion and Sediment Control Plan (ESCP) will be developed during design, which will address what specific BMPs will be used on this project. The ESCP will focus first on efforts to prevent the movement of sediments and silts.

4.13 Hazardous Materials and Spills
This section describes the potential impacts of the road improvements from hazardous materials and spills.

4.13.1. Affected Environment
A review of Alaska Department of Environmental Conservation (ADEC) Contaminated Sites database indicates there are no known sites with potentially hazardous materials within the Area of Potential Affect (APE) of the project.

4.13.2. Environmental Consequences

4.13.2.1. No Action
There are no known hazardous materials sites within project construction limits, the risk of a petroleum spill from the ongoing ORV/ATV activities traveling the corridor would remain.

4.13.2.2. Build Alternative

4.13.2.2.1. Direct Impacts
Since there are no hazardous materials sites within project construction limits, the project will have no impact on hazardous materials. During construction of the Build Alternative, there would be a potential for hazardous material spills to occur. Construction contracting would require the contractor to develop a Spill Prevention Control and Countermeasures (SPCC) Plan. In the event of a hazardous material spill, the responses detailed in the spill plan would be implemented.

4.13.2.2.2. Indirect Impacts
Fuel, as well as other potentially hazardous materials, will likely be transported on the travelway and spills may occur over the 20-year life of the road. Low traffic volumes and the small quantities of fuel likely to be transported would not result in more than minimal long term risk of contamination from spills.

ADEC regulations for clean-up would be followed for any spill that might occur.

4.13.2.2.3. Cumulative Impacts
There are no known future public or private activities that are reasonably certain to occur within project area that bring the risk of contaminated or hazardous materials.

4.13.2.2.4. Mitigation Measures
- WFLHD contract specifications will require the contractor to prepare and implement a SPCC Plan during construction.
- If unexpected contamination is encountered during construction, all work in the contaminated area would be halted and the CO contacted immediately. All contaminated material will be handled and disposed of in accordance with ADEC regulations.
4.14 Social and Community

4.14.1. Affected Environment
The small residential community within the project area is home to those who value what the area has to offer, including the nearby KNWR, a rural way of life, opportunities for larger parcels of land, forest resources, recreational opportunities, solitude and quiet, wildlife viewing and more.

4.14.2. Environmental Consequences

4.14.2.1. No Action
Under the No Action Alternative, residential development Gray Cliff and Moose Point Subdivisions would likely occur at the present pace, access to recreational opportunities within the KNWR would remain limited, the nearby community of Nikiski would be unaffected.

4.14.2.2. Build Alternative
The build alternative will be entirely within the KPB ROW and not displace any existing residences. Construction is not expected to impact local schools, police, fire protection, access to local medical services, or local utilities.

4.14.2.2.1. Direct Impacts
In the immediate vicinity of the community of Nikiski, traffic volumes could temporarily increase temporarily during construction. During construction of the build alternative, residents and visitors to the area may experience brief delays or local detours. The likely material site for the road extension is outside (North) of Nikiski proper, closer to the KSH extension and associated truck hauling traffic delays would be outside of Nikiski. Project construction could provide short-term construction-related employment opportunities in the area, which could result in minor, temporary increases in sales for nearby businesses.

4.14.2.2.2. Indirect Impacts
Construction is not expected to impact schools, police, fire protection, access to medical services, or utilities in the Nikiski area. Providing year-round access will be beneficial to the community because of reliable year-round access for medical and public safety services.

4.14.2.2.3. Cumulative Impacts
Due to the isolated and rural nature of the residential developments of Gray Cliff and Moose Point, the build alternative, when combined with other reasonably foreseeable past, current, and future activities, is not reasonably expected to cause a long-term change to the population and community character. Improved access would improve recreation opportunities in the KNWR.

4.14.2.2.4 Mitigation Measures
- KPB regularly post construction schedules and information on the agency website.

4.15 Environmental Justice
Executive Order (E.O.) 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations - was issued by President William J. Clinton in 1994. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities.

The E.O. directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. The order also directs each agency to develop a strategy for
implementing environmental justice. The order is also intended to promote nondiscrimination in federal programs that affect human health and the environment, as well as provide minority and low-income communities access to public information and public participation.

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

4.15.1. Affected Environment

From 2010 census data revealed within the Borough there were 55,400 people, 18,400 households, and 12,700 families residing in the borough. The population density was 3.4 per square mile (mi²). There were 24,900 housing units at an average density of 2 per square mile (1/km²). The racial makeup of the borough was 84% white, 8% Native American, 2% Hispanic or Latino (any race), and 4% from two or more races. Black or African Americans, Asians, and Pacific Islanders each were less than 1% of the population. Just under 1% were from other races combined. 1.92% reported speaking Russian at home, while 1.74% speak Spanish. 11.4% of the population is below the poverty level. Under EO 12898 the Borough meets the criteria for a minority and low-income population.

Federal actions may create a potential EJ concern if the Federal Agency does not provide meaningful involvement opportunities to minority populations, low-income populations, tribes, and indigenous peoples during the development of the action. The KPB has been engaging the affected public, the Borough has provided project updates on their website as well as a public meeting held June 22, 2017 attended by over 30 local citizens and interested parties.

No residents or businesses would need to be displaced or relocated as a result of the project. Also, the short-term, construction related impacts and long-term impacts and benefits would affect project users on an equal basis. Opportunities for employment during project construction and the long-term road safety improvements would extend to minorities and people with low incomes in nearby communities and thus could benefit these groups. In conclusion, the build alternatives would not result in, “… disproportionately high and adverse… effects on minorities and low-income populations.”

5. Section 4(f) Evaluation/Discussion

The U.S. Department of Transportation (USDOT) Act of 1966 includes a special provision, Section 4(f), which stipulates that the FHWA and other USDOT agencies may not grant approval for a project if it uses land that is a publicly-owned park, recreation area, wildlife and waterfowl refuge, or any significant historic site unless: 1) there is no prudent and feasible alternative to the use of such land, and 2) any such program or project includes all possible planning to minimize harm to these resources.

The statute itself specifies that Section 4(f) applies when a U.S. DOT agency approves a transportation program or project that uses Section 4(f) property. The proposed project is entirely within KPB ROW and thus is not a Section 4(f) property.
6. Irreversible or Irretrievable Commitment of Resources

Irreversible commitments are those that cannot be regained, such as the extinction of a species, the expenditure of federal funds, or the removal and use of fossil fuels. Irretrievable commitments are those that are lost for a period of time, such as the loss of production, harvest, or use of renewable resources. Fossil fuels, labor, and construction materials such as aggregate would be irreversibly expended by construction of the proposed project. Labor and fossil fuels would be consumed during operation of construction equipment for grading, material movement, and construction activities. In addition, labor and natural resources would be used in the fabrication and preparation of construction materials. Construction would also require an expenditure of federal funds that could not be used for any other projects.

7. Cumulative or Interrelated Impacts

Previous sections of this Environmental Assessment described the effective scale for evaluating cumulative effects associated with both the No Action Alternative and the Proposed Action Alternative. Past actions that have had the most measurable effect on the project area include timber harvesting, quarry development and mining, and private residence development. Currently, there are no other planned future public projects or site improvements in the vicinity of the KSH spur extension. As proposed a total of approximately 14 acres of wetland would be permanently impacted by the Build Alternative.
### 8. Summary of Mitigation Measures

#### Table 3. Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation</strong></td>
<td>• Signage installed and public notices locally advertised in advance of and during traffic changes to inform the public;</td>
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<tr>
<td></td>
<td>• Installation and coordination of temporary traffic control devices to minimize the impacts to motorists.</td>
</tr>
<tr>
<td><strong>Land Use</strong></td>
<td>• Any proposed land use activities will require compliance with the 2005 Kenai Peninsula Borough Comprehensive Plan</td>
</tr>
<tr>
<td><strong>Recreation</strong></td>
<td>• FHWA would coordinate with USFWS so that notices regarding KSH delays and closures can be posted on the USFWS KNWR website, in newspapers (e.g. Peninsula Clarion), etc.;</td>
</tr>
<tr>
<td><strong>Wetlands</strong></td>
<td>• Avoidance:</td>
</tr>
<tr>
<td></td>
<td>o Full avoidance of wetlands by siting the project turnarounds and all but 1 turnout in upland areas.</td>
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<tr>
<td></td>
<td>o Construction of an 18’ wide one-lane road with 2:1 shoulders itself avoids additional impacts to Waters of the US that a KPB standard 28’ wide two-lane road with 2.5:1 shoulders would cause. This design width exception reduces the wetland impact footprint by 4.6 acres.</td>
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<tr>
<td></td>
<td>o Fill area boundaries will be clearly delineated in the field to avoid accidental impacts from equipment operation and fill material placement.</td>
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<td>o In wetlands, the Contractor may not place fill (including clearing debris), remove native material or run equipment outside the designated 40’ wide construction zone.</td>
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<tr>
<td><strong>Fish, Wildlife &amp; Vegetation</strong></td>
<td>• Limited tree cutting/clearing between May 1 and July 15</td>
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<td></td>
<td>• Locally native plants would be used to improve the revegetation rate.</td>
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<tr>
<td></td>
<td>• Implement all BMPs and conditions identified in US Army Corps of Engineers Permit POA-2015-460 and Alaska Department of Fish &amp; Game Habitat Permits.</td>
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<tr>
<td></td>
<td>• All equipment working in project area would be free of weed seed.</td>
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<td>• Precautions would be taken to prevent the introduction and spread of weeds caused by moving weed-infested sand, gravel, borrow, and fill material.</td>
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<td>• In addition to Leif’s Creek and Otter Creek, two other un-named streams support anadromous fish and 4 other streams support resident fish. All stream crossings will be designed to meet Alaska Department of Fish and Game (ADFG) fish passage criteria.</td>
</tr>
<tr>
<td><strong>Cultural and Historic Resources</strong></td>
<td>• If previously unknown archeological materials or human remains are discovered during the course of construction, all activities will cease in the immediate area of the finds pending further recommendations from the FHWA in consultation with the Alaska OHA.</td>
</tr>
</tbody>
</table>
| Soils and Geology                          | • Topsoil would be conserved and stockpiled for later use to enhance revegetation success.  
• Appropriate sediment and erosion control BMPs would be put into place before construction begins and would be maintained in working order throughout the construction period and until vegetation is established. |
| Noise                                      | • All equipment would have sound control devices no less effective than those provided on the original equipment. All equipment would have muffled exhaust.  
• All equipment would comply with pertinent noise standards of the EPA. |
| Visual Quality                             | • All disturbed areas will be reseeded with native vegetation. |
| Air Quality                                | • Operate all equipment in accordance with manufacturer’s recommendations to minimize emissions.  
• Shut down idling heavy equipment when not in use.  
• Implement BMPs during construction activities to mitigate fugitive dust and reduce particulate matter emissions, e.g. apply water as needed to control fugitive dust emissions.  
• Utilize calcium chloride as part of the routine road maintenance program as a dust calming measure. |
| Water Quality                              | • ADFG permits have been obtained to cross two anadromous streams; Sta 54+45 and 348+90. Currently, ORV/ATVs are crossing through the streams causing loss of habitat by degrading the bank habitat and increasing sediment load with in the corridor.  
• Installing culverts and drainage mat in wetland areas as appropriate to minimize road effects on natural drainage patterns and to restore hydrologic flow currently impacted by extensive off-road vehicle use.  
• Contractor will develop a Stormwater Pollution Prevention Plan (SWPPP) and BMPs would be implemented to control and prevent stormwater runoff from causing sedimentation in the wetlands, and turbidity in the open waters. Erosion control measures would be left in place until vegetation becomes established.  
• No storage of fuel, vehicle fueling or maintenance would be conducted within 100 feet of water bodies.  
• An Erosion and Sediment Control Plan (ESCP) will be developed during design, which will address what specific BMPs will be used on this project. The ESCP will focus first on efforts to prevent the movement of sediments and silts. |
| Hazardous Materials and Spills             | • WFLHD contract specifications will require the contractor to prepare and implement a SPCC Plan during construction.  
• If unexpected contamination is encountered during construction, all work in the contaminated area would be halted and the CO contacted immediately. All contaminated material will be handled and disposed of in accordance with ADEC regulations. |
| Social and Community                       | • KPB regularly post construction schedules and information on the agency website. |
9. Permits and Approvals

Required permits and approvals would be obtained prior to construction. The following permits and approvals are expected to be required for implementation of the Build Alternative:

- NEPA approval
- Alaska Office of History and Archaeology National Historic Preservation Act and Section 106 - concurrence, File 2017-00792 September 25, 2017
- Alaska Department of Fish & Game, Permits FH 16-V-0247, 16-V-0248, 16-V-0249, 16-V-0250; issued June 29, 2016
- Kenai Peninsula Borough River Habitat Protection District Permit #11145, issued November 6, 2017
- US Fish & Wildlife Service Eagle Take Permit MB56715B-1, issued July 5, 2016
- Alaska Department of Environmental Conservation 401 Water Quality Certification, issued April 13, 2015
- Alaska Department of Environmental Conservation APDES permit (pending)

10. Coordination and Consultation

10.1. Agency Coordination
The project was originally authorized under USACE permit POA-2014-460, issued to the Apache Alaska Corporation on November 18, 2015. In the Public Notice, issued December 19, 2014, USACE made a determination of ‘no effect to historic properties’, and coordinated with the Alaska OHA. There were no listed or eligible properties in the vicinity of the worksite based on a cultural resource survey conducted September 24-28 and October 9, 10, and 12, 2014. As part of the process to modify permit POA-2015-460-M1 USACE reinitiated Section 106 coordination with Alaska OHA and completed consultation on September 25, 2017. OHA concurred with the determination of No Historic Properties Affected.

10.2. Tribal Coordination
As part of the federal action to evaluate and issue the original permit POA-2015-460 USACE posted the proposed action requesting public comment on the proposed project for a 30-day period from December, 2014 to January, 2015. Comment was provided by the Cook Inlet Region Incorporated (CIRI) the Alaska Native corporation representing members that are of Athabascan, Southeast Indian (Tlingit, Haida, Eyak and Tsimshian), Inupiat, Yup’ik, Alutiiq/Sugpiaq and Aleut/Unangax descent. CIRI’s comment letter was in support of the proposed project at the time (construct road extension to provide access to exploratory oil fields) and the applicant at the time (Apache Oil) had conducted adequate effort to minimize wetland impacts.

10.3. Public Involvement
The Kenai Peninsula Borough held a public meeting and Q & A session to inform the public on the Kenai Spur Extension at the Nikiski Community Recreation Center on June 22, 2017. The meeting was attended by over 30 local citizens and interested parties. KPB informed the public of this meeting through a public notice in the Peninsula Clarion as well as posting a notice to the KPB website and social media platforms. The meeting summary is attached, Appendix A.
10.4. List of Preparers

This EA was prepared by Federal Highway Administration, Western Federal Lands Highway Division, with assistance from Kenai Peninsula Borough.

- Steve Morrow, FHWA Environmental Specialist, lead author and manager of environmental compliance activities
- Seth English-Young, FHWA Environmental Specialist
- Kristin Austin, FHWA Stewardship and Oversight Manager
- Henry Knackstedt, Kenai Peninsula Borough Roads Project Manager
11. References


Department of the Army Combined Decision Document for Permit Application POA-2014-460


Henningson, Durham, Richardson (HDR) Engineering, Alaska Inc. Cook Inlet 3D Project Planning Cultural Resources Plan, Final. 2013


Kenai Peninsula Borough GIS http://mapserver.borough.kenai.ak.us/kpbmapviewer/


Kenai Spur Highway Extension Environmental Assessment Draft for Public Review
http://www.kpb.us/nprsa


Kenai Peninsula Borough Road Service Area. Public Meeting minutes, June 22, 2017.  
http://www.kpb.us/rds-service-area/north-road-extension-project


Natural Resources Conservation Service: https://websoilsurvey.nrcs.usda.gov/app/

US Army Corps of Engineers Section 404 Permit POA-2014-460  

US Army Corps of Engineers Section 404 Permit Modification POA-2014-460-M1  
http://www.poa.usace.army.mil/Missions/Regulatory/Permitting-Section-Homepage/

https://www.census.gov/quickfacts/fact/table/kenaipeninsulaboroughalaska,AK/PST045216


Appendix A
06/22/2017

Nikiski Community Recreation Center

Public Meeting Questions/Answers and Additional Information

The meeting recording is also available at www.kpb.us/NRDEXT

Meeting products: project cover sheet, project imagery, Jacob Ladder mitigation project map, FAQs sheets, display board with online address and contact information.

KPB representatives/staff: Wayne Ogle, Assembly Member District #3; Pat Malone, Road Service Area Director; Henry Knackstedt, Roads Project Manager; Brenda Ahlberg, Community & Fiscal Projects Manager

McLane Consulting, Inc.: Gina Debardelaben, Project Engineer

Q: Why is the project not going to be bid by the mile?
A: The project will be bid by the ton due to the material needs, the wetland challenges and the possible subsidence. The contractor will be expected to assume the costs; therefore, bidding the project by ton will be less of a financial risk to the contractor than price by mile. The lower the price, the farther the road can be built.

Q: What is the main expense of the project?
A: The gravel; it is estimated that 130,000 cubic yards will be used.

Q: What is the cost for gravel per cubic yard?
A: The cost of raw versus final product is different. The cost of raw gravel (unprocessed) $1.35 to $2.80. The engineer’s estimate for gravel cost per cubic yard may be released when the design and engineering is finalized.

Q: Is there a local gravel source that can be used for the project?
A: Preliminarily, there isn’t a local site adjacent to the project big enough to provide the amount needed for the project.
Q: Did the Apache engineering provide the match for the grant?
A: Yes, the Apache engineering is part of the 20% match requirement.

*Additional information:* The U.S. Department of Transportation, Division of Western Federal Lands is the grantor of the SAFETEA-LU “Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users” grant in the amount of $5,142,231.38, which requires a 20 percent match. The borough met the match by way of the Apache engineering and permitting products, GIS imagery, borough right of way, Leaf Creek bridge construction, and the Jacob Ladder state grant. The borough ordinance O2016-19-15, match agreement and support documents may be viewed online at [https://kpb.legistar.com/LegislationDetail.aspx?ID=2859479&GUID=D815628C-B8A4-4A32-ACC3-F9BC7526E318&Options=ID|Text|&Search=](https://kpb.legistar.com/LegislationDetail.aspx?ID=2859479&GUID=D815628C-B8A4-4A32-ACC3-F9BC7526E318&Options=ID|Text|&Search=)

Q: Is the $250,000 still available from the state grant in 2002?
A: The information was not available at the meeting; however, provided here.

*Additional information:* The original 1998 SAFETEA-LU allocation was $6,000,000 which required a 20 percent match of $1,230,000. State grant of $250,000 was used as part of the match to complete the phase I environmental assessment (2002 State of Alaska HCS CSSB 29(FIN) am H Chapt. 61, p.41, line 10). The borough ordinance O2002-19-27 and support documents may be viewed online at [http://www2.borough.kenai.ak.us/AssemblyClerk/Assembly/Ordinances/2002/O2002-19-27.pdf](http://www2.borough.kenai.ak.us/AssemblyClerk/Assembly/Ordinances/2002/O2002-19-27.pdf)

This grant was deobligated because it was not feasible to construct the project as originally intended. The remaining fund balance of $5,142,231.38 was set aside until a project could be done in the area. Fast forward to today, and the 2017 grant agreement was released and finalized between the borough and the US Department of Transportation, Division of Western Federal Lands under the SAFETEA-LU program to construct the road extension as a mitigation project, alleviating damages to area wetlands.

Q: Is there an engineer’s estimate for the overall project?
A: There is an engineer’s estimate, but it is preliminary and will not been released as it may be updated after the permitting has been completed.

Q: Has the grant money been given to the borough? And is the interest going into the general fund, and will it be applied to the project also?
A: No the borough does not have full payment of the grant funds and is not collecting interest. The federal grant and the state grant are on a reimbursement basis. This means that the borough submits quarterly narrative and fiscal reports and is reimbursed for actual costs that have been approved by the grantor for payment. The borough must adhere to state and federal laws in order to receive reimbursements.

Q: Is it prudent to do a soils investigation on the project location and to locate a local gravel source? The design has taken into account the soil types in the area, so no additional soils investigation is warranted.

Q: Will you consider the borough providing the gravel?

A: The borough does have a gravel source, but has not been developed.

*Additional Information:* The question of gravel was presented several times throughout the meeting. Developing the borough gravel source would require additional cost and permitting separate from the road construction project. The assessment of gravel grade, quality and quantity may not produce enough material as required (estimated 130,000 cubic yards). This effort would impede the construction timeline. Any development of potential borough gravel sources is the responsibility of the bidding contractors.

Q: How many culverts will be installed? And have you considered possible flooding impacts to nearby private property?

A: There are 1,200 feet of culvert material estimated, additional arch pipes to be installed on anadromous streams, and permeable construction to allow water flow. Additional culverts will be installed as needed during construction.

Q: Who is providing project management?

A: The borough road service area in collaboration with McLane Consulting.

Q: What is the amount of the state grant to be used on the Jacob’s Ladder beach access?

A: The remaining balance of $94,651 is listed as part of the 20 percent match and will be used solely for the Jacob’s Ladder portion of project construction.

*Additional Information:* (Note the amount was incorrectly cited during the meeting.) The borough ordinance O2013-19-01 and support documents may be viewed online at

[http://www2.borough.kenai.ak.us/AssemblyClerk/Assembly/Ordinances/2013/O2013-19-01.pdf](http://www2.borough.kenai.ak.us/AssemblyClerk/Assembly/Ordinances/2013/O2013-19-01.pdf)
Q: The turnouts are for vehicles to pull over?
A: Yes, and they will be constructed on upland areas.

Q: Do we have permitting to go past the design if the project is under budget?
A: The borough is limited to construct only to the proposed area which has been permitted to just beyond Otter Creek. Some road extension is possible only if it does not impact additional wetlands.

Q: What is the cost of maintaining the road?
A: The cost of road maintenance is variable depending on seasonal weather conditions. No evaluation has been performed to estimate the average maintenance cost of this road, but that is a maintenance issue not included with the design and construction phase.

Q: What will constitute improving Jacob’s Ladder?
A: The trail will be ten foot wide surface with two-to-one shoulder slopes. The structural section will be 24 inches on top of textile on the uplands and 30 inches on top of textile in wetlands, using Type I gravel for upland and wetland areas.

Q: Have you considered the traffic impacts on the turnouts at the intersections of Cloudberry and Golden Rod?
A: Subdivision approaches were considered during the Apache public meetings and will be looked at again. Currently, the approaches to platted right of ways are designed at 18’ widths like the north road extension.

Q: Will the Kenai Spur Highway, north of Halibouty Road be improved to handle the truck traffic?
A: This is a state road and it currently isn’t on the schedule for repair or improvement.

Q: Can these funds be used for subdivision roads?
A: No, the funds are specifically for the permitted extension of Spur Highway only.
Q: Will there be preference to local hire; local contractors getting a contract like this?
A: These are federal funds and local preference is not allowed.

Q: Is this contract subject to minority hire?
A: The invitation to bid will be available to anyone.

Additional Information: Qualified bids will be accepted by sealed bid and awarded to the lowest bidder considering that the contractor is fully qualified to complete the project.

Q: Is work on Jacob’s Ladder part of this (schematic)?
A: The work to be completed will be done as a separate bid schedule because the funding is separate (see state grant O2013-19-01).

Q: Is this (road project) designed like any other borough road?
A: The Road Service Area Board approved the design using the borough road standards and granted a variance to build the road 18 feet wide, which allowed for a longer buildout.

Q: What is the contractor going to do with the wood?
A: The contractor is responsible for logistics including woody debris. Specific requirements include mulching along the right of way (ROW); excavation in the upland areas; timbers may be stacked along the ROW for residential use or sold, which is the contractor’s decision; wetlands will be cleared but not grubbed as the root mat provides some reinforcement.

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