

**Taylor Highway MP 64.5 to the Canadian Border**

State Project Number: 66446

Federal Project Number: STP-0785(11)

**ENVIRONMENTAL ASSESSMENT**

Submitted pursuant to 42 U.S.C. 4332(2)(c)

by the

U.S. Department of Transportation

Federal Highway Administration

and

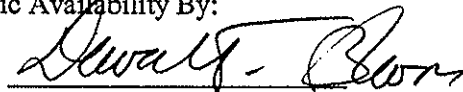
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The Alaska Department of Transportation and Public Facilities, in cooperation with the Federal Highway Administration, proposes to improve the Taylor Highway from the Mosquito Fork Bridge (MP 64.5) to the Alaska/Canada Border. The work entails minor road realignments; roadway widening and surface treatment; bridge replacement and repair; drainage improvements; turnout, wayside, and parking area construction; and highway sign installations.

## EXECUTIVE SUMMARY

This environmental assessment (EA) was completed to comply with the National Environmental Policy Act requirements for proposed improvements to the Taylor/Top of the World Highway in eastern Alaska. The Alaska Department of Transportation and Public Facilities (ADOT&PF), in conjunction with the Federal Highway Administration (FHWA), is proposing to improve the Taylor/Top of the World Highway from milepost (MP) 64.5 to the Alaska/Canada Border (Figure 1). The scope of the project consists of rehabilitation, restoration, and resurfacing of the existing roadway on the same or slightly modified alignment.

### Project Need

The project is needed to restore and improve the structural integrity and drainage of the existing roadway, enhance safety by improving deficient roadway geometry, provide enhancements for recreation along the highway, and provide reliable summer access to the Fortymile Wild and Scenic River (W&SR), Wade Creek recreation area.

### Existing Conditions

Road access into Alaska is limited to two highways, the Alaska Highway and the Taylor/Top of the World/Taylor Highway. The Alaska Highway is the only year-round access. The Top of the World/Taylor Highway is only open to vehicles during snow free months, typically April through mid-October. During the winter snow machines and dog sleds use the road. From MP 64.5 to MP 92 the Taylor Highway winds in and out of the Fortymile W&SR withdrawal which is managed by the Bureau of Land Management (BLM). The Taylor Highway is within the withdrawal for a total of 16.5 miles. Ten of those miles are within the Wade Creek Recreational Withdrawal.

For a large portion of the project area the Taylor Highway is a narrow, windy, gravel road with many steep hills and some hairpin curves. For the first 18 miles of the project (starting at MP 64) the road climbs in and out of river valleys (Chicken Creek, South Fork and Walker Fork) before following the Wade Creek river valley for 10 miles. While in the Wade Creek valley, the road is bound by Wade Creek on the southeast and steep hillsides to the northwest (Appendix A, Photo 1). After the road climbs out of the Wade Creek drainage the topography changes dramatically and the road traverses along the tops of tundra and shrub covered rolling hills offering spectacular scenic vistas (Appendix A, Photo 2).

The first 28 miles of the project travels through an area rich in mining history with remnants of mining equipment scattered through out the area. Visitors to the area have the opportunity to see historic mining camps, dredges, and various other mining equipment that has been abandoned over the years. According

to BLM's *Preliminary Finding (BLM) Pursuant to Section 7 of the Wild and Scenic Rivers Act for the Proposed Taylor Highway Project (MP 64 near Chicken, Alaska, north to the Canadian Border)*, Wade Creek has been moved about for decades by miners whose rights under mining laws supercede the protection provided by the Wild and Scenic Rivers Act. Federal mining claims extend the entire length of Wade Creek. Mining rights also predate the road ROW and over the years the highway has been routinely rerouted in the process of mining operations. Mining has left over 650 acres of river bottom land in unstable condition, moved approximately 1.1 million cubic yards of material, buried dozens of acre-feet of silt in former settling ponds, and created piles of tailings containing thousands of cubic yards of rock. These mining practices have created an unstable creek bed that has contributed to periodic washouts of the Taylor Highway (BLM, 2003).

Current road conditions on the Taylor Highway include:

- No surface aggregate, resulting in a slippery driving surface during wet weather;
- Soft subsiding edges on the roadway;
- A road width averaging 22 to 24 feet wide with no shoulders;
- Inadequate drainage;
- Seasonal flooding and road washouts from adjacent streams;
- Frequent loss of roadway due to water erosion;
- Few scenic pullouts or facilities for travelers; and
- Insufficient access to the Recreational segment (Wade Creek) of the Fortymile W&SR.

During the summer months the Top of the World/Taylor Highways are used frequently by fuel trucks delivering fuel to Dawson City and other communities located along the road. Because the road is closed during the winter, reliable summer access is critical to ensure that enough fuel can be delivered to last the communities through the winter.

### **Alternatives**

Alternatives considered in this document include one Build Alternative and the No-Build Alternative. The Build Alternative would 1) resurface, restore, and rehabilitate the existing highway from the Mosquito Fork Bridge to the Alaska/Canada border; 2) replace the existing one lane bridge over Chicken Creek with a single span, two lane bridge; and 3) provide enhancements for the Wild and Scenic River, recreation section. The No-Build Alternative is used as a baseline for an analysis of the environmental impacts. Under the No-Build Alternative no improvements would be made and the road would continue

with its current level of maintenance and with only cursory repairs being made as needed. The road would continue to be seasonally affected by runoff.

### **Environmental Consequences**

Beneficial social, environmental, and economic impacts would result from the Build Alternative.

#### *Right-of-Way (ROW)*

Right-of-way will likely be required from the owners of federal mining claims located at Lost Chicken Creek and along Wade Creek. There are no current ROW plans for the Taylor or Top of the World Highways; therefore the exact amount of ROW required for project construction is unknown at this time. ROW plans will be completed when the environmental document and project plans are complete.

#### *Social Impacts*

The proposed project is expected to have beneficial impacts to residents in the communities of Chicken and Eagle which are located along the Taylor Highway. The improved driving conditions will make it easier and more reliable to transport goods via road into the communities. The improved driving conditions will likely encourage more tourists to drive the road because with the increase road width and other improvements drivers will be more comfortable driving larger vehicles such as motor homes on the road. The road improvements will make the drive less stressful and more enjoyable for tourists wishing to drive the road for its scenic vistas. The proposed project will also improve access for the Fortymile Wild and Scenic River land manager, BLM. As the number of visitors driving the road increases it will be more economically feasible for residents to operate tourism-related businesses. The project will not result in the relocation of any residents or businesses. The project will improve access to the Fortymile Wild and Scenic River corridor for visitors and land managers.

#### *Historic Properties*

Historic Properties along the project area were identified during a 2002 survey conducted by the Alaska Department of Natural Resources – Office of History and Archaeology. On October 30, 2003 the State Historic Preservation Officer concurred that no historic properties would be affected by the proposed project, provided that any road widening would occur on the opposite side of the present highway from Jack Wade Camp and Jack Wade Dredge. The build alternative complies with these provisions.

#### *Wetlands*

Approximately 20 acres of wetlands will be impacted by project construction with approximately 100,000 cubic yards of fill being discharged into wetlands. No high quality wetlands will be impacted. All affected wetlands are located adjacent to the current road. The vast majority of wetlands that would be

affected by project construction are palustrine scrub shrub wetlands which are prevalent through out the project corridor and the state.

#### *Fish and Wildlife*

No anadromous fish streams or threatened and endangered species are located in the project area. The project is not expected to have an adverse impact on fish or wildlife resources in the area. The road improvements are expected to have a beneficial impact on the water quality of the streams adjacent to the road due to less sedimentation and improved drainage.

#### *Floodplain Impacts*

The project is not expected to have an impact to the floodplain of the Walker Fork. The project will create an additional 12 acres of floodplain at various locations along Wade Creek by moving the road away from the creek and regrading the old roadbed. The replacement bridge at Chicken Creek will be designed to adequately pass the 100-year flood without damage to the surrounding area. A small amount of riprap will be needed at MP 75.25 along the South Fork to protect the roadway from erosion.

#### *Water Quality*

Water quality of the adjacent streams and wetlands are expected to improve after road construction. Erosion and sedimentation levels are expected to decrease with the replacement of culverts and the creation of additional floodplain along Wade Creek. Short-term impacts during construction will include temporary increased sedimentation, but the impacts are expected to be temporary.

#### *Section 4(f) Impacts*

A Programmatic Section 4(f) Evaluation was completed for this project to determine whether there is a 'feasible and prudent alternative to the use of land' from the Wade Creek Wild and Scenic Withdrawal for roadway improvements and to ensure that the action 'includes all possible planning to minimize harm to the property resulting from the use' (23 CFR 771.135). For the highway to be built not using land from the Wade Creek Wild and Scenic Withdrawal the highway would need to be built on a new location which would fail to provide public access to the Wade Creek recreational segment of the Forty-mile Wild and Scenic River withdrawal. Ten locations within the Wade Creek Withdrawal are proposed for improvements that would require ADOT&PF to acquire additional ROW easements from BLM (Figure 2). One additional area in the Withdrawal would require temporary construction access by ADOT&PF for construction of a wayside. A total of 3.6 acres of ROW easement would need to be acquired for the proposed project. Without the use of the Section 4(f) land the Taylor Highway will continue to be eroded by Wade Creek, the road will continue to flood in the spring and during high-water events, people will

continue to be stranded while the road is closed for repairs, and the road could be irreparably damaged during flooding. Use of the Section 4(f) land will benefit recreational users and BLM by providing reliable summer access to the area. Use of the land at these 10 locations is not expected to have an adverse impact on the remaining Wade Creek or remainder of the Fortymile Withdrawal.

### *Permits*

A U.S. Army Corps of Engineers 404/10 wetlands permit, an Alaska Department of Environmental Conservation (ADEC) 401 water quality certification, an Alaska Department of Natural Resources Fish Habitat Title 41 Permit, and a National Pollution Discharge Elimination System (NPDES) permit will be required before construction.

### *Material Sites*

Material for project construction will come from two permitted material sources, road cuts at MP 72 and 89.1, and mine tailings along Wade Creek. The material sites have been previously permitted.

### **Environmental Commitments and Mitigation Measures**

Environmental commitments and mitigation measures incorporated in this project include the following:

- Creation of approximately 12 acres of additional floodplain habitat along Wade Creek through realignment of the highway at various locations.
- Maintenance of a tree buffer between the highway and the historic Jack Wade Camp which appears to meet the eligibility requirements for the National Register of Historic Places according to the Alaska Department of Natural Resources – Office of History and Archaeology.
- Improving natural drainage patterns by providing culverts for cross drainage. Currently there is very little cross drainage due to an inadequate number of culverts and improperly sized culverts.
- Designing culverts to allow fish passage at all fish stream crossings.
- Constructing public facilities to enhance existing and provide for new recreation areas. Proposed new facilities include the Walker Fork Wayside, Mosquito Fork Dredge trailhead parking, and various scenic pullouts.
- ADOT&PF will prepare an Erosion and Sediment Control Plan during final design to minimize the potential for sediment to reach surface waters. Temporary erosion control measures, including straw bales and/or silt fencing will be used during construction and kept in place until newly seeded plants can bind with the soil. The Contractor will prepare a Storm Water Pollution

Prevention Plan to reduce impacts to water from construction to the maximum extent practicable. This will include a hazardous materials control plan to address measures to prevent and respond to potential releases of hazardous material during construction.

- Refueling and servicing of equipment shall not be performed within 100 feet of wetlands or water bodies with the exception of low mobility equipment used for road construction or bridge repairs. A Hazardous Materials Control Plan (HMCP) will provide a detailed process for fueling this equipment within 100 feet of wetlands or waters of the U.S. (Wade Creek, Walker Fork, South Fork). Fueling and service vehicles will be equipped with adequate materials (such as sorbent pads, booms, etc) to immediately contain and commence clean-up of spilled fuels and other petroleum products.
- Adequate absorbent material will be kept on site to be used in the event oil, fuel, or other hazardous materials are spilled during equipment operation.
- Best management practices will be used and maintained to prevent pollution of surface and groundwater, soil, and the atmosphere with any contaminants including hazardous or toxic materials. Any release of these materials into the environment will require immediate corrective action by the contractor in accordance with applicable State and Federal Regulations.
- If contaminated or hazardous materials are encountered during construction, all work in the vicinity of the contaminated site will be stopped until ADEC is contacted and a corrective action plan is approved by ADEC.
- Advance notice of road closures will be posted in Tok, Chicken, Eagle, the Alaska/Canada Border Crossing and Dawson City and tour and fuel companies will be contacted regarding road closures to reduce construction impacts on highway users.

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## ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish & Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
ADT	Average Daily Traffic
ANILCA	Alaska National Interest Lands Conservation Act
BLM	Bureau of Land Management
BMP	Best Management Practice
CE	Categorical Exclusion
dba	Decibels
DOI	Department of the Interior
EA	Environmental Assessment
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ESCP	Erosion and Sediment Control Plan
FHWA	Federal Highway Administration
W&SR	Wild and Scenic River
FONSI	Finding of No Significant Impact
LUST	Leaking Underground Storage Tank
MP	Milepost
NAC	Noise abatement criteria
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OHW	Ordinary High Water
PLO	Public Land Order
ROW	Right-of-Way
SHPO	State Historic Preservation Office
SO	Secretarial Order
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
W&SR	Wild and Scenic River
Withdrawal	Wade Creek Wild and Scenic River Withdrawal

## **1.0 PROPOSED ACTION**

The purpose of this National Environmental Policy Act (NEPA) Environmental Assessment (EA) is to assess the environmental impacts of the proposed project and determine if the impacts are significant. If no significant impacts are found, the Federal Highway Administration (FHWA) will issue a finding of no significant impact (FONSI). If there are significant impacts, an environmental impact statement will be prepared. The Alaska Department of Transportation and Public Facilities (ADOT&PF) has prepared this EA for the Federal Highway Administration for the Taylor/Top of the World Highway Milepost (MP) 64.5 to the Alaska/Canada Border project.

### **1.1 Project Background**

The ADOT&PF proposes and requests funding for a "3R" project for the Taylor and Top of the World Highway, from MP 64.5 to the Alaska/Canada Border. The scope of this project consists of rehabilitation, restoration, and resurfacing of the existing roadway on the same or slightly modified alignment. The principal objective is to restore and preserve the structural integrity of the roadway, subsequently extending the roadway's service life and the safety of its users.

The Taylor Highway extends north from its intersection with the Alaska Highway (MP 1306) east of Tok, Alaska. At the Jack Wade Junction (MP 95), the highway splits into two routes: one route proceeds north to Eagle, continuing the milepost sequence; the other route (Top of the World Highway) turns east and ends 13 miles farther at the Alaska/Canada border. At the Jack Wade Junction the milepost marker numbering along the Top of the World Highway begins at 0. This project begins at the crossing of Mosquito Fork Creek, MP 64.5 (approximately 2 miles south of Chicken) and proceeds north. At MP 95 it follows the easterly route (Top of the World Highway) to the Alaska/Canada Border. The total length of this "3R" project is 44 miles.

### **1.2 Proposed Action**

The project begins in Alaska at the Mosquito Fork Bridge and ends at the Alaska/Canada Border. The project is located on the U.S. Geological Survey quadrangle maps Eagle A-1 and A-2. A location and vicinity map is presented in Figure 1. The work entails minor road realignments; roadway widening and surface treatment; bridge replacement and repair; drainage improvements; turnout, wayside, and parking area construction; and highway sign installation. The project area includes approximately 44 miles of highway.

Final design will likely be completed during 2004 with project construction scheduled to begin in 2005.

The project will be constructed in three phases:

- Jack Wade Junction to the Border (MP 95 to MP 13 of the Top of the World Highway), 2006;
- Mosquito Fork to Walker Fork (MP 64.5 to MP 82), 2007; and
- Walker Fork to Jack Wade Junction (MP 82 to MP 95), 2008.

## 2.0 PURPOSE AND NEED

The proposed project would restore and improve the structural integrity and drainage of the existing roadway, enhance safety by improving deficient roadway geometry, provide enhancements for recreation along the highway, and provide reliable summer access to the Wade Creek recreation area.

Little structural improvement has occurred within the project area since construction of the Taylor and Top of the World Highways was completed in the mid 1950's. The road lacks surface aggregate, resulting in a slippery driving surface during wet weather and soft subsiding edges. In numerous areas, there is insufficient drainage away from the road causing ponding on the road. The road also experiences glaciation (ice build-up from inadequate drainage) at certain locations which must be removed by ADOT&PF maintenance crews. Removing the ice build-up causes damage to the road and increases maintenance costs. There is also a sinkhole at MP 80 that requires significant maintenance to keep the road open.

The Taylor Highway parallels Wade Creek for approximately 10 miles and needs to be shifted farther away from the creek in several locations to minimize re-occurring embankment erosion and road closures. In June 2000 the road was closed due to washouts between MP 74 and MP 94 and in 2001, the road was reduced to one lane due to washouts from mud slides (Fehrenbacher, 2003). Flooding was visible in April 2003 near the Walker Fork Campground, see Appendix A, Photo 12. No permanent repairs have been made to protect the road from potential washouts. Where possible, the road will be designed to avoid the placement of riprap in Wade Creek, as requested by the Bureau of Land Management (BLM).

Elements of deficient roadway geometry include segments of road with less than the recommended standard width for rural highways. Design standards (American Association of State Highway and Transportation Officials specifications) for rural highways recommend a minimum 24-foot roadway width. The existing roadway averages 20 to 22 feet wide. ADOT&PF proposes to upgrade approximately 44 miles of the Taylor Highway to a surface width of 28 feet. The additional width will provide for more road edge stability and a shoulder on both sides of the road for bicycle and pedestrian use. Currently, the road has inadequate road width for smaller vehicles to pass or be passed by commercial vehicles. For vehicles to pass one vehicle must slow down significantly and pull over to the side of the road as much as possible.

Sharp horizontal curves exist along the highway. Curves are up to 45 degrees and require slower approach speeds and demand extreme caution to negotiate them due to the danger of oncoming wide-

track trucks. Sight distance around the curves is also restricted. Realignment is necessary to lengthen the radius of these curves and conform, as much as practical, to a design standard of a 600-foot minimum radius for a design speed of 40 miles per hour and 750 feet for a design speed of 50 miles per hour or 11.0 and 6.75 degree maximum curvature, respectively (ADOT&PF, 2003).

Enhancements for recreation are also needed along the highway. Currently, travelers visiting the Fortymile drainage and enroute to and from Canada must park on the road, in most places, in order to access recreational and scenic or wildlife viewing opportunities. A wayside at Walker Fork, as requested by the BLM, will allow busses and individuals to use facilities without driving through the Walker Fork Campground. In addition, the construction of turnouts would make it easier and safer for travelers to enjoy scenic views and the recreational opportunities along the highway.

The proposed improvements are consistent with land use plans that have been developed for the region. The following plans have been developed: BLM's *Fortymile River, River Management Plan (1983)*; *Fortymile, A Minimum Personnel Contact Visitor Management Program (1976)*; and the Alaska Department of Natural Resource's (ADNR) *Upper Yukon Area Plan (2003)*. Section 4.4 discusses these land use plans. The Taylor Highway is the only road access to the Fortymile National Wild and Scenic River (W&SR) withdrawal as well as the communities of Chicken, Boundary, and Eagle. Improvements to the Taylor and Top of the World Highways are needed to ensure reliable access to the local communities and the Fortymile W&SR, including the Wade Creek Recreational Area.

### 3.0 ALTERNATIVES

ADOT&PF has considered various alternatives to upgrade the Taylor Highway. Alternatives considered include the proposed action, building a new highway on new alignment in the vicinity of Wade Creek due to potential Section 4(f) impacts, improving the highway without using Section 4(f) lands, and a No-Build alternative. The alternatives are discussed in more detail below.

#### 3.1 No-Build Alternative

Under the No-Build alternative, the current situation would continue to exist with a substandard road surface, insufficient road width, inadequate drainage, and lack of pullouts for the long distance traveler. Without the proposed improvements the road will continue to deteriorate and irreparable damage could occur. The road would continue to erode into Wade Creek causing sedimentation of the stream and degradation of the roadway. The road will continue to flood in the spring as shown in Photo 12 in Appendix A making it impassible to vehicles until water levels recede. Under the No-Build alternative the potential for people and supplies to be stranded due to road damage from erosion will continue to exist. With out permanent repairs to the road, residents of Chicken and Eagle will continue to have unreliable road access to their communities.

Under the No-Build alternative no widening of the road would occur which would prolong the conflict between smaller private vehicles and large commercial vehicles such as fuel trucks and buses due to inadequate road width. Currently, drivers of recreational vehicles must always be on the lookout for commercial vehicles so that they may either pull off the road or significantly slow down to let the commercial vehicles go by. Widening of the road is needed to enhance the safety of both commercial and private vehicle drivers and passengers.

The existing level of maintenance would continue with cursory repairs being made when necessary.

#### 3.2 Alternatives Considered but Rejected

Because the proposed project has the potential to use a minor amount of land from a publicly-owned recreation area (Fortymile W&SR – Wade Creek Recreational Withdrawal), Section 4(f) of the Department of Transportation Act requires ADOT&PF to look at design and location alternatives that would avoid the use of Section 4(f) property. Two alternatives were considered. The first alternative looked at design options for construction of the road that would not use adjacent Section 4(f) land. These design alternatives included:



- No widening or realignment of the road;
- Increasing the slope of the road prism;
- Reducing the width of the traffic lane shoulders and the corresponding clear zone; and
- Changing the vertical alignment of the road.

None of the design alternatives were found to meet the purpose and need of the project which is to provide a more stable roadbed and enhance safety through improvement of deficient roadway geometry. The design alternatives are discussed in more detail in the attached Programmatic Section 4(f) Evaluation (Appendix B).

The second alternative examined construction of a new road on new alignment. Two alignments were considered; one that went north and west of the project area and one that went south and east of the project area. Because of the mountainous topography, feasible alternate alignments were limited to the two described above. Both alternative alignments would have resulted in substantial adverse environmental impacts and substantially increased project cost. The alignment north and west of the Section 4(f) property would have required construction of 20 miles of road on new alignment with numerous new bridges. The southeast alignment would have required 11.5 miles of new road with several bridges. The new alignments also would have traversed through sections of the Fortymile W&SR designated as scenic which are managed by BLM to be more remote than recreational sections. Constructing a road through a scenic withdrawal would have more impacts than keeping the road with the Wade Creek recreational withdrawal. Also, existing access to recreation facilities and other historic properties of interest to the traveling public along Wade Creek would be lost.

### **3.3 Build Alternative**

The build alternative would 1) resurface, restore, and rehabilitate the existing highway from the Mosquito Fork Bridge to the Alaska/Canada border; 2) replace the existing one lane bridge over Chicken Creek with a single span, two lane bridge; 3) provide enhancements for recreation; and 4) provide reliable access to and through the Wade Creek Recreational Area.

The present highway alignment would be maintained except for minor realignments to reduce curvature on corners and shifting the highway away from the Wade Creek floodplain. The highway would be realigned at multiple locations for a total of approximately 3.5 miles (Figures 3-12). The proposed highway realignments at corners average 0 to 50 feet from the existing highway centerline. Along Wade Creek, the maximum shift is 0 to 100 feet from the centerline. The road would be improved by widening

to 28 feet with two 10-foot lanes and 4-foot shoulders, and surfacing with asphalt (Figure 13). Drainage would be improved to convey water away from the road by ditching parallel to the road and installing cross-drainage under the road. The posted speed would be 40 miles per hour from MP 64.5 to Walker Fork (MP 82) and 50 miles per hour from Walker Fork to the Alaska/Canada border.

A wayside will be constructed at Walker Fork on the southeast side of the road with outhouses, interpretive signing, and picnic tables, as indicated on Figures 3 and 14. Scenic turnouts are planned where the new road will accommodate using the old road for turnouts at MP 77 on the east side of the road and MP 78 on the northwest side of the road (Figure 15). A trailhead parking area is planned for the Mosquito Fork Dredge Hiking Trail (MP 68) on the south side of the highway within the existing ADOT&PF right-of-way. The parking area will have no facilities and will not impact the current trailhead. Highway signing will also be installed along the entire project corridor, including milepost markers and standard highway signs for direction and safety information.

The current one lane bridge over Chicken Creek will be replaced by a two-lane, single span bridge. The new bridge location will be the same as the current bridge. A temporary crossing will be installed during construction of the new bridge and will be removed when the new bridge is operational. Bridge approach railing and bridge deck railing will be installed on the South Fork and Walker Fork bridges. In addition, the South Fork Bridge piers require work to repair concrete spalling. The pier work will require the use of partial wooden coffer dams which will be pumped out to allow workers to fix the piers. The coffer dams will not be constructed to the stream bed. No heavy equipment will be used in the river.

Material for road construction will be obtained from road cuts/unclassified excavation, tailings from Wade Creek and two permitted material sites (Figures 15 and 16). Any additional material from excavations will be used as slope flattening material in non-wetland areas within the ADOT&PF ROW. Material disposal sites will be identified by ADOT&PF during the final design or by the construction contractor.

Avoidance and minimization measures were evaluated in compliance with Executive Order (EO) 11990 (protection of wetlands), E.O. 11988 (floodplain management), Section 4(f) impacts, and Section 404(b)(1) guidelines. Avoidance and minimization of impacts to wetlands can be found in Section 4.6, avoidance and minimization to floodplains can be found in Section 4.14, and a discussion of Section 4(f) impacts can be found in Appendix B.

## 4.0 ENVIRONMENTAL CONSEQUENCES

The project is located in the Fortymile River basin in eastern Alaska near the border with Canada. The project begins at the Mosquito Fork and travels along the South Fork, Walker Fork, and Wade Creek before climbing out of the rivers' valleys and onto the Top of the World Highway. The area has a long history of mining as is evidenced by the numerous spoil piles and remnants of mining equipment visible from the road. The Fortymile area offers many opportunities for those seeking outdoor adventure and/or scenic beauty. In the past several years, visitation to the area has increased significantly by people utilizing public lands for a variety of reasons including: camping, hunting, canoeing, river rafting, ghost towns, hiking, bird watching, educational activities, wildlife viewing, dog mushing, trapping and snow machining. The Taylor and Top of the World Highways are only open during the summer, typically mid-April through October, depending on snow.

A literature search was used to identify issues. The scoping process with public and resource agencies was then used to find out more in depth information. This included public meetings, coordination with resource agencies, meetings with adjacent land management agencies, and a number of field visits.

Project-specific studies conducted to support preparation of this EA include a Wetlands Delineation/Vegetative Mapping/Wildlife Assessment (Appendix C), a Draft Section 7 Evaluation prepared by BLM (Appendix D), an ANILCA Section 810 Evaluation (Appendix E), a Programmatic Section 4(f) Evaluation (Appendix B), and a Cultural Resource Survey. The following subsections discuss the probable environmental impacts associated with the proposed project.

### 4.1 Right-of-Way Impacts

Right-of-way status for the Taylor Highway MP 64.5 to the Alaska/Canada Border project is complex. There are no current ROW Plans for this portion of the Taylor Highway (MP 64.5 to the Jack Wade Junction, MP 95.7) and Top of the World Highway [Jack Wade Junction (MP 0) to the Canadian Border (MP 11.7)]. The ADOT&PF Northern Region ROW Section has performed considerable research on the ROW for this project, and will continue to research and resolve issues as the project progresses through the easement acquisition phase following NEPA and design.

Public Land Order (PLO) 601 (dated 8/10/49) and Secretarial Order (SO) 2665 (dated 10/16/51) established a ROW for the Taylor Highway (also referred to as Tok-Eagle Road) at 200 feet wide. The Top of the World Highway is not considered part of the Taylor Highway; it appears to be classified as a "local road" under the same Orders. The specified ROW for a local road is 100 feet.

Much of the land along the Taylor Highway corridor is owned either by the federal or State government (Figure 17) and is subject to the 200-foot ROW, including State mining claims. However, any contemplated realignments outside of the existing corridor will require ROW permitting from BLM and the ADNR. Right-of-way mapping of the existing corridor will be required before project certification. This is due, in part, to the fact that the existing ROW in many locations is defined by the current location of the road.

*James L. B.*  
The reserved ROW for the Taylor and Top of the World Highways is subject to valid existing rights, including federal mining claims, homesteads, and trade and manufacturing sites that predate the establishment of the ROW under PLO 601 and SO 2665. In such areas, the ROW claim is likely to be limited to "ditch-to-ditch" or the actual prism occupied by the road and necessary for its ongoing maintenance. No documents have been prepared that show the specific location of federal mining claims along the Taylor Highway. In addition, where the road does cross federal mining claims, ROW must be obtained prior to construction. Should federal mining claims be relinquished along this corridor, and returned to public domain, it is ADOT&PF's standpoint that the PLO 601 ROW (200 feet) will automatically attach to this corridor (Appendix F).

There are a number of unpatented federal mining claims (claimant has the right to extract the minerals, but does not own the land) in the Wade Creek area, shown on Figures 15 and 16. The Alaska Road Commission acquired easements for a public highway from the Wade Creek Dredging Company in 1949. The claims have been continuously worked since that time and are located within Townships 27 and 28 North, Range 20 East, from MP 86 to MP 92. According to the easement documents, the ROW reserved is "... a sufficient width to maintain a finished road bed of twenty four (24) feet."

In addition, unpatented federal mining claims exist in the area of the Jack Wade dredge (MP 86). The claims appear to be part of the original Wade Creek Dredging Company group that existed prior to the establishment of the 200-foot wide ROW along the current alignment of the Taylor Highway. Road realignment in a southeasterly direction will likely place the new roadbed in an unpatented federal mining claim. ROW acquisition would then be required from both the holder of the mineral rights and BLM.

Similarly, there are existing federal claims dating from 1901 in the Chicken Creek area which appear to have been continuously worked since the turn of the century. Some of these claims may be included in an Alaska Road Commission easement from the Lost Chicken Mining Company; however, the easement width is limited to that area "required for the highway and appurtenant structures." These claims are

located between MP 68 and MP 70, and there is no mapping available showing the location of the federal mining claims. Therefore, the exact number of claims in this area is unknown at this time.

At this time, ADOT&PF is not able to estimate the amount of ROW that will be required to construct the project due to the lack of ROW plans. Right-of-way plans are not authorized until completion of the environmental document and the final design. After final design has been completed, ADOT&PF will negotiate with the individual mining claimholders to purchase road easements across the claims. The easements will include restrictions on the mining operations, preventing mining through the road or relocation of the road. If the claimholder is not willing to negotiate the right to mine through the road, the easement restrictions will require the miner to replace the road in its original location and condition once mining is complete. In addition, the restrictions will require the miner to provide a detour constructed to the same design standards as the highway while mining is in progress. These easements will be acquired before the project is constructed

#### **4.2 Social Impacts**

The proposed project would benefit Chicken, Boundary, and Eagle residents by providing improved access to the Alaska Highway and cities such as Tok, Fairbanks, and Anchorage since the Taylor Highway is the only road access in the area. The project would likely increase the volume of tourist traffic on the Taylor Highway each summer due to the improved driving conditions. ADOT&PF has forecasted an increase in average daily traffic (ADT) of 75 vehicles to 250 over the next 20 years. This increase is not expected to cause changes in neighborhoods, travel patterns, or accessibility; nor will it affect social groups, public facilities, or services. There is very little development along the project corridor. The only communities located within the project corridor are Chicken (2002 population 24) and Boundary (population not available, less than Chicken). No household or business relocations will result from the project. In Boundary, the road is being moved west of the current alignment which is currently located on private property. This realignment will allow more space for the property owners of the Boundary store to expand and improve their facilities, should they decide to do so.

ADOT&PF has coordinated with BLM to establish appropriate locations for the construction of turnouts and waysides that will best serve visitors to the Fortymile W&SR. Turnouts will be constructed at MP 77 and MP 78 to allow travelers to pull off the road to rest or view scenic vistas. A wayside is planned at Walker Fork (MP 82) (Figure 14). The Walker Fork Wayside will be located on the southeast side of the road and will have outhouses, interpretive signing, and picnic tables. The Walker Fork Wayside will meet all applicable American with Disabilities Act guidelines. The BLM will maintain the toilets and

other appurtenances and ADOT&PF will plow and maintain the wayside surface. The facilities will also be improved for pedestrians through construction of trailhead parking at the Mosquito Fork Dredge Hiking Trail and wider shoulders along the road for bicycles and pedestrians.

The proposed project would also improve driving conditions for tour buses, fuel trucks, and travelers through road widening and surfacing. The road improvements will increase public safety through the construction of shoulders, better sight distance around curves, and properly designed pullouts and waysides.

The project is in compliance with Executive Order (EO) 12898. Executive Order 12898 requires federal agencies, "to the greatest extent practicable and permitted by law, and consistent with the principals set forth in the report on the National Performance Review," to "achieve environmental justice as part of its mission by identifying and addressing, as appropriate disproportionately high and adverse human health or environmental affects," including interrelated social and economic effects of its programs, policies, and activities on minority populations and low-income populations in the United States.

No disproportionately high or adverse effects on minority or low income populations, as outlined in EO 12898, are expected to result from the proposed project. No persons or populations were excluded from participation in, denied the benefits of, or subjected to discrimination under the NEPA process because of their race, color, or national origin.

#### **4.3 Economic Impacts**

The proposed project would improve economic opportunity for residents in Chicken, Eagle, and Boundary through the potential increase of visitors using the improved road. Average daily traffic (ADT) levels are expected to increase from 175 in 2000 to 250 in 2020. With the increased traffic there will likely be an increased demand for tourist items (souvenirs, food, fuel) in Chicken, Boundary and Eagle. The improved road will also make it easier for mining equipment to be transported into the region and for mining products to be transported out of the region. With increased traffic comes the potential for commercial development near the Eagle cutoff. Maintenance and operation costs of the road are expected to decrease with realignment of the road away from Wade Creek due to fewer washouts and reduced erosion of the road prism.

Temporary economic benefits from the project would include increased sales in local stores and gas stations from outside workers staying in the project area during construction. Sufficient lodging is not

available along the Taylor Highway for the number of personnel required to complete project construction. Construction crews would stay in temporary work camps in the project area.

Federal mining claims located within the proposed ROW will be purchased from the claimholders at fair market value or easements will be obtained by ADOT&PF as discussed in Section 4.1.

#### **4.4 Recreation and Tourism**

Under the No-Build alternative recreational access would continue to be limited to those willing to drive the road in its current substandard condition. Without improvements to the road, visitor use could decrease as the road becomes more likely to damage vehicles due to erosion, washouts, and inadequate drainage. Currently, car and motor home rental companies in Anchorage and Fairbanks will not allow their vehicles to be driven on the Taylor Highway because of the road conditions.

Visitors to the Fortymile W&SR corridor participate in recreational activities such as camping at the Walker Fork Campground, visiting the Jack Wade Dredge, site seeing at Davis Dome, fishing in Walker and South Fork, hunting, wildlife viewing, and snow machining. Visitor's access to the Fortymile W&SR is by private vehicle and tour bus during the summer months and snow machine or dog sled during the winter. There are few developed recreation sites in the Fortymile management area. Within the project area there are waysides at Mosquito Fork (MP 64 Taylor Highway), South Fork (MP 75 Taylor Highway), and Davis Dome (MP 11.7 Top of the World); a hiking trail at MP 68.2 Taylor Highway; and a campground at Walker Fork (MP 82 Taylor Highway). According to BLM, visitor use numbers have slowly increased since 1997 with the numbers dropping in 2000. In 2003, 55,580 vehicle passengers passed through the Poker Creek Boarder Station. At the Walker Fork Campground, 7,051 camping registrations were collected in 2003.

The proposed project is expected to make it more convenient for people to visit the Fortymile area due to the improved access. With the improved road conditions visitors will have increased maneuverability and will be better able to avoid wildlife collisions. As the road conditions improve more people will be willing to make the drive and visit the area knowing that they won't be risking damage to their cars because of substandard road conditions.

The proposed project will also construct public facilities along the road to enhance recreational opportunities in the area. Proposed public facilities include constructing the Walker Fork Wayside which will include restroom and picnic facilities. Construction of the Mosquito Fork Dredge trailhead will

allow people to park their vehicles off the road when utilizing the hiking trail. Construction of scenic pullouts along the road will give recreational vehicles a place to pull off the road and view the spectacular scenery and wildlife present in the area.

#### **4.5 Local Land Use and Transportation Plans**

In general, there is little development of the federal, State, and private lands adjacent to the Taylor Highway. One store is located adjacent to the road in the community of Chicken. In addition, a store and dwellings are present adjacent to the current road in Boundary. At this location the road will be moved north approximately 180 feet away from the store; however, access to the store will be maintained. A few placer mining operations are located along the project corridor. Because the road will remain within the current ROW in the vast majority of the project area, the proposed project will have little impact on the adjacent land use. In the Wade Creek area, from approximately MP 85 to MP 92, ROW will need to be obtained from the owners of federal mining claims located under the current road. Section 4.1 discusses ROW impacts from the proposed project. Figure 17 presents the land status within the project area.

Land in the project area is used for recreational activities such as boating, hunting, camping, viewing historic sites, fishing, site seeing, snow machining, dog mushing, picnicking, and photography. The proposed project will have a beneficial impact on recreational use by providing improved access to the area and by constructing additional pullouts and waysides for recreational use.

##### *4.5.1 Fortymile Wild and Scenic River*

The Alaska National Interest Lands Conservation Act (ANILCA) of December 2, 1980 established the Fortymile River and certain tributaries as a component of the National Wild and Scenic Rivers System to be administered by the Secretary of the Interior through BLM. This classification designated approximately 392 miles of stream in the Fortymile drainage as part of the Wild and Scenic Rivers system (BLM, 1983). Within the project corridor the streams listed in Table 1 are included in the Fortymile Wild and Scenic River System.



**Table 1**  
**Streams Designated as part of the Fortymile Wild and Scenic River System<sup>a</sup>**

<b>Stream</b>	<b>Designation</b>	<b>Start Upstream</b>	<b>End Downstream</b>	<b>Length (miles)</b>	<b>Length in Project Area (miles)</b>
Mosquito Fork	Wild	Confluence with Kechumstuk Creek	Confluence with Ingle Creek	30	0 (immediately adjacent to the project area)
Mosquito Fork	Scenic	Confluence with Ingle Creek	Confluence with Dennison and South Forks	5	0.25
South Fork	Scenic	Confluence with Mosquito and Dennison Forks	Confluence with North Fork and Main Stem	27	2.75
Walker Fork	Scenic	Downstream of Liberty Creek	Confluence with South Fork	12	0.75
Wade Creek	Recreational	Confluence with Grace and Warner Creek	Confluence with Walker Fork	10	10

a. Source: River Management Plan for the Fortymile National Wild and Scenic River, 1983.

Three river designations (wild, scenic, and recreational) determine how BLM manages the streams. A congressional mandate dictates that wild rivers shall “be free of impoundments and generally inaccessible except by trail with watersheds or shorelines primitive, and water unpolluted.” Scenic rivers shall be managed to be “free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.” Recreational rivers shall be managed to be “readily accessible by road or railroad and may have some development along their shorelines, and ... may have undergone some impoundment or diversion in the past.”

Because the proposed project will require the placement of fill and riprap that could restrict the ability of Wade Creek to meander naturally within its valley, BLM is required to complete a Section 7 Evaluation. A Section 7 Evaluation determines whether or not the proposed action will have a “direct and adverse” impact on the values for which Wade Creek was added to the Wild and Scenic River System. A draft Section 7 Evaluation has been completed by BLM and can be found in Appendix D. BLM’s preliminary finding is, “the proposed project would not have a direct and adverse effect on the potentially impacted components of the Fortymile National Wild and Scenic River System.” BLM will issue a final finding after public review of this EA and before the FONSI is signed.

#### 4.5.2 Land Use Plans

Development and land use plans for the region include BLM's *Fortymile River, River Management Plan; Fortymile, A Minimum Personnel Contact Visitor Management Program*; and ADNR's *Draft Upper Yukon Area Plan*. Proposed project improvements are consistent with these plans. Extensive planning and coordination have been accomplished with BLM in order to limit disturbance and ensure enhancement of the natural environment along the project corridor.

The Taylor Highway is the only road access to the Fortymile River and its tributaries. Extensive coordination was conducted between ADOT&PF and BLM to ensure the proposed project is consistent with the Plan. BLM has issued a preliminary draft finding that the proposed project would be consistent with "...BLM's wild and scenic river management mandate to protect and enhance free-flow water quality and outstanding values of the river area" (Appendix D). Impacts to the Scenic and Recreational Rivers (Mosquito Fork, Walker Fork, South Fork, and Wade Creek) from construction will be minimized as much as possible. A final finding will be issued after public review of this EA and before a FONSI is signed.

The project is located in Region 4, Walker Fork, of the *Upper Yukon Area Plan*. The plan has designated much of the State land along the project corridor as general use to allow for flexibility of management based on future demand (ADNR, 2003). The management intent is to limit residential and commercial development to designated areas in Chicken, Boundary, and northwest of Jack Wade Junction. State land not designated as *Settlement* or *Settlement-commercial* will be managed to "preserve scenic values, minimize the number of access points onto the Taylor and Top of the World Highways, and reduce the extent of impacts to wildlife and other natural resources" (ADNR, 2003). The proposed improvements to the Taylor Highway are consistent with the *Upper Yukon Area Plan*.

#### 4.6 Historic Properties

To identify and evaluate cultural resources in accordance with the requirements of 36 CFR 800.4, a field survey and literature review of documents, reports, and other relevant information pertaining to the historic and archeological resources in the vicinity of the Taylor and Top of the World Highways and potential material sites was conducted by the ADNR – Office of History and Archaeology. According to 36 CFR 800, Protection of Historic Properties, federally assisted projects must take into account the possible effects on properties that are on or eligible for the National Register of Historic Places (NRHP). The projects area of potential effect was identified as 150 feet from the highway centerline. A report

titled *Cultural Resource Survey of the Taylor Highway MP 64.5 – 95.6 and the Top of the World Highway MP 0.0 – 13.5 (To the U.S.-Canadian Border)*, Project 66446 (Buzzell, 2003) summarized the results of the field survey and literature review. SHPO concurred with the determination that no historic properties would be affected by the project on October 30, 2003. A letter was also received from BLM on June 5, 2003 concurring with the general findings in the cultural resource report prepared by ADNDR. Appendix G contains correspondence regarding cultural resources.

Two historic properties were identified within the area of potential effect, the Jack Wade Dredge (Appendix A, Photo 10) at MP 86 and the historic Jack Wade Camp at MP 89.9. The Jack Wade Camp consists of 10 historic buildings, one structure, and a number of objects associated with placer mining. BLM signed a memorandum of agreement with the Alaska State Historic Preservation Office for dismantling the Jack Wade Dredge on October 27, 2003. According to BLM, it is likely the dredge will be dismantled before road construction. If the dredge has not been dismantled before road reconstruction (currently scheduled for 2007), there will be no impacts to the site because the roadway will stay within the existing footprint adjacent to the dredge, and be widened on the other side of the road, away from the dredge. At the Jack Wade Camp, ADOT&PF plans to shift the road alignment away from the mining camp. The mining camp is currently 140 feet north of the Taylor Highway. The vegetation blocking the camp from the road will not be disturbed, as requested by BLM and SHPO. No effect is expected at either of the sites due to project construction.

In addition to consultation with SHPO under Section 106 of the National Historic Preservation Act, ADOT&PF consulted with the BLM area archaeologist on the location of cultural resources and potential project impacts to the resources. Also, federally recognized Native American Tribal Governments were formally invited to participate in the consultation process and asked to provide information regarding historical or archaeological properties potentially affected by this project. Nine federally recognized tribal governments in the project area were contacted by letter, however no responses were received. In addition, follow up phone calls were made to Tribal contacts. Copies of the letter, phone logs, and the mailing list can be found in Appendix G.

If cultural, archeological, or historical sites are discovered during project construction, the SHPO will be contacted and any work that might impact these sites will be stopped. Work shall not resume in the vicinity of the site until a written clearance from the SHPO is issued to the Project Engineer.

#### 4.7 Wetlands

A wetland delineation was conducted by Shannon and Wilson, Inc. from September 10 to 13, 2002 using methods described in the 1987 *U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual* (USACE, 1987). A detailed wetlands report for the project area is provided in Appendix C. Figures 1 through 26 in Appendix C identify the wetlands within the road corridor (typically 100 feet on either side of the road).

High value wetlands – defined as those that provide critical habitat to fish, birds, or mammals for feeding, nesting, or habitation – are almost nonexistent within the project area (BLM 2003). The ponds and marshes adjacent to the road along Wade Creek have been formed by ground disturbance from placer mining. Many are either old settling ponds or small stream diversions that collect storm water runoff, but cannot drain due to mining berms or the road bed acting as a dam.

Most of the alignment is dominated by black spruce (*Picea mariana*), low ericaceous shrubs (*Vaccinium oxycoccus*, *Vaccinium uliginosum*, *Ledum groenlandicum*, *Ledum decumbens*) moss (*Sphagnum* spp.) and lichen wetlands. Wetland soils are predominantly organic in the upper layer with 6 to 15 inches of peat or muck, underlain generally by silt loam soils. These soils are classified as histic epipedons. Typically these areas are saturated to the soil surface. In one soil pit, excavated west of the Walker Fork, permafrost was encountered at 11 inches. This type of wetland is common in the project area as well as throughout Alaska. The *Status of Alaska Wetlands* [U.S. Fish and Wildlife Service (USFWS) 1994] states that almost two thirds of Alaska's 1.7 million acres of wetlands are palustrine scrub/shrub wetlands similar to those found extensively in the project area.

The low-lying riparian wetlands are dominated by willows (*Salix planifolia*, and *Salix* spp.), horsetail (*Equisetum* spp.), sedges (*Carex* spp.), mosses, and some grasses. These areas have mineral soils ranging from a sandy loam with mottles to a gravelly sandy loam.

Other wetland types observed includes small patches of sedge meadows and a buttercup-dominated area. Neither of these wetland types occupies a significant amount of area. The sedge meadow wetlands are primarily found interspersed along Wade Creek as well as between Chicken and the Mosquito Fork Bridge. The buttercup-dominated wetland area is adjacent to the Jack Wade Dredge. This area has a distinctive plant assemblage dominated by buttercup (*Ranunculus gmelini*), bluejoint (*Calamagrostis* spp.) sedges (*Carex aquatilis*, and *Carex diandra*), black spruce, and mosses. The soils in this area consist of six inches of peat over a highly organic silt loam. This area is bounded by the road on one side

and a short rock bluff on the other, forming a small wetland less than ¼ acre in size (Shannon & Wilson 2003).

Under the No-Build alternative, no wetlands would be filled. Negative impacts to wetlands such as sedimentation from erosion and storm water runoff associated with the existing road would continue. Natural drainage patterns of the wetlands would continue to be disrupted by the road causing some wetlands to be cut off from surface water and some to be flooded by water backing up behind the road.

Wetland impacts of the proposed project associated with the build alternative would occur when roadbed material is placed in wetlands, decreasing wetland size and altering wetland function. Most of the undisturbed areas along the alignment beyond the road fill meet the federal definition of wetlands with the primary exception being the area along the Top of the World Highway (Shannon & Wilson, 2003). Proper culvert design and installation will be necessary to maintain water flow between wetlands bisected by the road. Riprap will likely be needed at all stream crossings along the road corridor, at various locations along Wade Creek, and at one location along South Fork. Riprap will be placed along Wade Creek in intervals for a total of two miles to control road bank erosion. Riprap will also be used at MP 75.25 along South Fork to control road bank erosion.

Along the entire project area, approximately 100,000 cubic yards of fill (including riprap and road base material) will be discharged into approximately 20 acres of wetlands due to road widening and realignment. Fill will also be used at stream crossings and for the installation of culverts.

Low-value wetlands will also be affected by development of Material Site 78-5-031 (Figure 15). The material site is approximately 80 acres and much of the site has been disturbed from past operations. It is expected that the material site will be depleted during construction of the proposed project. A conservative estimate of the amount of wetlands to be impacted at the material site is 40 acres.

### ***Wetland Finding***

As defined by EO 11990, Protection of Wetlands, new construction in wetlands can not be undertaken unless (1) there is no practicable alternative to such construction and (2) the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

ADOT&PF has analyzed the project, and determined there are no practicable alternatives having less impact on the aquatic ecosystem and without significant adverse environmental consequences that do not involve discharges into waters of the United States. In order to upgrade the Taylor Highway to meet current safety standards the highway will need to be widened. Widening the highway will require filling wetlands located on either side of the road corridor at various locations. Fill areas will be minimized through the use of a 'barn roof' road design (Figure 13). From the edge of the shoulder out for four feet (recovery area) the slope will be 4:1. From the edge of the recovery area to the toe of the road bed the slope will be 1.5:1 to minimize the footprint of the road.

Wetland habitat will also be created and enhanced by moving the highway away from Wade Creek at intervals, creating an additional 12 acres of floodplain. The additional floodplain will be created in places where the road is being realigned away from Wade Creek and the old road bed material is removed and used in construction of the new road bed. This is expected to occur at multiple locations as shown on Figures 3 through 12. It is expected that after project construction, seasonally flooded marshy and riparian areas adjacent to Wade Creek will return to their natural habitat. Currently, Wade Creek has very few functioning riparian areas due to road location and mining berms adjacent to the creek. The installation of properly sized culverts and realignment of the road will help restore natural drainage patterns throughout the project area.

The palustrine wetlands in the project area are extensive and designing a road that avoids all wetland impacts would not be possible. Appendix C provides a description of wetlands located along the project corridor. Since there is already an existing road, designing a new road at a new location would cause equal or greater wetland degradation. The proposed design utilizes the existing, already disturbed road ROW for the majority of the project length.

The following measures will be implemented during construction to minimize harm to wetlands.

- Construction vehicles, equipment, and activities (stockpiling of materials) will be prohibited in wetland areas outside of the design toe slope.
- The contractor will provide effective control of erosion and surface water run off from the road into adjacent streams and wetlands during construction.

- Each bank cut, slope, fill, bottoms of road side ditches, and exposed earth work attributable to this project will be stabilized to prevent erosion both during and after project completion.
- No equipment or vehicles will be fueled or serviced within 100 feet of wetlands or waters of the U.S. (Wade Creek, South Fork, and Walker Fork) with the exception of low mobility equipment used for road construction. The Hazardous Materials Control Plan (HMCP) shall provide a detailed process for fueling this equipment within 100 feet of wetlands or waters of the U.S. Fueling and service vehicles shall be equipped with adequate materials (such as sorbent pads, booms, etc.) to immediately contain and commence clean-up of spilled fuels and other petroleum products.
- Adequate sorbent materials will be kept on site to be used to contain and cleanup unintentional releases of petroleum products.

Mitigation for impacting wetlands will include creating additional floodplain along Wade Creek where the road will be moved away from the creek and the old road bed graded to transition to the stream. Any additional mitigation that may be required will be done during the permitting process.

#### **4.8 Fish and Wildlife**

The following subsections discuss potential impacts to fish and wildlife in the project area.

##### *4.8.1 Anadromous and Resident Fish*

The two major drainages associated with the road alignment are the South Fork and its tributaries—Chicken Creek, Lost Chicken Creek, Mosquito Fork, Dennison Fork and Wall Street Creek—and the Walker Fork and its tributaries—Wade Creek, Ophelia, Gilliland, Warner, and Robinson Creeks. Figures 15 and 16 shows the rivers and streams associated with the project. Fish species reported within the Fortymile River drainage include arctic grayling (*Thymallus arcticus*), sheefish (*Stenodus leucichthys*), round whitefish (*Prosopium cylindraceum*), longnose sucker (*Catostomus catastomus*), and slimy sculpin (*Cottus cognatus*). Infrequent occurrences of secondary species such as humpback whitefish (*Coregonus oidschian*), northern pike (*Esox lucius*), burbot (*Lota lota*), Chinook salmon (*Oncorhynchus tshawytscha*), and chum salmon (*O. keta*) have been documented in lower reaches. Available information indicates that none of these secondary species occur within the drainages that would be affected by the proposed road improvements (Grundy, 1986; Alaska Department of Fish and Game (ADFG), 1999; and Garner, 2002).

According to information in the *1988 Fortymile River Placer Mining Final Cumulative Environmental Impact Statement* (BLM DOI), surveys by BLM and ADFG reported sedimentation and cementing of the Chicken Creek streambed, therefore the creek does not support a fishery because it lacks spawning habitat, cover, and aquatic invertebrates. Similarly, Wade Creek and Lost Chicken Creek are not expected to support a fishery because of the extensive mining disturbance in those creeks.

Table 2 summarizes the fish species present in streams in the project area and the type of work expected to occur below ordinary high water.

**Table 2**  
**Fish Species and Expected Stream Work within the Project Area**

Stream	Fish Species Present <sup>a</sup>	Work Below Ordinary High Water (OHW) (Y/N)	Type of Work
Chicken Creek	None	Y	Bridge replacement
Lost Chicken Creek	None	Y	Culvert replacement
South Fork	AG, SF, RF,LS, SS	Y	Placement of riprap to control road bank erosion at one location and repair work on the bridge piers
Walker Fork	AG, SF, RF,LS, SS	N	No work will be performed below OHW
Wade Creek	AG, SC <sup>b</sup>	Y	Placement of riprap to control road bank erosion at various locations.
Ophelia Creek	AG, SC <sup>b</sup>	N	No work will be performed below OHW
Robinson Creek	AG, SC <sup>b</sup>	N	No work will be performed below OHW
Gilliland Creek	AG, SC <sup>b</sup>	Y	Culvert Replacement
Warner Creek	AG, SC <sup>b</sup>	Y	Culvert Replacement

- a. AG – arctic grayling  
 SF – sheefish  
 RF – roundfish  
 LS – longnose sucker  
 SS – slimy sculpin

- b. Arctic grayling and slimy sculpin may migrate in Walker Fork and its tributaries during the summer to take advantage of feeding opportunities.

Source: BLM, 2003 and Shannon & Wilson, 2003.



#### 4.8.2 Essential Fish Habitat

In 1999, ADFG determined that anadromous fish runs in the Fortymile River and its tributaries are at the upper limit of their natural distribution and may not successfully reproduce on an annual basis. Adequate winter water flows are the limiting factor for successful egg hatch, and in most years it appears there is insufficient flow. Based on their information, ADFG delisted, without prejudice, the Fortymile River and its tributaries from the *Catalog and Atlas of Waters Important for the Spawning, Rearing or Migration of Anadromous Fish* (ADFG, 1999). The Taylor Highway upgrades are being proposed entirely within drainages that are tributaries to Fortymile River. Therefore, no essential fish habitat (EFH) will be impacted by the proposed upgrades.

#### 4.8.3 Wildlife Resources

Caribou (*Rangifer tarandus*), moose (*Alces alces*), Dall sheep (*Ovis dalli*), grizzly bear (*Ursus arctos*), black bear (*U. americanus*), and wolf (*Canus lupus*) are the big game species present in the Fortymile River watershed. Fur bearers such as marten (*Martes Americana*), lynx (*Lynx Canadensis*), red fox (*Vulpes vulpes*), beaver (*Castor Canadensis*), otter (*Lontra Canadensis*), and mink (*Mustela vison*) are known in the area. In addition, during a site visit, several porcupines (*Erethizon dorsatum*) were observed. Small game species such as sharp-tailed (*Tympanuchus phasianellus*), spruce (*Dendragapus canadensis*) and ruffed grouse (*Bonasa umbellus*), willow (*Lagopus lagopus*) and rock ptarmigan (*L. mutus*), and snowshoe hare (*Lepus americanus*) occupy habitat in the area. Additionally, raptors, waterfowl, shorebirds, and a variety of passerine birds can be found in the area. Neither the National Marine Fisheries Service (NMFS) nor the USFWS web sites indicated threatened or endangered species existing in the project area. The project area is within the range of the American Peregrine falcon (*Falco peregrinus*), which was removed from the list of threatened and endangered species on August 25, 1999.

According to ADFG the areas around Chicken and Jack Wade Junction are intensively used for hunting caribou, moose, and bear. The Fortymile caribou herd utilizes habitat in the project corridor as they migrate. The *ADFG Alaska Habitat Management Guide* shows the spring migration in the northwest direction with their return to the southeast in the fall (ADFG, 1985). In 2002, the population was estimated at 46,000. The herd is actively managed by ADFG, and the population is increasing. Additionally, 2003 marks the first time since the early 1960's that the Fortymile caribou herd has crossed the Yukon River during their migration. While caribou populations may be on the rise in this area, the moose population is decreasing. The low density of the moose population is unrelated to the existing road and is likely the result of over hunting, and calf mortality from predation (Gardner, 2002). An

ANILCA Section 810 Subsistence Evaluation was completed and can be found in Appendix E. The evaluation found that due to the nature of the proposed project, rehabilitation of an existing highway, the project will not likely result in a significant reduction of subsistence uses or increased competition due to: direct impacts on the resource or habitat; changes in availability of the resource; or limitations on access to the resource.

Based on this information wildlife habitat will not be fragmented, no migration corridors will be affected, and wildlife/vehicle accidents should not increase. Vehicle numbers and speeds may increase due to the improved road surface, but the new highway alignment will increase sight distance and vehicle maneuverability which will help reduce the potential for wildlife vehicle accidents.

#### 4.7.4 Raptors

ABR, Inc. completed raptor habitat surveys in the late 1990's when raptor habitat was increasing. Information provided by ABR on the presence of raptors within the project area is as follows. There are many pairs of peregrine falcons nesting along the South Fork, but almost all downstream from the highway. The lower Walker Fork and the South Fork below its confluence with the Walker Fork has the best habitat for cliff nesters. No cliff nesters were found on Wade Creek; however, its tributaries were not investigated. No bald eagle (*Haliaeetus leucocephalus*) nests were located on any of the project drainages, although a golden eagle (*Aquila chrysaetos*) nest was identified more than two miles up the Dennison Fork. Additionally, a peregrine falcon nest was identified on the first large cliff above the Mosquito Fork highway crossing (Ritchie, 2002). USFWS identified two peregrine falcon nests within a mile of the Taylor Highway in the project area. The peregrine falcon nests are not expected to be affected by the proposed project because the road will remain on essentially the same alignment after reconstruction.

#### 4.9 Threatened and Endangered Species

There are no known threatened or endangered species in the project area. Detailed information is included in Appendix C, Section 6.0. Correspondence with USFWS can be found in Appendix F.

#### 4.10 Migratory Bird Treaty Act

Executive Order 13186, Migratory Bird Treaty Act, protects species or families of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. There are 445 species of birds in Alaska, most of which are migratory (USFWS, 2002). Research

indicates in the project area there are between 113 and 159 species of birds, most of which are migratory birds (USFWS, No Date, and Sowl, 1998). Ten of these species have special designations from ADFG and USFWS, as described in Table 3. All ten species infrequently use the project area. USFWS in Tok was contacted regarding migratory birds in the project area and they referred to the bird checklists for the Upper Tanana Valley (Sowl 1998) and Yukon Flats National Wildlife Refuge (USFWS, No Date) for species present in the project area (Johnson, 2003). No bird surveys have been performed in the project area.

**Table 3**  
**Migratory Bird Species in the Project Area with Special Designations**

Species	USFWS Bird of Conservation Concern <sup>a</sup>	ADFG State of Alaska Species of Special Concern <sup>b</sup>	Occurrence in Project Area
Peregrine falcon	Yes	Yes	Rare <sup>c</sup>
Olive-sided flycatcher ( <i>Contopus lorealis</i> )	No	Yes	Rare
Gray-cheeked thrush ( <i>Catharus minimus</i> )	No	Yes	Rare
Townsend's warbler ( <i>Dendroica striata</i> )	No	Yes	Rare
Blackpoll warbler ( <i>D. striata</i> )	No	Yes	Rare
American golden-plover ( <i>Plurialis dominica</i> )	Yes	No	Rare
Whimbrel ( <i>Numenius haemastica</i> )	Yes	No	Rare
Hudsonian godwit ( <i>Limosa haemastica</i> )	Yes	No	Casual/Accidental <sup>d</sup>
Surfbird ( <i>Aphriza rirgata</i> )	Yes	No	Casual/Accidental
Short-billed dowitcher ( <i>Limnodromus grisens</i> )	Yes	No	Casual/Accidental

a. USFWS, 2002

b. ADFG, 1998

c. Rare – present annually in very small numbers or locally distributed. Infrequently encountered.

d. Casual/Accidental – do not occur annually. Species beyond normal range. May not occur again.

#### 4.11 Water Body Involvement

Water bodies with the potential to be affected by this project include Mosquito Fork, Chicken Creek, Lost Chicken Creek, South Fork, Walker Fork, Wade Creek, Warner Creek, Gilliland Creek, Taylor Creek, Jefferson Creek, Wilby Creek, Robinson Creek, and several unnamed Wade Creek tributaries. Potential impacts include bridge replacement, culvert installation and repair, and bridge pier repair.

The current one-lane Chicken Creek Bridge will be replaced with a two-lane, single span bridge. During construction of the new bridge, a temporary culvert will be used to keep the road open to through traffic. Chicken Creek does not support anadromous or resident fish due to previous mining activities that severely changed the bed and habitat of the creek (Shannon & Wilson 2003). Chicken Creek is not listed as a navigable water by the USACE or the U.S. Coast Guard (USCG). A USACE Section 404 permit will be completed for the placement of fill in Chicken Creek and its associated wetlands.

Bridge approach railing and bridge deck railing work will be performed on the South Fork and Walker Fork bridges. This work is not expected to have an impact on the South Fork or Walker Fork, since it does not require work below OHW. Pier work will also be conducted on the South Fork Bridge to patch concrete spalling at and below the water line. This work will be conducted by building a partial wooden coffer dam around the pier and pumping out the water (Photo 4 in Appendix A). The coffer dam will not extend all the way to the stream bottom; it will only extend as far down as necessary to repair the pier. Workers will access the piers by boat; no heavy equipment will be in the river during repair of the piers. The river will not be closed to boaters during construction. Neither South Fork nor Walker Fork are listed as navigable waters by the USACE or the USCG. No fill is expected to be placed in either river due to the bridge work.

The proposed project would include repair of existing culverts and installation of new culverts at numerous locations to improve and maintain natural drainage patterns. All culverts will be sized and installed to maintain water flow during high-water conditions. Culverts installed on fish streams will be designed to maintain water flow and allow fish passage. Culvert design and installation on fish streams would follow guidance outlined in the "Memorandum of Agreement – Design, Permitting and Construction of Culverts for Fish Passage" between ADOT&PF and ADFG (ADOT&PF, 2001). All culverts with a diameter greater than four feet will be designed by a hydrologist. Riprap will be used at the inlet and outlet of culverts to prevent scouring and erosion.

Riprap will be used to stabilize the road embankment along the South Fork at MP 75.25 and at various locations along Wade Creek. Riprap will only be used at locations where the road cannot be realigned far enough away from Wade Creek to prevent erosion. The final location of riprap will be determined during final design.

Stabilization practices will be used during and after construction to limit sedimentation of adjacent surface water. Stabilization practices could include: temporary and permanent seeding, geotextiles, vegetative buffer strips, protection of trees, construction phasing, and other appropriate measures. Structural practices will also be used to limit sediment transport from exposed soils into surface waters. Structural practices could include silt fences, earthen dikes, drainage swales, sediment traps, or check dams. Cut and fill slopes resulting from construction will be revegetated so soil will not erode into adjacent waters. A Storm Water Pollution Prevention Plan (SWPPP) will be developed by the contractor and approved by ADOT&PF prior to commencement of construction activities.

#### **4.12 Alaska Coastal Management Program**

The proposed project is not within the Alaska Coastal Management Plan boundary.

#### **4.13 Hazardous Waste**

The Alaska Department of Environmental Conservation (ADEC) contaminated sites database contains no inventoried hazardous waste sites within the project corridor. However, the ADEC Leaking Underground Storage Tank (LUST) database listed one site at the ADOT&PF maintenance station at MP 74 of the Taylor Highway (Facility ID 1765). According to ADEC, the tanks have been removed but residual fuels-related contamination remains beneath the dispenser island. This site is outside the ROW and is not expected to be affected by the proposed project.

The ADEC spills database indicated there was one recorded spill in 1994 at MP 92-96. A truck rolled over and 200 gallons of diesel were discharged. The case was closed on July 2, 1996. No other spills were recorded in the project corridor.

According to BLM, there is contaminated soil (unknown quantity) and solid waste at the Glen Couch site (MP 84.25, Figure 5). BLM is in the planning stage of cleaning up the site. Site cleanup is not expected prior to 2005 (Walker, 2004). ADOT&PF is proposing to obtain a ROW easement in this area and will need to ensure that BLM has cleaned up the site prior to obtaining the easement. BLM is not aware of any other contaminated sites along the project corridor. One area of contamination was observed during a

site visit conducted in September 2002. A 12-foot by 10-foot area of stained soil was observed at approximately MP 83.7 on the north side of the road. In addition to the stained soil, there was miscellaneous metal debris and partially buried drums present. This area is outside of the project corridor and will not be affected by the proposed project. In addition to the stained soil, there are numerous locations along the project corridor with old mining equipment, miscellaneous metal debris, tires, and old vehicles. There is also debris in Wade Creek and in ponded areas adjacent to the current road.

Should contamination be discovered within the ROW during road construction, a corrective action plan approved by ADEC would be developed and implemented. As part of the construction contract, the contractor would be required to develop a Hazardous Material Control Plan (HCMP) to address containment, cleanup, and disposal of all construction-related discharges of petroleum fuels, oils, and/or other hazardous substances. In addition, a specification requiring the use of material "free from contamination" would be in the construction contract.

#### **4.14 Air Quality**

The proposed project is situated within an air quality attainment area, and the air quality meets or exceeds the Environmental Protection Agency (EPA) criteria for "healthy" air conditions. The ADT is projected to increase from 175 vehicles in 2000 to 250 vehicles in the design year (2020). The air quality impacts associated with vehicular emissions and airborne particulates (dust) is expected to be negligible because of the low traffic volumes. Dust levels will be lower after construction because of the asphalt being used to surface the road.

#### **4.15 Floodplain Impacts**

The No-Build alternative would result in the continued erosion of the road base in the Wade Creek floodplain. Floodplain would remain very limited throughout the Wade Creek Area. At Chicken Creek the existing one-lane bridge would remain. Under the No-Build alternative no fill would be placed in Chicken Creek.

Per EO 11988: Floodplain Management, as amended by EO 12148, U.S. Department of Transportation Order 5650.2 and Title 23, Code of Federal Regulations, Part 650, this project has been assessed for impacts to the floodplain. Executive Order 11988 requires that no federal action be developed within the base floodplain unless there is no practicable alternative.

There is no Federal Emergency Management Agency floodplain information available for the project area. The Alaska Community Flood Hazard Information website did not have flood information for Chicken or Boundary. Based on this information it has been determined that this project is not located in a regulatory floodplain. BLM has not mapped the floodplains in the project area (Kostohrys, 2003). According to BLM publication *Water Resources of the Fortymile National Wild & Scenic River, Alaska*, the Mosquito Fork is subject to flooding during moderate to high water, the South Fork is subject to flooding only during extreme high water, and the Walker Fork is subject to flooding during moderate to high water (Kostohrys et al, 1999). During a site visit there was evidence of erosion of the Taylor Highway from Wade Creek in numerous areas. In 2003 the Taylor Highway near the Walker Fork Campground was flooded in April (Appendix A, Photo 12). The road has been moved in the past due to washouts from flooding.

Additional floodplain will be created along Wade Creek where the new road is moved away from Wade Creek. In areas where the road is being realigned the existing embankment will be removed. The road realignments are shown on Figures 3 through 12. The proposed project includes moving up to 3.5 miles of road an average of 28 feet away from Wade Creek. In other areas of the project corridor the road will remain on essentially the same alignment. At multiple locations along Wade Creek and at MP 75.25 along South Fork, where it is not possible to move the road, bank armoring (riprap) will be needed to stabilize the road base. ADOT&PF is coordinating with the BLM hydrologist to limit the amount of riprap placed in Wade Creek. Riprap will only be used at selective locations to control highway flooding. The exact locations of riprap will be determined during final design. The road realignments along Wade Creek, when added together, would create over 12 acres of additional floodplain. Currently, there is very little floodplain along Wade Creek due to mining activities and the location of the road. The road reconstruction will create additional floodplain that would act as a buffer strip, separating the creek from the road, and would help minimize the effects of flooding, such as erosion and sedimentation, that occur every time it rains. Regrading and blending of the old roadbed will help with drainage and will be an improvement over existing conditions (Kostohrys, 2003).

It is not feasible to move the road out of the Wade Creek floodplain due to the steep valley surrounding the current road location. In order to avoid construction in the floodplain the road would need to be moved to the west and built on a new alignment through rugged mountains. The current floodplain conditions are a direct result of extensive placer mining activity in the area and do not represent a natural floodplain. The proposed project will improve the quality of the floodplain by realigning portions of the

road, repairing and replacing culverts, and improving drainage. There is no practicable alternative to the proposed road reconstruction and realignment in the floodplain.

The Chicken Creek floodplain will also be impacted during replacement of the bridge. Only a small portion of floodplain will be affected and would have to be affected by any alternative to provide access across the creek. The bridge will be designed to adequately pass the 50-year and 100-year floods without significant damage to the floodplain, bridge, or embankment. The bridge will be designed to minimize floodplain impacts. The banks of the river at the bridge crossing are not vegetated and have been highly disturbed from mining (Appendix A, Photo 11). There is no practicable alternative to the proposed encroachment.

#### **4.16 Noise Impacts**

Noise impacts from a roadway occur when predicted and/or actual noise levels after construction approach or exceed the FHWA noise abatement criteria or substantially exceed existing noise levels. The ADOT&PF's noise policy defines approach as within 2 decibel (dBA) of the noise abatement criteria (NAC). The FHWA NAC are 72 dBA for commercial receivers and 67 dBA for residential receivers. The proposed project will be in compliance with FHWA noise standards.

The level of highway traffic noise depends on the volume, the speed of traffic, and number of trucks in the flow of traffic. Generally, heavier traffic volumes, higher speeds, and a greater number of trucks increase the loudness of traffic noise. There are no baseline noise measurements available for the project area. Noise levels after construction are not expected to substantially exceed existing noise levels. Average daily traffic levels are currently 175 and are projected to increase to 250 in 2020. There are very few noise receivers (i.e. residential or commercial buildings) in the project area. Due to the low traffic levels projected for 2020, noise levels after construction are not expected to have an impact on the adjacent areas. Therefore, no noise abatement measures are proposed. Section 4.18 discusses construction noise impacts.

#### **4.17 Water Quality**

##### *4.17.1 Groundwater*

The proposed project is within the Fortymile River Watershed. Groundwater supplies residents in the area with drinking water through individual wells (Alaska Department of Community and Economic Development, 2002). The proposed project would have no direct impact to groundwater quality or



potable water sources. Sediment from road runoff would be minimized by maintaining vegetation buffers where possible, using porous embankment materials, and constructing drainage channels.

#### *4.17.2 Surface Water*

This project should improve the existing water quality of adjacent water bodies and wetlands along the project corridor. Surface water resources adjacent to the project area include Mosquito Fork, Chicken Creek, Lost Chicken Creek, South Fork, Walker Fork, Wade Creek, Warner Creek, Gilliland Creek, Taylor Creek, Jefferson Creek, Wilby Creek, Robinson Creek, several unnamed tributaries and unnamed wetlands. Many of the existing culverts are insufficient to maintain flow during high flow conditions, resulting in overflow and ponding adjacent to the road. In addition to insufficient culverts, Wade Creek erodes the road embankment at various locations every year. Proposed improvements to repair and/or install culverts, stabilize the road embankment, move sections of road away from Wade Creek, and the application of asphalt will result in improved water quality of adjacent water bodies and wetlands.

Pier work on South Fork and placement of culverts along the project length may temporarily increase sedimentation into streams. South Fork may support arctic grayling, sheefish, round whitefish, longnose sucker, and slimy sculpin (Shannon & Wilson, 2003). Specific methods of construction will be developed during the design phase. Bridge replacement at Chicken Creek will also result in a temporary increase in sedimentation of the creek. Due to a lack of spawning habitat, cover, and aquatic invertebrates Chicken Creek does not support a fishery (Shannon & Wilson, 2003). ADOT&PF will prepare an Erosion and Sediment Control Plan (ESCP) and the construction contractor will prepare a SWPPP to address issues raised in the ESCP. These plans will identify the best management practices that will be implemented during and following construction to minimize erosion and sedimentation and mitigate impacts to water quality.

#### **4.18 Permits and Authorizations**

The following permits and approvals may be required for the proposed project. Because laws and regulations may change prior to construction, this list will require review and potential revision as construction approaches.

- USACE Section 404/10 Permit;
- EPA National Pollutant Discharge Elimination System Construction General Permit;
- ADNR, Office of Habitat Management and Permitting Title 41 Habitat Permit; and

- ADEC 401 Certificate.

#### 4.19 Construction Impacts

Construction of this project is currently scheduled to be completed in three phases (Jack Wade Junction to the Alaska/Canada Border, Mosquito Fork to Walker Fork, and Walker Fork to Jack Wade Junction) with each phase taking a minimum of two construction seasons. Temporary impacts associated with road and bridge construction and repair activities are summarized in the following paragraphs.

- **Air Quality** would be temporarily diminished during construction as a result of dust and equipment emissions. Impacts would be minimized by using dust control measures, as necessary, and maintaining construction equipment in good running condition.
- **Noise levels** in the area of construction would increase because of the use of heavy equipment. Most of the project area is undeveloped. A few residences and businesses in Chicken and Boundary will experience temporary noise impacts from construction. Noise from road construction may also affect recreational vehicles traveling along the highway, but due to the low volume of traffic noise impacts are expected to be minimal.
- **Water quality** of the following streams may be affected during construction: Mosquito Fork, Chicken Creek, Lost Chicken Creek, South Fork, Walker Fork, Wade Creek, Warner Creek, Gilliland Creek, Taylor Creek, Jefferson Creek, Wilby Creek, Robinson Creek, and several unnamed tributaries to Wade Creek. Work will be conducted so impacts are minimized. Pier work on South Fork and installation of culverts along the project corridor may temporarily increase sedimentation into streams. Pier work on South Fork will most likely entail the construction of partial coffer dams that will be pumped dry for workers to repair the concrete spalling. No heavy equipment is anticipated in the river. The piers will be accessed by boat with equipment such as generators being staged on the bridge deck. Specific methods of construction will be developed during the design phase. ADOT&PF will prepare an ESCP and the construction contractor will prepare a SWPPP to address issues raised in the ESCP. These plans will identify best management practices (BMP) that will be implemented during and following construction to minimize erosion and sedimentation and mitigate impacts to water quality.
- **Staging and storage of fuels** would be in upland areas and would not be allowed within 100 feet of any wetland or stream/river. The construction contractor would be required to identify all

fuels, oil, paint, lubricants, etc. that would be used and/or stored in the project area, prepare a hazardous material control plan that addresses how fueling would be accomplished, where and how hazardous materials would be stored and handled, and what measures would be taken in response to a release. All contamination encountered would be handled and disposed of in accordance with an ADEC-approved action plan.

- **Fish and wildlife impacts** would be minimized by implementing BMP's to reduce turbidity levels in surface water adjacent to the project area to the lowest extent possible.
- **Vehicular traffic** on the Taylor Highway would be temporarily disrupted, although a one-way traffic lane or suitable detour would remain open at all times to maintain access except for short term (2-4 hours) closures during certain construction activities such as placing culverts. Notice of road closure would be coordinated with various agencies, the Alaska State Troopers, Canadian authorities, fuel hauling companies, and tourism companies that drive buses on the Taylor Highway. Communities affected by the road closure would also be notified. Heavy equipment and material-hauling truck traffic on the Taylor Highway would increase during construction. Standard traffic control procedures such as flagging and signs will be used during construction to maintain safe driving conditions for through traffic.
- **Recreational river use** (fishing, canoeing, rafting) of the streams in the project area would not be restricted during project construction. Owners of mining claims would have access to their claims during project construction.
- **Economic impacts** to the local communities (Boundary and Chicken) could result from an increase in construction workers to the area utilizing the stores and restaurants. It is not likely there will be much local hire due to the small population base. The economic impacts are expected to be minor.

#### 4.20 Material Sites

Material for project construction will come from five different locations: Material site 78-5-031 (MP 80 Taylor Highway), Material Site 78-052-2 (between MP 6 and 7 of the Top of the World Highway), road cut material at MP 72 and 89.1 of the Taylor Highway, and tailing piles along Wade Creek (Figures 15 and 16). Each site is described in more detail below. On October 30, 2003 the State Historic Preservation

Officer concurred that no historic properties would be affected by the proposed project, including the material sites.

#### Material Site 78-5-031

This material site has been extensively used in the past by maintenance and operations and a large portion of the site has been previously disturbed. The undisturbed portion is located in low-value black spruce wetlands. It is expected that the site will be depleted during project construction. After construction the site will be reclaimed by seeding with native vegetation and allowed to return to a natural state. The material site is located within the Fortymile W&SR, South Fork River Scenic Withdrawal. No unique wildlife habitat is located within the material site.

#### Material Site 78-5-052-2

This is a large material site that has had very little previous development. The site is located in uplands and will likely be used for the next 20-30 years before it is depleted. The site is designed to have a 100-foot vegetative buffer on three sides to screen it from the road. This site is located on State of Alaska land and has been previously permitted. No unique wildlife habitat is located at this site.

#### Riprap Source at MP 72

Riprap would be created from widening the road cut at this location. The road cut will be within the current ADOT&PF road ROW. The road cut would be located in wetlands. The riprap would be used to stabilize the newly constructed road from erosion.

#### Riprap Source MP 89.1

Riprap would come from widening the road cut at this location. The road cut will be within the current ADOT&PF road ROW. There are no wetlands at this location. The riprap would be used to stabilize the newly constructed road from erosion.

In addition to the above material sources, tailings within the highway ROW along Wade Creek will be used as fill during road construction. No wetlands or archaeological sites will be affected by use of the tailings.

## 5.0 ENVIRONMENTAL COMMITMENTS AND MITIGATION MEASURES

Environmental commitments and mitigation measures incorporated in this project include the following:

- Creation of approximately 12 acres of additional floodplain habitat along Wade Creek through realignment of the highway.
- Maintenance of the existing tree buffer between the highway and the historic Jack Wade Camp.
- Improving natural drainage patterns by providing culverts for cross drainage. Currently there is very little cross drainage due to an inadequate number of culverts and improperly sized culverts.
- Design culverts to allow fish passage at all fish stream crossings.
- Construct public facilities to enhance existing and new recreation areas. These include the Walker Fork Wayside, Mosquito Fork Dredge trailhead parking, and various scenic pullouts.
- ADOT&PF will prepare an ESCP to minimize the potential for sediment to reach surface waters. Temporary erosion control measures, including straw bales and/or silt fencing will be used during construction and kept in place until newly seeded plants can bind with the soil. The Contractor will prepare a SWPPP to reduce air and water construction impacts to the maximum extent practicable. This will include a hazardous materials control plan to address measures to prevent and respond to potential releases of hazardous material during construction.
- Refueling and servicing of equipment shall not be performed within 100 feet of wetlands or waterbodies with the exception of low mobility equipment being used for road construction. The HMCP will provide a detailed process for fueling this equipment within 100 feet of wetlands or waters of the U.S. (Wade Creek). Fueling and service vehicles will be equipped with adequate materials (such as sorbent pads, booms, etc) to immediately contain and commence clean-up of spilled fuels and other petroleum products.
- Best management practices will be used and maintained to prevent pollution of surface and groundwater, soil, and the atmosphere with any contaminants including hazardous or toxic materials. Any release of these materials into the environment will require immediate corrective action by the contractor in accordance with applicable State and Federal Regulations.
- If contaminated or hazardous materials are encountered during construction, all work in the vicinity of the contaminated site will be stopped until ADEC is contacted and a corrective action plan is approved by ADEC.

- Advance notice of road closures will be given to reduce construction impacts on highway users.

## 6.0 COMMENTS AND COORDINATION

This section describes the public and agency outreach (scoping) conducted by ADOT&PF and ASCG to support preparation of this EA. The purpose of the public and agency outreach is to determine issues, concerns, and alternatives that should be evaluated in the EA. All comments and issues identified by the agencies and public to date are summarized in this section. Scoping summary information can be found in Appendix H.

### 6.1 Agency and Public Coordination

The environmental process originally began for a portion of the project area in 1997 for MP 82 to the Alaska/Canada Border. A draft Categorical Exclusion (CE) and Section 4(f) document were prepared by ADOT&PF and reviewed by BLM. BLM concurred with the findings in the two reports on February 19, 1998. The CE was never finalized or approved by FHWA because it was determined that the environmental document needed to cover proposed road improvements from MP 64.5 to the Alaska/Canada Border.

In December 1999, ADOT&PF initiated the environmental process for rehabilitation of the Taylor Highway this time from MP 64.5 to the Alaska/Canada Border. A meeting was held with BLM on December 16, 1999 to discuss project status and schedule. On September 5, 2001, ADOT&PF sent out agency scoping letters. In response to the scoping letter BLM sent a letter requesting more detailed information about the project. To answer BLM's questions ADOT&PF and BLM met on January 17, 2002 to discuss project schedule, ROW status, and Fortymile management requirements. In September 2002, the environmental services for the project were contracted to a consultant and the NEPA process was initiated with a site visit and initiation of the public and agency scoping in November 2002. The following sections describe the most recent round of public and agency coordination conducted by ADOT&PF for the proposed project.

#### 6.1.1 Agency Coordination

An agency meeting was scheduled for December 4, 2002 at the ADOT&PF Fairbanks office. Due to a lack of interest the meeting was not held. Agency scoping letters were sent out on November 29, 2002 with comments requested by December 31, 2002. Responses to the scoping letter were received from ADEC, BLM, NMFS, and ADFG. Scoping letters were sent to mining organizations in early December, 2002 with comments requested by January 7, 2003. No comments were received from the mining organizations. In addition, nine federally recognized tribes were contacted regarding the location of and

potential impacts to cultural resources within the project area. No responses were received from any of the tribes (Appendix G).

Numerous meetings were held between ADOT&PF and BLM. BLM attended the public scoping meeting in Tok on December 5, 2002 and met with ADOT&PF after the meeting to discuss the project. In February 2003, the ADOT&PF project manager, design engineer, BLM hydrologist, and BLM Outdoor Recreation Planner met several times in Fairbanks to discuss the road alignment, road design, and the use of riprap along Wade Creek. During these meetings BLM requested that the road be moved as far from Wade Creek as feasible and that the use of riprap be minimized. Based on these meetings, ADOT&PF revised the road design to incorporate BLM's requests to the extent possible. On June 9, 2003 ADOT&PF, BLM, and ASCG met in Tok to discuss the proposed project. The next day (June 10) ADOT&PF and BLM participated in a site visit to discuss project details such as the location of proposed waysides, proposed bridge work, and the location and rehabilitation of material sites. The entire project corridor was driven during the site visit. Coordination with BLM has also involved many phone calls and emails with ADOT&PF and ASCG. Documentation relating to coordination with BLM can be found in Appendix I.

#### 6.1.2 Public Coordination

A public notice was published in the *Mukluk News* on November 21, 2002 and the *Fairbanks Daily News-Miner* on November 27, 2002. In the notices, the proposed project was described, the public meeting was announced, and input and comments were sought. The public meeting was also announced on the Caribou Clatter ham radio service.

A public meeting was held in Tok, Alaska on December 5, 2002. The meeting provided the opportunity for interested parties to comment on the proposed project and receive project information. The sign-in sheet shows that six people attended the meeting, including two representatives from BLM. Comment sheets were provided for people to mail in their written comments. One comment form was received at the meeting. No public comment forms were received in the mail.



## 6.2 Summary of Comments

Responses to comments are in italics after each comment.

### 6.2.1 Agency Comments

- A fish habitat permit may be required for activities affecting fish-bearing streams (ADFG). *A fish habitat permit will be obtained by ADOT&PF for all work in fish bearing streams.*
- ADFG does not expect the proposed project to affect wildlife migrations or negatively bisect critical wildlife habitats.
- The general areas around Chicken and Jack Wade Junction are intensively used caribou, moose, and bear hunting areas (ADFG).
- ADFG provided a copy of the fish stream log for the Taylor Highway.
- An ANILCA 810 finding and evaluation will need to be included in the EA (BLM). *An ANILCA 810 finding and evaluation is included in Appendix E.*
- The Migratory Bird Treaty Act EO should be discussed in the EA and may require mitigation (BLM). *The Migratory Bird Treaty Act is discussed in Section 4.9. No adverse impacts are expected from the proposed project.*
- If realignment or placement of turnouts and waysides displaces any of the BLM signage indicating entering or leaving the National Wild and Scenic River corridor for the purpose of federal subsistence hunting, then the signs need to be replaced at the new crossing points (BLM). *Any signs displaced by project construction will be replaced by ADOT&PF.*
- ROW authorization may be needed from BLM at MP 84-85 (BLM). *ADOT&PF will coordinate all ROW with BLM.*
- A Wild and Scenic Rivers Act, Section 7 Evaluation is being completed by BLM and will need to be included in the EA (BLM). *The Draft Section 7 Evaluation is included in Appendix D.*
- NMFS concurred that no EFH will be affected by the proposed project.

### 6.2.2 Public Comments

- Concern was expressed about the flooding potential of the proposed Walker Fork wayside. *The wayside will be designed to minimize flooding of the site.*
- Residents wanted to know where money was going to come from to maintain the road after it is improved. *It was explained that money for maintenance would come from a different source than construction money and that the environmental document would not be covering maintenance costs.*
- Construction on the Taylor Highway should be coordinated with construction on the Alaska Highway so that the only two roads into the state from Canada are not under construction at the same time. *Construction impacts will be minimized as much as possible.*
- Concern was expressed about how the high-float asphalt will hold up on the sections of road that experience glaciation. *Likely the entire road will be surfaced with high-float asphalt and if the road does not hold up in areas of glaciation the road will be graded and left as gravel.*
- How will the new bridge at Chicken Creek be affected by flooding and will it increase flood potential to downstream residents? *The Chicken Creek Bridge will be designed to withstand a 100 year flood and will not increase flood potential to downstream residents.*
- Will mining claims be affected by road construction? *ADOT&PF will acquire ROW from some mining claims along Wade Creek (see Section 4.1 for a discussion of ROW impacts) for construction of the road; the remaining mining claims will not be affected by road construction.*
- Will the Fortymile caribou herd be affected by road construction? *The Fortymile Caribou herd is not expected to be affected by the proposed road improvements because the road will remain on essentially the same alignment.*
- The sinkhole at MP 80 needs to be addressed during design. *The sinkhole will be taken into account during design.*
- The road base needs to be stabilized. *The road is being moved away from Wade Creek where possible to stabilize the highway from being eroded by the creek. The road is also to be rehabilitated for the entire length of the project corridor.*

- The road needs to be armored where it is adjacent to Wade Creek. *The road is being moved away from Wade Creek where possible and will be armored with riprap where it is not possible to realign the road.*
- Snow drifting on Boundary Road near the U.S. Customs at the border needs to be addressed. *Snow drifting will be taken into account during design.*
- A Chicken resident requested a walkway from the Chicken Creek Bridge to the airport road. The reconstructed road will have four-foot shoulders which will allow an area for pedestrian use. Due to the low population, pedestrian use is expected to be minimal.

## 7.0 PROGRAMMATIC SECTION 4(F) EVALUATION

A Programmatic Section 4(f) Evaluation was completed for the proposed project and signed by ADOT&PF on May 28, 2004 and FHWA on June 2, 2004. The project's applicability is based on the following FHWA guidelines:

1. The proposed project is designed to improve the operational characteristics, safety, and/or physical condition of existing facilities on essentially the same alignment. This includes 4R work (resurfacing, restoration, rehabilitation, and reconstruction); safety improvements, such as shoulder widening and the correction of substandard curves; bicycle and pedestrian facilities; and bridge replacements on essentially the same alignment.
2. The Section 4(f) land is publicly-owned recreational land within the existing Withdrawal.
3. The amount and location of the land to be used would not impair the use of the remaining Section 4(f) land, in whole or in part, for its intended purpose. The total amount to be acquired by the proposed project, ROW and easement combined is approximately 5 acres. This proposed take does not exceed the maximum limit of one percent of the total size (3,302 acres) of the Section 4(f) Withdrawal.
4. The proximity impacts of the project on the remaining Section 4(f) land would not impair the use of such land for its intended purpose. The existing highway already bisects the Section 4(f) land and does not impair the use of this land for its intended purpose nor will the proposed improvements to the current facility.
5. The BLM has jurisdiction over the Section 4(f) land and has concurred in writing with the assessment of the potential impacts of the proposed project on Section 4(f) land (Appendix B).
6. The project would not require land from a site purchased or improved with funds under the Land and Water Conservation Fund Act, the Federal Aid in Fish Restoration Act (Dingell-Johnson Act), the Federal Aid in Wildlife Act (Pittman-Robertson Act), or similar laws, or lands otherwise encumbered with a Federal interest.
7. This is not a project for which an Environmental Impact Statement was prepared.

ADOT&PF will comply with the Section 4(f) requirement for the Wade Creek Withdrawal of the Fortymile Wild and Scenic River by applying a nationwide evaluation in accordance with Projects that Use Minor Amounts of Land from Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuges. A copy of the Programmatic Section 4(f) Evaluation can be found in Appendix B.

## 8.0 REFERENCES

- Alaska Department of Community and Economic Environment. 2002. Alaska Community Database - Chicken. <http://www.dced.state.ak.us>
- Alaska Department of Fish and Game (ADFG). 1985. *Alaska Habitat Management Guide - Western and Interior Regions, Subsistence Use Areas*.
- ADFG. 1999. Letter to David Likins, Fortymile Mining District, regarding anadromous stream classification for the Fortymile River: Alaska Department of Fish and Game, February 18.
- ADFG. 1998. *State of Alaska Species of Special Concern*.  
[http://www.state.ak.us/adfg/wildlife/geninfo/games/es\\_ssc.htm](http://www.state.ak.us/adfg/wildlife/geninfo/games/es_ssc.htm) retrieved on July 29, 2003.
- Alaska Department of Natural Resources (ADNR). 2003. *Upper Yukon Area Plan*. February.
- Alaska Department of Transportation and Public Facilities (ADOT&PF). 2001. Memorandum of Agreement between Alaska Department of Fish and Game and Alaska Department of Transportation and Public Facilities for the design, permitting, and construction of culverts for fish passage. August 3.
- ADOT&PF. 2002. *Alaska Environmental Procedures Manual, Appendix E General Guidance on Preparing Section 4(f) Documents*. April 1.
- ADOT&PF. 2003. *Alaska Preconstruction Manual*. January 16.
- Bureau of Land Management. 2003. *Preliminary Finding (BLM) Pursuant to Section 7 of the Wild and Scenic Rivers Act for the Proposed Taylor Highway Project (MP 64 near Chicken, Alaska, north to the Canadian Border)*. May 8.
- Buzzell, R. 2003. *Cultural Resource Survey of the Taylor Highway MP 64.5-95.6 and the Top of the World Highway MP 0.0-13.5 (Jack Wade Junction to the U.S.-Canadian Border), Project No. 66446*. Alaska Department of Natural Resources – Office of History and Archaeology. July.
- Fehrenbacher, J. 2003. ADOT&PF Maintenance Manager. Email correspondence with E. Miller, ASCG Incorporated, April 10.
- Gardner, C. 2002. Telephone conversation between Craig Gardner, Wildlife Biologist with ADFG, and Katie Walter, Shannon & Wilson, Inc., Seattle, Wash., September 27.
- Gronquist, R. 2003. BLM Wildlife Biologist. Email correspondence with E. Miller, ASCG Incorporated, February 28.
- Grundy, S. 1986. Trip report, Fortymile River, State of Alaska: memorandum from Scott Grundy, Habitat Division, State of Alaska, to Alvin G. Ott, Habitat Division, Department of Fish and Game, State of Alaska, July 7-10, 3p.
- Johnson, B. 2003 Bird Biologist, Teltin National Wildlife Refuge. Telephone conversation with E. Miller, ASCG Incorporated, July 11.
- Kostohrys, J., B. Sterin, and T. Hammond. 1999. *Water Resources of the Fortymile National Wild & Scenic River, Alaska: Stream Gaging Data, 1989-1995*. U.S. Department of the Interior, Bureau of Land Management.
- Kostohrys, J. 2003. BLM Hydrologist. Telephone conversation with E. Miller, ASCG Incorporated, March 13.
- Kostohrys, J. 2003. *Comments on the Taylor Highway Reconstruction Project, Mosquito Fork to the Border*. U.S. Department of the Interior, Bureau of Land Management.

- Marcotte, J.R. 1991. *Wild Fish and Game Harvest and Use by Residents of Five Upper Tanana Communities, Alaska 1987-88*. Alaska Department of Fish and Game.
- McHattie, R. 2001. *Asphalt Surface Treatment Guide*. Alaska Department of Transportation and Public Facilities and Federal Highway Administration. 136 pp.
- Ritchie, B. 2002. Email regarding raptor surveys in the Chicken, Alaska, area, from Bob Ritchie, ABR Inc., to Katie Walter, Shannon & Wilson, Inc., Seattle, Wash., November 12.
- Shannon & Wilson. 2003. *Wetland Delineation, Vegetation Classification, and Wildlife Assessment, Taylor Highway Project, Chicken Alaska to Canadian Border*. February.
- Sowl, K.M. 04/98. Birds of the Yukon Flats National Wildlife Refuge Checklist. U.S. Fish and Wildlife Service. Unpaginated. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. <http://www.npwrc.usgs.gov/resource/othrdata/chekbird/r7/yukflats.htm> (Version 26OCT98).
- U.S. Army Corps of Engineers. 1987. *Corps of Engineers wetlands delineation manual: Vicksburg, Miss., U.S. Army Engineer Waterways Experiment Station, Technical Report Y-87-1*.
- U.S. Department of the Interior (DOI). BLM. 1983. *River Management Plan, Fortymile River*. Fairbanks Division. December.
- U.S. DOI. BLM. 1976. *Fortymile a Minimum Personnel Contact Visitor Management Program*. May.
- U.S. Fish and Wildlife Service (USFWS). 2002. *Migratory Bird Management* <http://www.r7.fws.gov/mbm/introduction.html>
- USFWS. No Date. Bird Checklist for Alaska. Department of Game and Fish, Game Management Unit 12. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. <http://www.npwrc.usgs.gov/resource/othrdata/chekbird/r7/unit12.htm> (Version 30DEC2002).
- USFWS. 2002. *Birds of Conservation Concern*. Division of Migratory Bird Management. Arlington, Virginia. December.
- Walker, S. 2004. BLM Fortymile Hazardous Waste Specialist. Telephone conversation with E. Miller, ASCG Incorporated, January 20.

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The following table provides the list of personnel involved in the preparation of the EA.

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