

# ALEKNAGIK WOOD RIVER BRIDGE

ADOT&PF Project No. STP-0001(152)/53581

## *Revised Environmental Assessment*

August 2004



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**Alaska Department of Transportation and Public Facilities**

**REVISED ENVIRONMENTAL ASSESSMENT**

**Aleknagik Wood River Bridge  
Project No. STP-0001(152)/53581**

Submitted Pursuant to 42 U.S.C. 4332(2)(c)  
by the  
U.S. Department of Transportation  
Federal Highway Administration  
and the  
State of Alaska  
Department of Transportation and Public Facilities

This action complies with Executive Order 12898, Environmental Justice; Executive Order 11988, Floodplain Management; and Executive Order 11990, Protection of Wetlands.

August 24, 2004  
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The Alaska Department of Transportation and Public Facilities, in cooperation with the Federal Highway Administration, proposes to improve overland access between the community of Aleknagik, located on the north and south shores of Lake Aleknagik. The proposed project would (1) construct a bridge over the Wood River and (2) construct gravel access roads on the north and south shores to connect the bridge to the community.

## SUMMARY

The City of Aleknagik, located at the southeast end of Lake Aleknagik, is separated by the waters of the lake and the Wood River. Current transportation modes between the north and south shores are by boat during ice-free periods and snowmobile during winter. The Alaska Department of Transportation and Public Facilities (hereafter, the Department) is proposing to provide a road link between the two portions of the community. The proposed project would include construction of a bridge across the Wood River and access roads to the bridge on the north and south shores.

Alternatives evaluated in the Environmental Assessment (EA) include the No-Build alternative, two bridge types for the Wood River, two alternative access road alignments on the south side of the river, and three alternative access road options on the north side of the river.

The purpose of this EA is to document the project elements and assess the potential environmental impacts to determine whether project impacts would be significant pursuant to Title 40, Code of Federal Regulations, Part 1508.27, the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA). If the impacts are found not to be significant, the Federal Highway Administration (FHWA) will issue a Finding Of No Significant Impact. If there are significant impacts, an Environmental Impact Statement will be prepared. Significant environmental impacts are identified with the assistance of the public and resource agencies that have subject matter expertise or jurisdiction by law.

Because this project would affect wetlands, the project was scoped pursuant to the *Interagency Working Agreement to Integrate Section 404 and Related Permit Requirements into the National Environmental Policy Act* (finalized June 11, 1997). The intent of the U.S. Army Corps of Engineers (USACE) 404/NEPA Merger Agreement (Appendix C) was to merge the permitting and environmental document procedures, running them concurrently instead of serially as was done in the past. The goal was to receive the USACE permit at the same time the Department receives environmental document approval. Under the merger agreement, the Department worked with resource protection agencies during preparation of the environmental document to ensure that it included all impacts that must be addressed by the USACE. That way, the

Department's environmental document could be adopted by the USACE for the issuance of the USACE permit, thus saving time and money. The merger agreement expired in early 2002.

The following issues were evaluated for the build and No-Build alternatives.

*Relocation.* The proposed project would potentially require relocation of residential structures under all of the access road alternatives: one residential structure under Alignments 1 and 2 on the south shore (same structure for both alternatives), one residential structure under Option A on the north shore, and one residential structure under Options B and C on the north shore (same structure for both options).

*Economic.* Possible economic benefits from the proposed project include improved access to jobs, higher property values, increased business opportunities, and reduced cost of supplies and materials. Local governments would benefit from the potential elimination of duplicate services currently provided on both sides of the river.

*Water Quality.* Minimal long-term impacts to water quality are expected from the proposed project. The proposed project would include repair of existing culverts and installation of new culverts as necessary to maintain or improve drainage, as well as installation of a culvert or a bridge at Mission Creek. Placing piers in the Wood River would result in a small amount of scour around each of the pilings.

*Wetlands.* Some amount of fill in wetlands would be necessary to construct all alternative access roads on the north and south shores. While piers would be constructed in waters of the U.S., no wetland impacts would result from the construction of either of the two bridge types.

*Fish and Wildlife.* The Wood River and Mission Creek are important producers of salmon and other fish important to the Bristol Bay economy. A Title 41 fish habitat permit from the Alaska Department of Natural Resources (ADNR) Office of Habitat Management and Permitting (OHMP) would be required for work below ordinary high water of Mission Creek and below the ordinary high water or mean high water of the Wood River (the higher elevation of the two at the site). Mitigation measures would be implemented during design and construction of the project to minimize impacts to fish.

*Subsistence.* The proposed project would allow subsistence hunters living on the south shore of the Wood River and Dillingham more consistent winter access to north shore wildlife resources (e.g., moose and caribou). Conversely, subsistence hunters living on the north shore would have increased competition for these resources.

*Hazardous Materials.* A Phase I Site Investigation identified one property on the north shore that was previously used as a dump. Although there is no known contamination, hazardous materials may have been disposed of at the site and may have affected the soil and groundwater within the proposed right-of-way near this location. The proposed access road alignment has been designed to avoid the property with the dump.

*Visual.* The bridge would not be visible from the City of Aleknagik. The bridge would be visible to Mission Lodge owners, employees, and guests; river users; and nearby residents. From the proposed bridge, motorists would be able to look southwest down the Wood River and northeast toward Mission Lodge.

*Construction.* Construction of this project would probably require two construction seasons. Temporary impacts associated with road and bridge construction activities include reduced air quality, increased noise, reduced water quality, the use of upland areas for staging equipment and materials and storing fuel, disruption of local vehicle traffic, and short-duration restrictions in river traffic.

*Secondary and Cumulative Impacts.* The proposed project could result in beneficial and adverse secondary impacts that result from the construction of a bridge over the Wood River. The proposed project also may contribute to cumulative impacts with additional projects that are planned. Government projects planned for the near future include the following: (see Appendix A, sec. 4.2)

- Bulk Fuel Tank Project
- Floatplane Dock Area and Access Road
- New Landfill and Associated Road on the North Side
- Mile 8 to 23 Hard Surfacing of the Dillingham-Aleknagik Road

- Lake Aleknagik State Recreation Site (completed)

Beneficial secondary and cumulative impacts associated with the proposed project include the following:

- Enhanced community cohesion because of improved access between the south and north shores
- Enhanced public access to health care
- Enhanced local economy and economic opportunities through consolidation of government services/facilities, expansion of employment opportunities, and increased opportunities for development of new businesses on the north shore
- Decrease in the cost of supplies to north shore residents
- Decrease in the potential for fuel or other contaminant spills in Lake Aleknagik and the Wood River
- Decreased pressure on parking at the Lake Aleknagik State Recreation Site because North Shore residents would no longer need to park there

Some adverse secondary and cumulative impacts may also occur:

- Slightly increased automobile and truck traffic and associated noise and dust levels, which would be a minor negative impact to the quality of life and may also result in a minor disturbance to wildlife habitat and wildlife
- Possible increase in trespassing and vandalism on the north shore
- Road access may slightly diminish the appeal of the Mission Lodge, which is currently accessible only by boat or aircraft

- Decline in Moody's Marina's north shore winter fuel business, because north shore residents would be able to drive to Dillingham for fuel and/or the Dillingham fuel truck could deliver fuel to the north shore
- Growth and development may occur more quickly with the construction of a bridge over the Wood River
- Increased competition for subsistence resources in areas traditionally used by north shore residents if south shore and Dillingham residents cross the bridge to access subsistence resources

The following federal and state permits, approvals, or clearances will be required for this project: (1) USACE Section 404/10 Permit for work in waters of the U.S., including wetlands; (2) U.S. Coast Guard Section 9 Permit for work over navigable waters; (3) ADNR OHMP Title 41 Permit for work in waters with anadromous or resident fish; (4) Alaska Department of Environmental Conservation (ADEC) Section 401 Water Quality Certification; (5) ADNR Office of Project Management and Permitting Coastal Consistency Determination; (6) U.S. Environmental Protection Agency National Pollutant Discharge Elimination System Construction General Permit, and (7) ADNR Right-of-Way Permit for placement of structures on navigable waters that are also state tide and submerged lands.

The project would be funded by the FHWA (91 percent), with the remaining 9 percent coming from the State of Alaska. Recently, the State Transportation Improvement Program has moved the project to a future earmarked project; therefore, additional project funding for final design, right-of-way purchasing, and construction is not currently programmed.

The EA was approved in December 2003 for public distribution. The public comment period extended 35 days beginning December 19, 2003 and ending January 23, 2004. During this time the Department held one public hearing in Aleknagik and one in Anchorage. Agency and public comments are summarized in Section 6.0 *Comments and Coordination*. The Department evaluated the formal comments received in conjunction environmental consequences, required project permits and approvals, and construction costs. Based upon these factors, the Department selected access road Alignment 1 on the south shore, access road Option C on the north shore,

and Bridge Type A (three-span steel bridge) over the Wood River as its preferred alternative. Because the EA distributed in December 2003 did not identify the preferred alternative, the Department published a revised EA identifying the preferred alternative in April 2004. A public notice of the availability of the revised EA with the option for a public hearing upon request was published in May 2004. No requests for a public hearing were received and no comments were submitted.



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Environmental Assessment  
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- A Secondary and Cumulative Impacts Study
- B City of Aleknagik Resolutions
- C USACE 404/NEPA Merger Agreement
- D Scoping Summary Report
- E Agency and Public Comments and Responses to Comments from Review of EA
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- L Correspondence
- M Application for Multiple Agency Authorizations for Use in Alaska



## LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADGC	Alaska Department of Governmental Coordination
ADNR	Alaska Department of Natural Resources
ADT	Average daily traffic
ANL	Aleknagik Natives Limited
BBCMP	Bristol Bay Coastal Management Program
BMPs	Best Management Practices
cm	Centimeter
CRSA	Coastal Resource Service Area
dBA	decibels, adjusted for human hearing
Department	Alaska Department of Transportation and Public Facilities
EA	Environmental Assessment
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESCP	Erosion and Sediment Control Plan
FHWA	Federal Highway Administration
HUD	Housing and Urban Development
km	Kilometers
msl	Mean sea level
NAC	Noise abatement criteria
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OHMP	Office of Habitat Management and Permitting
OPMP	Office of Project Management and Permitting
PL	Public Law
PND	Peratrovich, Nottingham, & Drage, Inc.
ROW	Right-of-way
SHPO	State Historic Preservation Office
SRS	State Recreation Site
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service



## 1.0 PURPOSE AND NEED

The City of Aleknagik is at the southeast end of Lake Aleknagik and is separated by the waters of the lake at a narrowing just upstream from the Wood River (Figure 1). The city is on the north and south shores of the lake, separated by approximately 213 meters (700 feet) of water. Storms, rough water, and fog can create dangerous crossing conditions for residents during ice-free times, and, in winter, unsafe ice presents additional safety concerns.

Separation of the city requires that villagers cross the water in open skiffs or on snowmobiles to reach schools and local services and to access the road to Dillingham. Two residents have drowned in the past several years while crossing the lake at this location, and records dating back to 1960 detail an additional nine deaths from drowning here (Smith, 1999). More recently, two people drowned in January 2003 when they fell through the ice while trying to cross the river (Nishimura, 2003). Separation of the village also has resulted in the duplication of government services and fragmentation of the sense of community. The construction of a two-lane bridge is the City of Aleknagik's number one project priority.

The following benefits are expected to be realized by providing a road link between the north and south shores of Aleknagik:

- *Public safety would be enhanced.* A road connection between the north and south shores of the village would eliminate the well-documented danger associated with crossing the lake during rough water, fog, or poor ice conditions. The Aleknagik school is on the north shore, which results in children living on the south shore crossing the lake in open skiffs or on snowmobiles to attend primary school and school functions. Conversely, students on the north shore attending high school in Dillingham must also cross the lake to catch buses or rides to Dillingham from the south shore. The school district currently operates a 14-foot skiff to ferry schoolchildren. In the past, the district tried unsuccessfully to maintain a hovercraft to carry children across the lake. In the event of any type of disaster (such as a fire or plane crash), a more convenient and reliable road connection with Dillingham would greatly facilitate evacuation and expedite emergency assistance.

- *Access to secondary health care would be improved.* Currently, a village health clinic is located on each shore to treat patients. However, persons needing additional treatment must travel to the regional hospital in Dillingham. For residents on the north shore, this requires crossing the lake, which can be an unpleasant, difficult trip for elderly, handicapped, sick or injured individuals. For serious injuries or health emergencies, a road crossing would be especially valuable.
- *The local economy and economic opportunities would be enhanced.* Duplicated City services such as the health clinics, solid and liquid waste disposal facilities, fire protection, and maintenance equipment could be consolidated, potentially resulting in savings to the City. Road access to the north shore would support planned regional, local, and recreational development as described in detail in Appendix A, Secondary and Cumulative Impacts Study. Because Aleknagik is the “jumping-off” point to Wood-Tikchik State Park, the largest state park in Alaska, local residents and the City of Aleknagik are looking forward to realizing tourist-based economic opportunities. These opportunities include creating bed and breakfasts, guiding for hunting and fishing trips, and developing an interpretive center. A road connection to freight and passenger services in Dillingham would also lower costs for businesses operating or wishing to operate on the north shore of Aleknagik. Finally, few jobs exist in Aleknagik, and a convenient and reliable road connection to the Dillingham-Aleknagik Road would make it easier for north shore residents to take advantage of employment opportunities in Dillingham.
- *Community cohesion would be improved.* Easy and convenient access between the two portions of Aleknagik would eliminate the fragmentation between the north and south shores of the community. Currently, the north shore is the business district, housing the post office, Village Public Safety Office, fire department, a health clinic, a landfill, social services office, and the airport, port, and fuel service. Several families on the south shore prefer to drive the 32 kilometers (km) (20 miles) to the Dillingham post office to receive their mail rather than wrestle boxes and packages across the lake in skiffs or on snowmobiles. On the south shore are the Aleknagik Traditional Council Office, a health clinic, the City maintenance shop, a landfill, and a store. A road connection between these separate portions of the city would improve community cohesion.



Additional considerations about the project include measures undertaken by the City to promote a road crossing, including a resolution from the City offering to maintain a bridge and bridge approaches and a commitment to provide the land upon which access roads may be located (Appendix B). Also, approximately 10 potential Aleknagik school students living on the south shore take the school bus to Dillingham to avoid the daily lake crossings. This represents one-fifth of the potential Aleknagik school population. Parents of these children have indicated they would send their children to the school in Aleknagik if convenient and reliable transportation were available, thereby keeping more Aleknagik students in the community for schooling.



## 2.0 INTRODUCTION

In 1999, the City of Aleknagik estimated its population to be 260 year-round residents and 108 seasonal residents (City of Aleknagik, 1999). Approximately two-thirds of the population lives on the north shore and one-third lives on the south shore.

In 1994, the City of Aleknagik initiated a study to assess the feasibility of linking the south shore and the north shore of the community. The resulting report, *Aleknagik Bridge Study, Preliminary Design Concepts and Cost Estimates*, was prepared by Peratrovich, Nottingham, & Drage, Inc. (PND) in January 1995. It provided preliminary design concepts and cost estimates for two bridge sites: Site A and Site B.

Site A is at Mosquito Point, which is at the end of the Dillingham-Aleknagik Road. It is also the location of the Alaska Department of Natural Resources (ADNR) Lake Aleknagik State Recreation Site (SRS). A floating bridge that could be removed by local residents each summer was proposed for this location. Site B is about 1.6 km (1 mile) east of the community, downstream on the Wood River. This bridge location would require access road construction on the north and south shores to join the existing road network.

The Alaska Department of Transportation and Public Facilities (Department) received federal funding to prepare an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) process and began preliminary design of the project in 1998. The purpose of this EA is to document the project elements and assess the environmental impacts to determine whether project impacts are significant pursuant to Council on Environmental Quality Part 1508.27. If the impacts are found not to be significant, the Federal Highway Administration (FHWA) will issue a Finding of No Significant Impact. If there are significant impacts, an Environmental Impact Statement will be prepared. Significant environmental impacts are identified with the assistance of public and resource agencies that have subject matter expertise or jurisdiction by law.

Because this project would affect wetlands, the project was scoped pursuant to the *Interagency Working Agreement to Integrate Section 404 and Related Permit Requirements into the National Environmental Policy Act* (finalized June 11, 1997), referred to as the U.S. Army Corps of

Engineers (USACE) 404/NEPA Merger Agreement (Appendix C). The Merger process is described in detail in Section 5.0, Permits and Approvals.

The Department held public meetings in Aleknagik in September 1998 and June 1999 and in Anchorage in June 1999. A Scoping Summary Report was issued by the Department in January 1999 (Appendix D). No new alternatives were identified; however, a number of environmental issues were raised. Those issues are addressed in this document. Following the June 1999 meetings, the Department identified Site B, the Wood River Bridge site, as the preferred bridge crossing location.

In December 2003, the Department released the EA for a 35-day public/agency review and comment period. During this time the Department held one public hearing in Aleknagik and one in Anchorage to obtain input on the project alternatives presented in the EA to help determine the preferred access road and bridge type alternatives. Public comments received and responses to comments are included in Appendix E. The Department's preferred access road and bridge type alternatives are presented in Section 3.1.3.

The Statewide Transportation Improvement Program recently moved the project to a future earmarked project; therefore, additional project funding for final design, right-of-way (ROW) purchasing, and construction is not currently programmed.

## **3.0 ALTERNATIVES**

The Department has considered a number of bridge locations, access road alignments, and bridge types to provide access between the portions of the City of Aleknagik on the north and south sides of the lake. The sections below describe the alternatives meriting further consideration; which are addressed in this EA, the Department's preferred bridge type and access road alignments, and those alternatives previously considered but eliminated from further consideration. The merger agencies have concurred on the range of alternatives and the bridge location. The Department's preferred bridge type and access road alternatives are presented in Section 3.1.3, below.

### **3.1 Alternatives Meriting Further Consideration**

#### **3.1.1 No-Build Alternative**

Under the No-Build alternative, the existing situation, with no road connection between the City of Aleknagik on the north and south sides of the lake, would continue. Road maintenance on the existing road system also would continue.

#### **3.1.2 Bridge over Wood River**

The preferred alternative bridge location is over the Wood River approximately 1.6 km (1 mile) east of the community, downstream on the Wood River where it narrows to approximately 90 meters (300 feet) in width (Site B in Figure 2). This bridge crossing site is preferred because it is one of the narrowest reaches of the upper Wood River and the bedrock and soils at the site provide the best foundation conditions in that region of the river (PND, 1995). This site also has fewer environmental, social, and economic impacts to the community.

##### **3.1.2.1 Bridge Structure Types**

Two bridge structure types are under consideration. Both types would be 135 meters (442 feet) long and include two 3-meter (10-foot)-wide traffic lanes with 1.5-meter (5-foot) shoulders to accommodate pedestrians and bicycles. Either bridge would be constructed to allow a minimum vertical clearance of 11 meters (36 feet).

Bridge Type A has three spans and would require two piers with four supporting piles for each pier in the Wood River (Figure 3). Bridge Type B is a steel clear-span bridge that would not require supporting piles in the river (Figure 4).

The construction of either bridge type would be accomplished by the construction of a 6-meter (20-foot)-wide temporary work bridge parallel to the permanent bridge location or by use of a barge. The actual method of bridge construction would depend on the conditions of the site and established construction windows and would be determined by the contractor during the final design and permitting stage of the project. The temporary work bridge would have as many as eight spans and would require the placement of as many as seven piers (with two to three piles per pier) in the Wood River. One span at the center of the temporary work bridge would be removable to allow vessel passage. The temporary work bridge and pilings would be removed once the permanent bridge is constructed. Figure 5 shows a schematic of the bridge construction sequence using the temporary work bridge, with Bridge Type A as an example. Table 1 provides a comparison of costs for alternative bridge structure types and access road route alignments.

### **3.1.2.2 Bridge Access Road Alignments**

The Wood River bridge alternatives would include a gravel access road on the south shore to connect the bridge with the Dillingham-Aleknagik Road and a similar access road on the north shore that would connect the bridge to the community. These access roads would include a combination of improvements to existing gravel roads and construction of new road. The proposed bridge access road would be classified as a Rural Minor Collector and would have a design speed of 60 kilometers per hour (approximately 35 miles per hour). The road would be 9 meters (30 feet) wide, with two 3-meter (10-foot) traffic lanes and 1.5-meter (5-foot) shoulders.

Figure 6 shows a typical section of the access road. It would include drainage ditches at appropriate locations. The project also would include installation of new culverts and repair of existing culverts where necessary. A Tier 1 stream simulation culvert or bottomless culvert designed in accordance with the Memorandum of Agreement between the Department and the Alaska Department of Fish and Game (ADF&G) (Department, 2001) or a clear-span bridge would be used at Mission Creek on the north shore. At this time, the project is in a conceptual

**Table 1. Aleknagik Wood River Bridge Alternatives Cost Comparison**

	Site A	Alignments and Options at Site B		Alignment Around Chythlook Subdivision		Alignment Around Existing Subdivisions	
	5 Span	3 Span Preferred Alternative	Clear Span	3 Span	Clear Span	3 Span	Clear Span
Bridge	\$ 11,723,652 <sup>a</sup>	\$ 6,157,827	\$ 9,123,013	\$ 6,157,827	\$ 9,123,013	\$ 6,157,827	\$ 9,123,013
Access roads	\$ 1,395,000	\$ 5,500,151 <sup>b</sup>	\$ 5,500,151 <sup>b</sup>	\$ 6,673,053 <sup>b</sup>	\$ 6,673,053 <sup>b</sup>	\$ 8,182,789 <sup>b</sup>	\$ 8,182,789 <sup>b</sup>
Right-of-way	\$ 3,285,000	\$ 988,500	\$ 988,500	\$ 998,220	\$ 998,220	\$ 845,455	\$ 845,455
Utilities	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
Total	\$ 16,453,652	\$ 12,696,477	\$ 15,661,664	\$ 13,879,100	\$ 16,844,286	\$ 15,236,071	\$ 18,201,257
Rounded	\$ 16,500,000	\$ 12,700,000	\$ 15,700,000	\$ 13,900,000	\$ 16,800,000	\$ 15,200,000	\$ 18,200,000

a. Includes costs for landing area modifications

b. Includes costs for stormwater treatment and erosion control measures along access roads and at bridge approaches

Source: Department Calculations

design phase and site-specific geotechnical information needed to develop specific designs for project facilities has yet to be obtained. Specific designs for project facilities, including the crossing structure needed for Mission Creek, will be developed for the selected alternative during final design. The appropriate crossing structure for Mission Creek will depend on the conditions at the stream crossing location and will be determined by the Department in coordination with the ADNR Office of Habitat Management and Permitting (OHMP) during final design and permitting.

Two access road alignments on the south shore (Alignments 1 and 2) and three options on the north shore (Options A, B, and C) are being evaluated. These alignments range from about 1,190 meters to 2,580 meters (3,100 to 8,460 feet) in length. Figure 2 shows the proposed bridge location and the access road alignment options under consideration.

### *South Shore Alignments*

On the south shore, the access road to the bridge site would begin at the intersection of the Dillingham-Aleknagik Road and Suravak (Huckleberry) Road and extend along Suravak Road through the Atsat Housing and Urban Development (HUD) Subdivision. At the point where the existing road turns sharply to the southeast toward the Chythlook and Scenic View subdivisions, two alignments are being evaluated, as depicted in Figure 2.

#### *Alignment 1*

Alignment 1 generally follows the existing road, but smoothes several sharp curves. Alignment 1 converges with Alignment 2 in the vicinity of an existing materials site and follows Suravak Road until it ends approximately 180 meters (600 feet) east of the existing materials site. The proposed road then extends to the east approximately 610 meters (2,000 feet) to the proposed bridge site. Alignment 1 is approximately 2,580 meters (8,460 feet) long.

#### *Alignment 2*

Alignment 2 extends straight along an existing utility corridor. Alignment 2 converges with Alignment 1 in the vicinity of an existing materials site and follows Suravak Road until it ends approximately 180 meters (600 feet) east of the existing materials site. The proposed road then



extends to the east approximately 610 meters (2,000 feet) to the proposed bridge site. Alignment 2 is approximately 2,490 meters (8,160 feet) long.

### *North Shore Options*

From the north shore of the Wood River, the access road would make a wide turn to the west from the bridge site through undeveloped land for approximately 610 meters (2,000 feet). The proposed road would then join an existing unnamed road approximately 50 meters (165 feet) east of the old dump site. The access road would then travel east across Mission Creek to the intersection with Wood River Way. A Tier 1 stream simulation culvert, bottomless culvert, or clear-span bridge would be installed at the Mission Creek crossing. From the intersection of the unnamed road and Wood River Way, three alignment options are proposed. The options are described in the following subsections and depicted in Figure 2.

#### Option A

Option A continues west along the unnamed road bordering the Wood River Heights Subdivision for approximately 410 meters (1,600 feet). West of this point, the unnamed road becomes a path used by all-terrain vehicles. Option A would follow this path for approximately 270 meters (900 feet) and terminate at Peter Krause Sr. Drive. Option A is approximately 1,530 meters (5,010 feet) long.

#### Option B

Option B follows Wood River Way north, then turns west on Wasillie Etuckmelra Sr. Lane for approximately 245 meters (800 feet), terminating at George H. Ilutsik Loop Road. Option B is approximately 1,190 meters (3,100 feet) long.

#### Option C

Option C also follows Wood River Way north, curving to the northwest after approximately 150 meters (500 feet), traversing through a portion of the Sturneq HUD Subdivision, and finally joining Peter Krause Sr. Drive at its intersection with George H. Ilutsik Loop Road. Option C is approximately 1,420 meters (4,670 feet) long.

### **3.1.3 Preferred Alternative**

The Department received numerous agency and public comments on the EA published for review in December 2003 (Appendix E). All comments received during this 35-day review period were considered to help the Department select the preferred bridge type and access road alignments. The Department's preferred alternative is Alignment 1 on the south shore, Option C on the north shore, and Bridge Type A (three-span steel bridge) over the Wood River. These selections for the preferred alternative were chosen for the following reasons.

- Access road Alignment 1 on the south shore has surface area wetlands impacts similar to those of Alignment 2, but has lesser impacts to wetland functions and values than Alignment 2. Alignment 1 also takes better advantage of existing roads, minimizing impacts to undisturbed wildlife habitat.
- Access road Option C on the north shore has lesser wetlands impacts than Option A, as well as lesser social impacts than both Options A and B because the road is not routed directly through the Wood River Heights or Sturneq subdivisions.
- Bridge Type A (three-span steel bridge) costs substantially less to build than Bridge Type B (clear-span bridge). Additionally, the primary concerns expressed about impacts to fish and fish habitat can be mitigated by construction timing windows or by barge-mounted construction with Bridge Type A.

## **3.2 Alternatives Considered but Eliminated**

The sections below discuss the alternatives that were investigated but eliminated from further consideration for the reasons stated. Alternative bridge and road route alternatives that were considered but eliminated are shown in Figure 7.

### **3.2.1 Bridge over Wood River at the Mission Lodge**

This alternative involved a bridge crossing the Wood River in the vicinity of the Mission Lodge, located on the north shore (Figure 2). Although this alternative would satisfy the purpose and need for the project, construction of a bridge at this location was eliminated from further

consideration because of potential economic and cultural impacts. Increased access to the Mission Lodge would detract from the experience of its customers, likely resulting in a significant reduction of the lodge's income base. Additionally, Alaska Heritage Survey Files document cultural resource sites on the north and south shores of this location, which could be impacted by earthwork associated with bridge construction (Appendix F).

### **3.2.2 Bridge over Lake Aleknagik at Site A**

This alternative initially involved a floating bridge at Mosquito Point, a location selected by the City, where Lake Aleknagik narrows in width. This location, which is referred to as Site A, is at the end of the Dillingham-Aleknagik Road and is the location of the ADNR Lake Aleknagik SRS (Figure 2).

The floating bridge would have been a lightweight, pontoon-supported removable structure that would have been used by pedestrians, all-terrain vehicles, snowmobiles, and possibly automobiles. The bridge would have been 2.5 meters (8 feet) wide and built in sections that would span the pontoons located at 12-meter (40-foot) intervals. It would have been installed each fall and removed by local residents each spring or summer. For vessels to pass the bridge, the entire structure would have to be removed (PND, 1995).

A removable, floating bridge was not viewed as practical. The risk of damage or loss for a floating bridge is moderate to high, mainly as a result of ice pans colliding with the pontoons. The lightweight bridge would have been less durable than a more permanent structure and could not be guaranteed to withstand all potential forces.

The other bridge structure considered at this location was a steel bridge with five spans. The structure would be required to maintain the existing hydraulic opening width of the lake plus a length back from each bank for spill-through abutments. A minimum bridge length of approximately 260 meters (850 feet) would have been required for this alignment. The bridge would have required two 3-meter (10-foot)-wide traffic lanes with 1.5-meter (5-foot) shoulders.

This alternative, with either type of bridge structure, was eliminated from further consideration in the EA based on the impacts identified below:

- The cost would be substantially more expensive for bridge construction and ROW acquisition (Table 1).
- A bridge across the lake at this location would hinder floatplane traffic on the lake.
- A floating bridge at this location would interfere with boating traffic between the lake and the Wood River until the bridge was removed for the summer. Placement and removal each year would require a work crew, and a storage facility would be necessary to protect bridge components. Operational funding would need to be secured.
- A five-span bridge having the necessary clearance above water would have substantial impacts on existing land uses at the touchdown points on the north and south shores because of the large area necessary to ramp up to the required bridge height.
- A bridge and approach roads at this location would adversely affect the private airstrip on the south shore and several residences on both shores. Adverse impacts to a local business, Moody's Marina, would be likely as the result of property acquisition or relocation. ROW acquisition costs would be substantial.
- A bridge at this location would adversely affect the planned bulk fuel tank project on the north shore, which is being funded through the Denali Commission, as discussed in Appendix A, Secondary and Cumulative Impacts Study. (This project involves a consolidated bulk tank farm, including a combined bulk fuel storage facility for the City, Moody's Marina, and the school.)
- A bridge at this location may have an adverse impact on the newly constructed ADNR Lake Aleknagik SRS (boat launch and day use area) on the south shore as the result of access problems and/or additional property acquisition requirements.
- A bridge at this location could potentially affect several cultural resource sites on both the north and south shores documented in the Alaska Heritage Resource Survey files.

- A bridge at this location would be more likely to encounter petrochemical/hazardous materials contamination associated with the industrial or commercial activities in the vicinity of the private airstrip on the south shore and Moody's Marina on the north shore.

### **3.2.3 Hovercraft Alternative**

This alternative was previously implemented by the City of Aleknagik, which used a 13-passenger hovercraft intermittently in the early 1980s to transport students from the south shore to school on the north shore. The hovercraft was eventually sold for several reasons:

- It was too expensive to operate and maintain.
- There were no qualified people in the region to perform maintenance.
- It did not have enough power.
- Service was unreliable.

Because of its unreliability, this alternative would not alleviate the existing concerns about public safety, limited access to secondary health care, limited local economic opportunities, and lack of community cohesion.

### **3.2.4 Alternative Access Road Routes**

Residents of the community have suggested use of alternative routes to access the proposed bridge crossing location, both on the north and south shores, to avoid routing traffic through existing subdivisions. Two specific alternative access routes, one on the south shore and one on the north shore, were identified. These alternative access routes were eliminated for the following reasons:

- The routes would not use existing roads through subdivisions and therefore would be considerably longer than the proposed roads associated with the bridge location.
- The alternatives would involve substantially more environmental impact to undisturbed vegetated areas.

- They would open up more lands for future development or subsistence use.
- The costs associated with construction of the longer access roads would be considerably higher.

Another route suggested by a south shore resident makes partial use of an existing road but would also involve substantially more environmental impact to undisturbed vegetated areas.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

The following sections discuss the probable environmental impacts associated with the build alternatives and the No-Build alternative. When there are different impacts associated with the alternative alignment or bridge structure alternatives, those impacts are discussed. Project-specific studies conducted include a Secondary and Cumulative Impacts Study (Appendix A), a Cultural Resources Surveys (Appendix F), a Wetlands Delineation (Appendix G), a Phase I Site Investigation (Appendix H), a land appraisal (Appendix I), a Preliminary Hydraulics and Hydrology Report (Appendix J), and Preliminary Essential Fish Habitat Assessment (Appendix K).

### **4.1 Farmland**

There are no prime or unique agricultural lands, as defined in the Farmlands Protection Policy Act of 1981 (U.S. Code, Title 7, Sections 4201 to 4209 [7 USC 4201-4209]; Public Law 97-98 [PL 97-98]), currently designated in the State of Alaska. The Farmlands Policy Protection Act is not applicable to this project, and no formal consultation with the Natural Resource Conservation Service is required.

### **4.2 Land Use**

The Bristol Bay Area Plan for State lands establishes guidelines for construction of inter-community roads to support local transportation needs where (1) communities are close together, (2) alternate transportation options are more costly and less dependable, and (3) there is strong local support. This project meets all three criteria. The City of Aleknagik has passed resolutions in support of the project that include an offer to maintain a bridge and bridge approaches and a commitment to provide land upon which the access road may be built (Appendix B). Aleknagik Natives Limited (ANL) supports the project because it would make it easier to develop some of its land on the north shore (Nishimura, 2000).

The project is consistent with the Bristol Bay Coastal Management Program (BBCMP) policies (Bristol Bay Coastal Resource Service Area Board, 1992). A coastal consistency determination from the Bristol Bay Coastal Resources Service Area (CRSA) will be requested concurrently with distribution of this document.

Alignments 1 and 2 on the south shore and Options A and B on the north shore would all route traffic through existing subdivisions. Alignments 1 and 2 would affect land use similarly because they are both routed through Atsat and Chythlook subdivisions. Increased traffic through the Wood River Heights Subdivision could decrease the desirability of the land to seasonal residents who wish to own property that is inaccessible by road. Option A would have a greater impact on the Wood River Heights Subdivision than Options B or C because the existing unnamed road is currently a dead-end road with little traffic. The Sturneq subdivision is the most developed subdivision in Aleknagik, and increased traffic through this neighborhood with Option B could affect current land-use patterns. However, existing roads currently route traffic through this subdivision. Option C would route traffic through a currently undeveloped section of the Sturneq Subdivision, which could affect development of the adjacent lots (Figure 2).

The preferred alternative, Alignment 1 on the south shore and Option C on the north shore, minimizes impacts to existing land use.

The No-Build alternative would result in no immediate change to land use or development patterns. Continued development in existing subdivisions and at a possible new ANL subdivision on the north shore is expected to continue even without the project, but at a slower pace.

### **4.3 Social and Environmental Justice**

The project would benefit Aleknagik residents on both the north and south shores of Lake Aleknagik by providing improved access to family, friends, and neighbors. Transporting students between the north and south shores would be more reliable, economical, and convenient. South shore parents who send their children to Dillingham for school rather than cross the lake have indicated they would send their children to the school in Aleknagik if convenient and reliable transportation were available (Appendix D – Scoping Summary Report). Thus, more convenient and reliable access provided by the proposed project would enhance community cohesion.

Access to secondary health care would be improved for people needing medical treatment at the regional hospital in Dillingham.



The project would result in increased automobile and truck traffic on both the south and north shores. Residents who live along the road in the Atsat, Chythlook, and Scenic View subdivisions on the south shore and the Sturneq and Wood River Heights subdivisions on the north shore would experience increased traffic (and associated noise and dust), but impacts would be minor because of the low traffic volumes. Based on data from the Dillingham-Aleknagik Road, traffic levels are projected to be 585 vehicles per day in design year 2022, compared with 200 in 2001. Alternatives A and B on the south shore would have similar impacts. On the north shore, Options A and B would cause more impacts than Option C by routing traffic through the Wood River Heights and Sturneq subdivisions.

Build alternatives requiring construction in wetlands (Section 4.12) would affect the sociological and/or cultural values identified for wetlands in the Aleknagik area. Local wetland areas support passive recreational activities such as berry-picking, scenic viewing, ice-skating, and sport fishing.

The preferred alternative would benefit Aleknagik residents as described above and would minimize social impacts with Alignment 1 and Option C by making use of existing roads where possible, thus reducing impacts to wetlands, and by routing Option C through currently undeveloped sections of the Sturneq Subdivision, which reduces traffic impacts on current homeowners in the subdivision.

The No-Build alternative would result in little or no change in the current social conditions or trends. Residents and visitors would continue to experience the existing inconvenience of travel between north and south shores for visiting, school activities, meeting attendance, and participation in other events. The quality of life of residents living adjacent to the road corridors would not be substantially affected by increased traffic, noise, and dust.

This project has been reviewed and is in compliance with Executive Order 12898. Executive Order 12898 requires federal agencies, to the greatest extent practicable and permitted by law, and consistent with the principles 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 effects, including interrelated social and economic effects, of its programs, policies, and activities on minority

populations and low-income populations in the United States. The intent of Executive Order 12898 is only to improve the internal management of the executive branch. The order does not provide for judicial enforcement.

No disproportionately high or adverse effects on minority or low income populations, as outlined in Executive Order 12898, are expected to result from this 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. Benefits from the project are expected to include a small increase in opportunity for employment by providing road access to Dillingham, particularly for residents on the north shore. It may also slightly expand local business opportunities and provide easier logistics for social and school interactions within the community.

This project has received support from local, regional, and Native organizations, as well as from Aleknagik residents. Written support for the project is provided in the Scoping Summary Report (Appendix D).

#### **4.4 Relocation**

The Department would need to acquire the ROW necessary for the build alternatives. A copy of the appraisal report can be found in Appendix I. The project would not require the relocation of any commercial structures. However, acquisition or relocation of residences would potentially be required for all alternative alignments as shown in Figure 2 and noted below:

- Option A – Possibly one residence
- Options B and C – One residence (same residential structure for both options)
- Alignments 1 and 2 – One residence (same residential structure for both alignments)

Where possible, minor rerouting adjustments to the access road alignments would be evaluated during the final design to avoid relocation. However, if these residences must be moved, there are many empty lots in existing subdivisions in Aleknagik. The acquisition and relocation program would be conducted in accordance with the Uniform Relocation Assistance and Real

Property Acquisition Policies act of 1970 as amended October 1, 2001. Relocation resources are available to all residential and business relocatees without discrimination.

The preferred alternative would potentially require the relocation of two residences: one under Alignment 1 and one under Option C. Avoiding the residence under Option C may not be possible; however, as stated above, minor routing adjustments to avoid relocation of the residence under Alignment 1 would be evaluated during final design.

The No-Build alternative would not involve any changes to the existing road ROW or acquisition of any residential or commercial structures.

#### **4.5 Joint Development**

Joint development refers to projects conducted simultaneously to maximize compatibility and economic efficiencies. Mutually developed projects enhance social, economic, environmental, and visual values. No substantive projects are planned in conjunction with the proposed action.

#### **4.6 Economic**

The project could provide improved economic development and opportunity for area residents. The project would benefit residents on both sides of Lake Aleknagik by providing improved access for residents on the north shore to commute to employment in Dillingham and by providing improved access for south shore residents to reach school and city jobs on the north shore. Property values and opportunities for new businesses on the north shore could increase because of the improved access.

In addition, the project could reduce the cost of transporting fuel and building supplies by allowing direct road access to the north shore and thus eliminating the double and triple handling of these items (i.e., road to south shore, boat to north shore, truck to destination). Currently it costs between \$200 and \$350 to deliver building supplies from Dillingham to the north shore via truck from Dillingham and then barge to the north shore (Stephen R. Braund & Associates, 2000). The Dillingham fuel truck could drive to the north shore and thus eliminate the need to transport fuel by boat, barge, or snowmobile. The primary saving associated with heating fuel

would be the convenience of having the fuel delivered to the residence instead of having to haul it from Moody's Marina or across the lake.

Temporary economic benefits during construction of the project would include increased sales in local stores from outside workers who stay in Aleknagik during construction and increased boarding income for the community. Local persons working on the construction project would derive a temporary benefit to personal income.

The elimination of duplicate services and consolidation of these services (e.g., health clinics, solid and liquid waste disposal facilities, fire protection, and maintenance equipment) may result in financial savings to the local government. Currently there are two maintenance shops, two fire trucks, and two health clinics – one serving each shore. The consolidation of services should not result in job losses, because the two health aides and two maintenance operators would likely be retained, but only one facility would be required.

The preferred alternative would benefit Aleknagik residents as described above.

Under the No-Build alternative, there would be no substantial change in local development, tax revenues, federal expenditures, and employment opportunities.

#### **4.7 Bicycle/Pedestrian Considerations**

There is currently no bicycle or pedestrian traffic between the north and south shores of Aleknagik because there is no bridge. Current use of existing narrow gravel roads on the north and south shores is a safety concern for bicyclists and pedestrians. Opportunities for pedestrian and bicycle travel would be improved with the construction of the proposed project, although a separated bike path and/or pedestrian sidewalk is not proposed. The access roads and bridge would have a 1.5-meter (5-foot)-wide shoulder on each side to accommodate bicycle or pedestrian traffic.

The Department will include a footpath to the river bank as part of the project to prevent long-term erosion and water quality problems from pedestrians climbing down the banks to get to the river. The gravel footpath would be 3 meters (10 feet) wide and begin at the access road near the bridge site, descending to the top of the steep portion of the river bank. The path at this point

would become a series of timber steps down to the ordinary high water of the river. The timber steps on the steeper portions of the bank (approximately 1.8 horizontal:1 vertical) would be embedded into the bank and anchored with rebar, resulting in a narrow strip between the timbers (ranging from 15 to 60 centimeters [cm] [6 inches to 2 feet]) that would be backfilled with the soils from the embedment excavation. This narrow strip would be hand seeded with a grass mix to stabilize the soil and prevent erosion. If appropriate, a geo-composite material will be used to provide slope stabilization, prevent erosion, and enhance vegetation growth; however, the footpath is not expected to generate heavy use that would lead to sedimentation and erosion. The proposed design should minimize any erosion and sedimentation concerns associated with the light foot-traffic anticipated for the footpath. A schematic of the footpath is shown in Figure 8.

Traffic volumes on the access roads would increase over current levels, which may increase safety concerns for bicyclists and pedestrians. However, safety would be improved with the wider roads and shoulders on each side to accommodate bicycle or pedestrian traffic.

Alignments 1 and 2 are similar with regard to beneficial impacts on bicyclists and pedestrians. On the north shore, Option B could have an adverse impact, because the project ends where the access road would route traffic into the Sturneq Subdivision.

The preferred alternative would benefit bicyclists and pedestrians as described above.

The No-Build alternative would not change the existing situation. There would continue to be no bicycle or pedestrian traffic between the north and south shores of Aleknagik because of the lack of a bridge.

#### **4.8 Air Quality**

The proposed project is situated within an air quality attainment area, and the air quality meets or exceeds the U.S. Environmental Protection Agency (EPA) criteria for “healthy” air conditions. Current average daily traffic (ADT) is 200 vehicles on the Dillingham-Aleknagik Road near the current ADNR boat launch. Traffic projections indicate that the ADT will increase to 585 vehicles per day in the design year (2022). Traffic on the bridge and access roads would be substantially less because the destination of much of the traffic along the Dillingham-Aleknagik

Road is the ADNR boat launch. The air quality impacts associated with vehicular emissions and airborne particulates (dust) are expected to be negligible because of the low traffic volumes. Temporary impacts associated with dust generated during construction would be controlled through watering.

The preferred alternative would result in the same temporary air quality impacts as described above.

The No-Build alternative would result in no change to the existing air quality in the project area.

#### **4.9 Noise**

Noise impacts from a roadway occur when predicted and/or actual noise levels approach or exceed the FHWA noise abatement criteria (NAC) or substantially exceed existing noise levels. The Department considers a predicted noise level of 2 decibels (dBA) within the NAC as sufficient to satisfy the condition of “approach” (Department, 1996). The FHWA NAC are 72 dBA for commercial receivers and 67 dBA for residential receivers (FHWA, 1995). The Department considers an increase of 10 to 15 dBA to be a substantial increase in noise levels and to be the threshold for noise abatement. No cluster or high-density residences or sensitive noise receivers (churches, schools, or hospitals) are located along the project corridor. However, several residences abut the proposed road alignments on both the north and south shores.

The level of highway traffic noise depends on the volume of traffic, the speed of traffic, and the number of trucks in the flow of the traffic. Generally, heavier traffic volumes, higher speeds, and greater numbers of trucks increase the loudness of traffic noise. Baseline noise levels are estimated at 40 dBA, based on measurements taken in similarly forested areas. The noise level increase resulting from bridge installation was estimated using the nomograph model. Projected noise levels for the design year are 40 dBA, based on 585 cars per day traveling 60 km per hour (35 miles per hour). The 585 cars per day used to estimate projected noise levels are based on ADT projections for the Dillingham-Aleknagik Road. Traffic on the bridge and access roads would be substantially less because the destination of much of the traffic along the Dillingham-Aleknagik Road is the ADNR boat launch. Although residents adjacent to the access roads may experience a slight increase in traffic, no appreciable increase in noise would result from the

project. No noise abatement measures are proposed for this project. See Section 4.25 for a discussion of construction noise impacts.

With the preferred alternative, residents living adjacent to Alignment 1 and Option C access road routes would experience a slight increase in traffic levels; however, this increase is not expected to result in an appreciable increase in noise. No noise impacts would result from the proposed project.

The No-Build alternative would result in little or no increase in noise levels.

#### **4.10 Navigation**

Vessels that use the Wood River include barges, private fishing boats, and commercial fishing boats. Both Bridge Types A and B would be constructed at an adequate height (11 meters [36 feet]) above the water surface so that boat traffic would not be affected (Figures 3 and 4). Piers associated with the preferred bridge type, Bridge Type A, would be adequately spaced (51.8 meters [170 feet]) to allow boats to pass. Bridge Type B is clear-span construction and would not involve in-water obstructions to vessel traffic.

Temporary river navigation delays could occur during bridge construction. If a temporary bridge is used for construction, the height would allow passage for most boats, and the bridge would have a removable center span to allow passage of larger vessels. If a barge is used for construction, it would be anchored to allow small boats to pass and would be moved to allow passage of larger vessels. The actual method of bridge construction would depend on the conditions of the site and established construction windows and would be determined by the contractor during the final design and permitting stage of the project. Temporary delays in large-vessel traffic could occur during the construction of either bridge type following either of the construction methods.

The preferred bridge Type A would result in the temporary impacts to vessel traffic during construction as described above.

The No-Build alternative would not change the existing condition, resulting in no impacts to vessel navigation.

## **4.11 Water Quality**

### **4.11.1 Groundwater**

The proposed project is within the Wood River watershed. Groundwater, through individual or shared wells or the public water system, provides the water supply for more than 65 percent of Aleknagik residents (Alaska Department of Community and Economic Development, 2000).

The remaining residents rely on the Wood River, cisterns, or other means for their water supply.

The groundwater table in any given area is typically a muted reflection of topography. Because Lake Aleknagik represents the surface expression of the local groundwater table, depth to groundwater is shallow next to the lake and increases with increasing distance and elevation from the shoreline. This general relationship is evidenced by groundwater levels and elevations for wells in the Aleknagik/Dillingham vicinity. The groundwater elevations of wells completed at 10.7 to 38 meters (35 to 125 feet) above mean sea level (msl) ranges from 2.7 meters (9 feet) below msl to 23 meters (75 feet) above msl (U.S. Geological Survey, 2003). Within these ranges, the shallow groundwater corresponds to wells at low elevation, and deep groundwater corresponds to wells placed at high elevation.

Groundwater quality is high. However, groundwater quality was reported to have been compromised in wells serving the Aleknagik Tribal Council Building on the north shore by fuel contamination of overlying soil in 1997. Laboratory analysis of the water concluded that aqueous fuel concentrations did not pose a significant health risk at the time (Bristol Bay Native Association, 1998).

No temporary or long-term direct impact to groundwater quality or potable water sources would occur. Sediment from road runoff would be minimized by maintaining vegetation buffers where possible, using porous embankment materials, constructing drainage channels, and by the generally flat grade, which would serve as a natural filter.

The preferred alternative would have no temporary or long-term impact to groundwater quality or potable water sources.



The No-Build alternative would not change the existing condition, resulting in no impacts to groundwater quality.

#### **4.11.2 Surface Water**

Long-term impacts to surface water quality are expected to be minimal because low traffic volumes should not result in roadway contaminants entering open water areas. Stormwater runoff from highly traveled roads usually contains small quantities of pollutants (such as sediment, oil, grease, and exhaust residues). Because the proposed road would have low traffic volumes, stormwater runoff would contain minimal contamination. Bioswales would be used to prevent sediment-laden stormwater from entering the Wood River from bridge approaches. Temporary and permanent slope stabilization to prevent erosion into the Wood River would be incorporated into the project design. Additional Best Management Practices (BMPs) will be evaluated during final design.

Spillage of fuel or other hazardous substances is possible during bridge construction and during subsequent transportation of such substances across the completed bridge. Depending on the volume and toxicity of the substance, spills entering the Wood River could affect surface and groundwater quality. Spills to the ground surface in areas of shallow groundwater could also affect groundwater. BMPs will be in place to prevent construction-related spills. No deicers would be used for winter maintenance, so these pollutants are not of concern.

Aleknagik's volunteer fire department would respond to any spill emergencies. Because the Wood River is classified as navigable water, the U.S. Coast Guard (USCG) would also respond to a spill emergency if needed.

Construction of a bridge across the Wood River could decrease the probability of fuel or hazardous substance spills by eliminating double and triple-handling of fuel containers, thereby decreasing the long-term potential for contaminant spills.

The proposed project would include repair of existing culverts and installation of new culverts as necessary to maintain or improve drainage. All culverts would be sized and installed to maintain water flow during high-water conditions.

A Tier 1 stream simulation culvert, bottomless culvert, or a clear-span bridge would be used at the Mission Creek crossing on the north shore to ensure fish passage and maintain salmon spawning habitat. The appropriate crossing structure for Mission Creek will depend on the conditions at the stream crossing location and will be determined by the Department in coordination with the OHMP during final design and permitting following guidance outlined in the “Memorandum of Agreement – Design, Permitting and Construction of Culverts for Fish Passage” between the Department and the ADF&G (Department, 2001).

The proposed Wood River bridge location is at a stable and relatively straight stretch of the river where there is no active river erosion (such as migration of the channel). Because of the proximity of Lake Aleknagik, the water levels are not likely to vary much under flood conditions. It is reasonable to expect the water flow and water quantity at the site to remain relatively uniform. Rainfall on the proposed bridge would drain to scuppers and discharge into the river. Negligible impacts to water quality are anticipated to result from the discharge of this runoff because of the small drainage area of the bridge and low potential for contaminants in surface runoff.

During design, the Department would prepare an Erosion and Sediment Control Plan (ESCP). This plan would be submitted to the Alaska Department of Environmental Conservation (ADEC) for approval along with project stormwater plans. The goal of the plans would be to have no impact on receiving waters. However, it is likely that some degradation of the Wood River water quality would temporarily occur during construction. These impacts would be minimized to the greatest extent practical by use of construction BMPs and stormwater controls developed by the contractor that would address erosion potential identified in the ESCP.

Installation of piers to support Bridge Type A, the preferred bridge type, would modify flow patterns and velocities downstream of the in-water structure. The resultant change in flow regime would cause a small amount of erosion of the river bottom downstream of the piers, thereby slightly increasing the sediment load of the river. Impact to surface water quality would be sustained on a temporary basis until a new equilibrium between erosion and sedimentation is established.

The two piers of Bridge Type A would require four pilings each, which could cause temporary impacts to surface water quality. Bridge Type B is a clear-span design and does not require in-water support. However, if a temporary work bridge is used for bridge construction, both bridge types would have the same short-term impacts to substrate and water quality because the construction would include driving and removing pilings (see Section 4.25, Construction). Pile driving and removal activities can cause the suspension of sediments, especially during pile removal, which can lead to increased levels of turbidity resulting in a short-term decrease in surface water quality (Appendix E, attachment to National Marine Fisheries Service [NMFS] letter). If a barge is used for construction with the clear-span Bridge Type B, there would be minimal impacts to surface water quality. If a barge is used with Bridge Type A, impacts from pilings as described above would still exist but would be reduced by eliminating the placement and removal of temporary pilings associated with the temporary bridge. The abutment structures of both bridge types would be constructed above the estimated ordinary and mean high water elevations at the site and outside of the floodplain, so there would be no surface water impacts from bridge abutments, as shown in the *Preliminary Hydraulics and Hydrology Report* (Appendix J). Floodplain impacts are discussed further in Section 4.15.

The riverbanks at the bridge crossing site could be eroded by people climbing down the banks to the river from the road. The ADF&G and Bristol Bay CRSA requested consideration of river access at the bridge site to minimize the potential for erosion (Appendix L). ANL made a similar request during a phone conversation (Nishimura, 2000). The Department will include a footpath to the riverbank as part of the project to prevent long-term erosion and water quality problems from pedestrians climbing down the banks to get to the river. The footpath design is described in Section 4.7, and a schematic of the footpath is shown in Figure 8.

Portions of the approach access roads to the bridge on both the north and south shores would slope toward the river, and, if not properly controlled, sediment-laden rain and snowmelt runoff could enter the Wood River. The Department would design and construct approach access roads with appropriate stormwater controls, such as vegetated buffers and bioswales, to minimize direct stormwater runoff into the river. Most runoff would sheet flow off the road surface and across vegetated slopes. This should provide adequate pretreatment of runoff prior to discharge into adjacent surface waters and wetlands and prevent long-term impacts to surface water.

The preferred alternative bridge type, Bridge Type A, would have no long-term impacts to surface water, as described above. Mitigation measures to reduce temporary and secondary impacts associated with the project are described above.

The No-Build alternative would not change the existing condition, resulting in no impacts to surface water quality.

#### **4.12 Wetlands**

All access road alternatives and options require placement of fill and would therefore affect wetlands. Wetland impacts in the proposed project area would occur when roadbed material is placed in wetlands, decreasing wetland size and altering wetland function. No wetland impacts would result from the construction of the two bridge types at either location. Table 2 provides a comparison of wetlands impacts for Alignments 1 and 2 on the south shore and Options A, B, and C on the north shore. A wetlands report for the project area is provided in Appendix G, and Figure 9 identifies the wetlands in the vicinity of the project.

##### *South Shore*

Alignments 1 and 2 have similar surface area wetlands impacts. Both routes cross a spring wetland (PSS1/EM1H, permanently flooded, broad-leaved deciduous shrub marsh with persistent emergents) that discharges groundwater into the surrounding wetlands. Road construction may result in moderate impacts to physical functioning (groundwater discharge and nutrient transfer) of the spring wetland. Proper culvert design would prevent pooling, erosion, and diminished water and nutrient flow to downstream wetlands.

Similarly, both routes would impact the “Lily Pond,” which provides nesting and feeding habitat for wetland birds and winter ice-skating for south shore residents. Alignment 1 generally follows the existing road, but smoothes a curve, cutting into the Lily Pond wetland on its southeast side. Alignment 2, north of the Lily Pond, could affect the natural flow from the pond to the larger wetland to the north that drains into Lake Aleknagik, resulting in diminished physical functioning of the Lily Pond and adjacent wetland to the north. Proper culvert design

**Table 2. Summary of Wetland Impacts on Road Route Alternatives**

	South Shore		Option A	North Shore	
	Alignment 1 <i>Preferred Alternative</i>	Alignment 2		Option B	Option C <i>Preferred Alternative</i>
Wetlands Impacted <sup>a</sup>	A2-2, A2-1, A1-13, A2-5, A1-3, A1-9, A1-10	A2-2, A2-1, A2-5, A1-3, A1-9, A1-10	A1-4, OA-1, OA-2	A1-4, OA-1	A1-4, OA-1
Total area of wetlands disturbed (acres)	1.76	1.71	2.3	0.28	0.28
Total amount of fill placed in wetlands [m <sup>3</sup> (yd <sup>3</sup> )]	6,253 (8,179)	7,358 (9,624)	21,733 (28,426)	4,626 (6,051)	4,626 (6,051)
Total amount of excavation in wetlands [m <sup>3</sup> (yd <sup>3</sup> )]	2,244 (2,935)	959 (1,250)	564 (738)	0 (0)	0 (0)

m<sup>3</sup>    Cubic meters  
yd<sup>3</sup>    Cubic yards

a.      Location of wetlands is shown in Figure 9.

and installation would help maintain the functioning of the wetlands. Impacts to the habitat value of Lily Pond likely would be greater from Alignment 2 than from Alignment 1.

### *North Shore*

Option A has greater impacts on wetlands than Options B and C. Option A bisects two wetlands that drain directly into the Wood River and could cause moderate impacts to the physical functioning of both wetlands. Proper culvert installation would be critical to minimizing impacts. Where the alignments are the same, Options B and C would cause negligible impact to the wetland because of routing along a previously disturbed area. The proposed alignment east of the convergence of Options A, B, and C on the north shore would cross two small, isolated wetlands near the bridge site. Wetlands impacts would be negligible because of the small size and minimal functioning of these wetlands.

The preferred alternative's combination of Alignment 1 and Option C has the least amount of wetland impacts when considering impacts to both surface area of disturbance and wetland functions and values. On the south shore, Alignment 1 causes slightly more surface-area disturbance than Alignment 2 but would affect the overall functions and values of Lily Pond less by maintaining natural drainage from the pond to the larger wetland to the north (Figure 9). On the north shore, Option C minimizes wetlands impacts as compared to Option A (Table 2, Figure 9).

Under the No-Build alternative, no wetlands would be filled; however, impacts to wetlands from erosion and stormwater runoff associated with existing roads would continue.

### *Wetlands Impact Mitigation*

The USACE requires consideration of measures to mitigate adverse wetland impacts by performing some or all of the following actions: (1) avoiding the impact, (2) minimizing impacts, and (3) compensating for an unavoidable impact.

- Avoidance. Construction in wetlands cannot be avoided for this project if the project purpose is to be achieved. Access road alternatives that avoided wetlands were evaluated but were eliminated from consideration because they did not follow existing roads and would have

resulted in more surface area being affected and greater impacts to other resources such as upland wildlife habitat. Rerouting south shore alignments to avoid the Lily Pond (wetland A2-5) and wetland A1-3 was evaluated but was not feasible because (1) the design speed of the proposed road necessitates large-radius curves, which cannot be contained within the existing road alignment, and (2) the realignment would result in the relocation of an existing home and would encroach on several undeveloped properties in the adjacent subdivision.

- Minimization. Impacts to wetlands have been minimized by the following means: (1) utilizing existing, already disturbed road ROW as much as possible on both the north and south shores, (2) routing new alignments around wetlands where possible (Alignment 1 passes between A1-9 and A1-10, Alignment 2 bypasses A2-3, and Option C bypasses OC-1), and (3) routing alignments along the edges of wetlands (Alignment 1 skirts the edges of A2-5 and A1-3 and Options B and C skirt the edge of OA-1) or through narrow portions of wetlands (Alignment 2 traverses a narrow portion of wetland between A2-4 and A2-5) where avoidance is not possible. One of the selection criteria for the preferred alternative was minimizing overall wetlands impacts. By selecting Alignment 1 and Option C for the preferred alternative, the Department effectively selected the alignments with the least overall wetlands impacts. Where wetlands are crossed, impacts will be further minimized by maintaining the natural flow patterns to the extent possible with the use of both surface and subsurface cross drains as appropriate. In addition, native vegetation will be used to revegetate road slopes and areas that must be disturbed during construction.
- Restoration/Compensation. The impact of wetlands losses is minimal because the wetlands are not unique within the project area, many have been previously affected, and the impacted wetlands are not of high value. Based on these factors, no compensatory mitigation is proposed.

#### *Only Practicable Alternative Finding*

Executive Order 11990, Protection of Wetlands, requires that there be no practicable alternative to the proposed action and that the project include all practicable measures to minimize harm to wetlands.

The FHWA has analyzed the project and determined that there are no practicable alternatives having less impact on the aquatic ecosystem than the preferred alternative (as discussed above) and without other significant adverse environmental consequences that do not involve discharges into waters of the U.S. All other road alignments considered for the project would have wetlands impacts equal to or greater than the preferred alternative. The preferred alternative makes use of the largest total length of existing, already disturbed road ROW.

During the final design and permitting stage of the project, the Department will work with federal, state, and local resource agencies to develop design features and a mitigation plan to minimize harm to wetlands. The Department proposes the following preliminary mitigation measures to minimize wetland impacts:

1. The contractor shall provide effective erosion and surface-water runoff control from the road into adjacent streams and wetlands during construction.
2. Each bank cut, slope, fill, bottoms of roadside ditches, and exposed earthwork attributable to the project, especially during culvert installation and road-building activities, will be stabilized to prevent erosion both during and after project completion.
3. Equipment servicing and fueling operations will not occur within the annual floodplain or within 30.3 meters (100 feet) of any river, stream, drainage channel, or other waterbody, including wetlands. Adequate sorbent materials will be kept onsite to be used to contain and cleanup any spill of petroleum products.

On the basis of the above considerations, it has been determined that there is no practicable alternative to the proposed construction in waters of the U.S., and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from the project. A USACE Section 404/10 Permit, for work in U.S. waters and all discharge or fill material placement in wetlands, will be obtained for this project.

#### **4.13 Wild and Scenic Rivers**

The proposed action does not affect a designated Wild and Scenic River (National Wild and Scenic Rivers System, 2001).



#### 4.14 Waterbodies

The Wood River watershed drains an area of approximately 2,875 to 3,679 square km (1,110 to 1,415 square miles), including approximately 96,000 hectares (240,000 acres) of lake surface, rivers, and streams (ADNR, 1974; Appendix I). An average of 4.2 billion cubic meters per year (3.4 million acre-feet per year) flow through the Wood River (ADNR, 1974). Mean monthly flow rates of the Wood River range from 63 cubic meters per second (2,231 cubic feet per second) in January to 339 cubic meters per second (11,790 cubic feet per second) in June (Estes, 1998). On the basis of the *Preliminary Hydraulics and Hydrology Report* (Appendix I), the Department estimates the discharge during a 100-year flood event would be 933 cubic meters per second (32,900 cubic feet per second).

Lake levels in the Wood River system generally peak in June, approximately 20 days after ice breakup, which usually occurs in late May. Lake levels are measured annually on Lake Nerka, above Lake Aleknagik, with records beginning in 1952. On average, Lake Nerka reaches a high of 151 cm (59 inches) above the low-water mark in mid-June. The highest level recorded above low water is 227 cm (89 inches) (Rogers and Rogers, 1998a; Quinn et al., 2000). The lake system provides significant attenuation of flood peaks in the Wood River (Appendix J).

Although Aleknagik is approximately 51 km (32 miles) from tidewater, the Wood River is tidally influenced at the proposed bridge crossing location. Local residents report that tidally influenced flow reversals generally occur in early spring when lake levels are low and the tide cycle is high, and during lower tides when lake levels are extremely low (Appendix J). The jurisdictional mean high water elevation for Snag Point on Nushagak Bay, south of Dillingham, is 5.5 meters (18 feet). This water elevation was used as the basis for the hydrology assessment for the Wood River bridge site. The ordinary high water elevation at the site is estimated to be 4 meters (13 feet).

Waterbody modifications would occur to the Wood River, which is a navigable waterway. Sections 9 and 10 of the River and Harbors Act of 1899 require that a Department of the Army permit be obtained for certain structures or work in or affecting navigable waters (33 USC 403). In addition, a bridge permit application is being submitted to the USCG Aids to Navigation.

Bridge abutments for both Bridge Type A and Type B would be located above estimated mean high water and ordinary high water elevations at the site and thus would not affect the waterbody. Placing piers in the Wood River to support Bridge Type A, the preferred alternative, would result in a small amount of scour around each piling (Appendix J). Water velocities at the bridge crossing would contribute to a minor transport of silt and gravel substrate around pilings downstream as far as 1.6 meters (5.2 feet). A lesser amount of silt and gravel may move upstream because of tidal influences at the bridge site. Placing piers in the river is not expected to cause ice build-up behind bridge piers, affect the movement of ice downriver during spring breakup, or raise the water level upstream of the bridge because the distance between the spans will allow ice to move through. During spring breakup, the river and lake ice typically melts in place. If it does float free and move downstream, it is usually in a rotten “icicle ice” condition. This type of ice poses very little risk for causing ice jams or damage. Harder ice cakes may occasionally move upriver with flow reversals during large spring tides. However, they are usually small pieces that do not pose an ice jam risk along the river (Appendix J). The lateral forces produced by ice loads and scour potential on the piers will be addressed in the bridge design. Additional information on the Wood River and lake system is provided in Appendix J, *Preliminary Hydraulics and Hydrology Report*.

Bridge Type B is a clear-span bridge with no in-water structure. There would be no impacts to the Wood River from this bridge type.

Mission Creek is a 16-km (10-mile)-long, spring-fed tributary stream (Rogers and Rogers, 1998a) that drains into Lake Aleknagik from the north shore near its outlet into the Wood River. A Tier 1 stream simulation culvert or bottomless culvert designed in accordance with the Memorandum of Agreement between the Department and the ADF&G (Department, 2001) or a clear-span bridge would be installed at Mission Creek to allow fish passage and maintain fish spawning habitat.

Impacts to waterbodies from the preferred bridge alternative, Bridge Type A, are discussed above.

The No-Build alternative would result in no change to the Wood River and Mission Creek.

#### 4.15 Floodplains

Per Executive Order 11988: Floodplain Management, as amended by Executive Order 12148, U.S. Department of Transportation Order 5650.2, and Title 23, Code of Federal Regulations, Part 650, this project was 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. Only a small portion of the project crosses the Wood River floodplain. The floodplain would have to be crossed by any alternative to provide road access from the south shore to the north shore of Aleknagik and would be temporarily affected by both bridge types unless a barge construction method is used in conjunction with clear-span Bridge Type B as described below.

There is no Federal Emergency Management Agency floodplain information available for the project area, and no other floodplain information or studies results are known to be available, other than the *Preliminary Hydraulics and Hydrology Report* prepared for this project (Appendix J). The *Preliminary Hydraulics and Hydrology Report* provides estimates of water levels up to the 500-year floodplain for the bridge site.

Bridge abutments for both Bridge Types A and B and associated rip-rap would be constructed above the estimated 500-year floodplain as illustrated in Appendix J. Access roads also would be constructed well above the estimated 500-year floodplain. Two piers with four pilings each would be located in the 100-year floodplain for Bridge Type A. No permanent structures would be located within the 100-year floodplain with the clear-span Bridge Type B.

The construction of either bridge type would be accomplished by the construction of a temporary work bridge parallel to the permanent bridge location or by use of a barge. The actual method of bridge construction would depend on the conditions of the site and established construction windows (discussed in Section 4.18.1) and would be determined by the contractor during the final design and permitting stage of the project. The temporary work bridge would have as many as eight spans and would require the placement of as many as seven piers (with two to three piles per pier) within the 100-year floodplain. The temporary work bridge and pilings would be removed once the permanent bridge is constructed. If a barge is used for construction with the clear-span Bridge Type B, there would be no impacts to the floodplain.

The bridge types designed for the Wood River would minimize impacts to floodplains and preserve floodplain values by limiting the increase in backwater and adequately passing floods without substantial damage to the floodplain, bridge, or embankment. The placement of two piers for Bridge Type A would impede floodwater and debris to a greater degree than the clear-span Bridge Type B; however, neither bridge design is expected to significantly restrict flood-stage flows. Ice build-up behind the two piers on Bridge Type A is expected to be minimal, as discussed in Section 4.14.

The floodplain at Mission Creek is small and remains within the banks of the creek. A Tier 1 stream simulation culvert or bottomless culvert sized to allow unimpeded water flow during flood conditions or a clear-span bridge would be designed and installed where the proposed access road crosses Mission Creek. The crossing structure at Mission Creek would be designed and installed following guidance outlined in the Memorandum of Agreement between the Department and the ADF&G (Department, 2001).

The proposed project would not support incompatible floodplain development. The proposed facilities would conform to all applicable state and federal floodplain regulations.

The preferred alternative, Bridge Type A, would have minimal impacts on the floodplain from the placement of two piers but is not expected to restrict flood-stage flows, as described above. There would be no impacts to the floodplain from construction of access roads or bridge abutments. Impacts to the floodplain would be reduced with the use of a barge for construction of the permanent bridge.

The No-Build alternative would not change the existing condition, resulting in no impacts to local waterbodies and their floodplains.

#### **4.16 Coastal Barriers**

There are no designated coastal barriers existing in Alaska; therefore, no impact would occur.

#### **4.17 Coastal Zone**

The project is located within the Bristol Bay CRSA and appears to be consistent with its policies. The project will be formally reviewed for compliance with the BBCMP (Bristol Bay Coastal

Resource Service Area Board, 1992) during permitting. The proposed project is not anticipated to cause adverse impacts on any aspect of coastal resources. The proposed project is being coordinated with the ADNR Office of Project Management and Permitting (OPMP), the state agency responsible for coordinating reviews of projects in coastal zones with necessary state and federal agencies and with the local coastal district.

#### **4.18 Fish and Wildlife**

Fish and wildlife are important components to the economy and lifestyle of the people of Aleknagik and Bristol Bay and are discussed in the following sections.

##### **4.18.1 Fish**

All five species of Alaska salmon (sockeye [*Oncorhynchus nerka*], king [*O. tshawytscha*], coho [*O. kisutch*], pink [*O. gorbuscha*], and chum [*O. keta*]), Arctic char (*Salvelinus alpinus*), and whitefish (*Prosopium* spp. and *Coregonus* spp.) migrate up the Wood River and Lake Aleknagik to spawn in the Wood River Lakes system (ADF&G, 1984). Resident fish in the Wood River include rainbow trout (*O. mykiss*), Arctic grayling (*Thymallus arcticus*), Dolly Varden (*S. malma*), northern pike (*Esox lucius*), and Alaska blackfish (*Dallia pectoralis*) (Estes, 1998).

Mission Creek provides migration and spawning habitat for sockeye salmon and may also provide rearing habitat for coho salmon (Rogers and Rogers, 1998b). Resident fish in Mission Creek include rainbow trout, Arctic grayling, Dolly Varden, northern pike, and Alaska blackfish (Estes, 1998).

##### *Essential Fish Habitat Assessment*

The Magnuson Stevens Fishery Conservation and Management Act reauthorization of 1996 provides for the designation of Essential Fish Habitat (EFH) for managed fish species under the jurisdiction of the NMFS to minimize adverse effects on waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Department, in concert with the FHWA, has determined that the proposed project may adversely affect EFH. For this reason an EFH Assessment evaluating salmon species that migrate through or spawn in the Wood River system was prepared for this project. The resultant EFH Assessment is provided in Appendix K

and is summarized in the following text. The NMFS evaluates the EFH Assessment and any conservation measures proposed to eliminate or reduce adverse impacts to EFH.

### Wood River

All five species of Alaskan salmon migrate through the Wood River Lakes system, and sockeye salmon reportedly spawn in the Wood River approximately 350 to 450 meters (380 to 490 yards) and 1.6 km (1 mile) downriver from the proposed bridge site (Rogers and Rogers, 1998b; Browning, 2001). The ADF&G flew surveys over the Upper Wood River near the proposed bridge site during the summer of 2001 and did not observe any salmon spawning at the site (Browning, 2001).

Fish species in the project area that prey upon Alaska salmon from the egg stage to the juvenile stage include rainbow trout, Dolly Varden, coho salmon smolts, and northern pike (ADF&G, 1985).

Adverse impacts to EFH from Bridge Type A, the preferred alternative, would include loss of EFH from placement of pilings and resultant scour. Bridge Type B, the clear-span bridge, would eliminate habitat loss and potential scour from the placement of pilings associated with the permanent bridge, and thus could eliminate direct impacts to EFH.

The construction of either bridge type would be accomplished by the construction of a temporary work bridge parallel to the permanent bridge location or by use of a barge. The actual method of bridge construction would depend on the conditions of the site and established construction windows (discussed below) and would be determined by the contractor during the final design and permitting stage of the project. The temporary work bridge would have as many as eight spans and would require the placement of as many as seven piers (with two to three piles per pier) in the Wood River. The temporary work bridge and pilings would be removed once the permanent bridge is constructed. If a temporary work bridge is used for bridge construction, both bridge types would have the same short-term impacts to substrate and water quality and EFH because the construction would include driving and removing pilings (see Section 4.25, Construction). Pile-driving activities generate intense underwater sound waves to fish, and the removal of piles has the potential to resuspend sediments that can result in harmful levels of

turbidity or release of any contaminated sediment (Appendix E, attachment to NMFS letter). If a barge is used for construction with the clear-span Bridge Type B, there would be no impacts to substrate, minimal impacts to water quality, and no adverse effects to EFH. If barge construction is used with Bridge Type A, impacts from pilings as described above would still exist but would be reduced by eliminating the placement and removal of temporary pilings associated with the temporary work bridge.

Pilings constructed for Bridge Type A would occupy approximately 20 square meters (215 square feet) of river-bottom habitat; additional river-bottom habitat may be lost as a result of scour downstream from the pilings. In the *Preliminary Hydraulics and Hydrology Report* for the Wood River Bridge (Appendix J), the Department computed a pier scour of 1.3 to 1.6 meters (4.3 to 5.2 feet), which is considered normal to low compared to other rivers of similar size and discharge. The substrate in the channel at the proposed bridge site is described as “gravel, cobblestones, and large boulders, and should be permanent.” The gravel-cobble-boulder nature of the bed material limits the formation of a scour hole at the piers for Bridge Type A. Scour calculations are inherently conservative and are based on empirical relationships that envelop a wide set of conditions; therefore, it is expected that actual scour would be less than the calculated values of 1.3 to 1.6 meters (4.3 to 5.2 feet).

At a 100-year flood, it is expected that a scour hole would form around the upstream pile in a horseshoe shape. The calculated extent would be approximately 2 meters (6.5 feet) wide by 3 meters (10 feet) long on either side of the upstream pile. Because of the large bed material, it is expected that the actual scour hole would be less. Scour at normal flows is expected to be negligible. Calculations confirm that contraction scour, removal of sediment from the bottom and sides of the river, would not occur for any of the bridge types.

Permits required for the project are presented in Section 5.0. Among other requirements, permit conditions may specify a construction window for all in-water work, timed to avoid impacts to fish during critical time periods. The ADF&G has indicated that the construction window for in-water work in the Wood River would be from the beginning of April through the third week in May (Browning, 2001). Construction windows would apply to the following activities:

- Pile driving and pier placement for the temporary work bridge (if constructed)

- Pile driving and pier placement for the permanent bridge
- Pile removal for the temporary work bridge (if constructed)

### Mission Creek

Mission Creek provides migration and spawning habitat for sockeye salmon and may also provide rearing habitat for coho salmon (Rogers and Rogers, 1998b). Resident fish in Mission Creek that may prey on salmon include rainbow trout, Arctic grayling, and northern pike (Estes, 1998).

Both the Wood River and Mission Creek are important producers of salmon and other fish used by subsistence users. No commercial fishing exists on Mission Creek, and it provides a nominal amount of recreational fishing and other recreational opportunities.

Per the Memorandum of Agreement on design, permitting, and construction of culverts for fish passage (Department, 2001), a Tier 1 stream simulation culvert, bottomless culvert, or clear-span bridge would be used to cross Mission Creek. As with the Wood River, construction windows may be required for in-water work (below the ordinary high water) at Mission Creek.

### Conservation and Mitigation Measures

As indicated in the EFH Assessment, conservation and mitigation measures have been suggested for implementation during final design and construction to minimize impacts to EFH in the Wood River and Mission Creek. Some of these measures are general in nature because the project has not been fully designed, and the NMFS has requested that the Department continue to coordinate with them on more specific measures as the project is designed. The Department is fully committed to implementing the following conservation and mitigation measures and to implementing more specific measures that are developed in consultation with NMFS during final design of the project. The following mitigation measures would be implemented during design and construction of the project to minimize impacts to EFH:

- Obtain all necessary permits and agency approvals and abide by the conditions of each permit.



- Consult with NMFS and OHMP to develop construction windows to minimize impacts to living marine resources, particularly obstruction or disturbance to migrating salmonids, siltation of downstream salmon redds, and disturbance to juvenile fish species.
- Design the project to incorporate stormwater controls and provide pedestrian access at bridge sites to minimize the potential for erosion from runoff and foot-traffic. Design bridge to minimize substrate loss and degradation by minimizing the amount of in-water structure.
- Use BMPs during construction to minimize erosion and sedimentation and prevent contamination by placing all staging, fueling, and servicing operations a minimum of 30 meters (100 feet) from EFH and using contaminant-free construction materials.
- Use a vibratory hammer when driving hollow steel piles to the extent possible.
- Monitor sound pressure levels during pile driving to ensure that they do not exceed the 180-dB threshold for injury to fish, and implement measures to attenuate the sound should sound pressure levels exceed the 180-dB threshold.
- If a temporary bridge is used to construct the permanent bridge, remove the temporary piles completely rather than cutting or breaking them off.
- Design and construct approach access roads with appropriate stormwater controls to minimize direct stormwater runoff into the river.
- Evaluate use of a barge instead of a temporary bridge to construct the permanent bridge, to minimize impacts associated with pile-driving and temporary pile removal.
- Design and install a crossing structure at Mission Creek to minimize impacts to EFH.
- Require the contractor to obtain and abide by all required environmental permits, prepare required plans, and employ various BMPs.
- Require the contractor to prepare a Stormwater Pollution Prevention Plan and a Hazardous Material Control Plan and abide by those plans.

With emplacement of appropriate mitigation, no long-term impacts to EFH and subsistence use of fish resources are expected.

Construction of the preferred Bridge Type A is not expected to have long-term impacts to EFH with the emplacement of construction windows and other appropriate mitigation measures as described above. Barge construction would further reduce the impacts to EFH.

The No-Build alternative would result in no impact on fish or fish habitat.

#### **4.18.2 Wildlife**

The project area provides habitat for a variety of terrestrial wildlife species, but no critical use areas are known to exist in the project area. ADF&G stated that there are no state legislatively designated special areas (state game refuges, sanctuaries, or critical habitat areas) in the project vicinity over which ADF&G exerts Title 16 special areas permitting authority.

Game and fur-bearing animals that occur in and near the project area include caribou (*Rangifer tarandus*), moose (*Alces alces*), wolves (*Canis lupus*), wolverines (*Gulo gulo*), lynx (*Lynx lynx*), red foxes (*Vulpes vulpes*), brown (*Ursus arctos*) and black (*U. americanus*) bears, snowshoe hares (*Lepus americanus*), spruce grouse (*Falci pennis canadensis*), ptarmigan (*Lagopus spp.*), and migratory waterfowl (ADF&G, 2000).

The Department conducted a bald eagle survey in the project area on June 5, 2003, and no bald eagle nests were observed in the area (Elliott, 2003). If a new active bald eagle nest is discovered during construction within the primary or secondary zones of the bridge site and access road areas, the U.S. Fish and Wildlife Service (USFWS) would be notified. The USFWS recommends a two-zone management system in areas around nest trees. The greatest degree of management is within the Primary Zone (100 meters [330 feet] from the nest tree), where activities that significantly alter the landscape and vegetation should be avoided. Management emphasis in the Secondary Zone (200 meters [660 feet] from the nest tree) should focus on scheduling activities to avoid adversely affecting the birds during the nesting season, from March through August (USFWS, undated).

A maximum of 2 hectares (5 acres) of habitat for game and non-game wildlife species would be lost from construction of new access roads on the north and south shores. The habitat that would be lost includes both upland forests (maximum of 1.6 hectares [4 acres]) and wetlands (maximum of 0.4 hectare [1 acre]). The exact amount of disturbed habitat will depend on the access road route chosen. However, the type of vegetative cover/habitat in the areas that would be disturbed is not unique and is abundant throughout the Aleknagik area and southwestern Alaska. Most species affected by the various projects would relocate to nearby areas that provide similar habitat. Immediately upon construction, wildlife would be displaced, and there may be short-term competition for similar undisturbed habitat in the surrounding areas. However, local wildlife populations would adjust to the alteration of habitat. By comparison, impacts would be lower for Alignment 1 than Alignment 2 and lower for Option B than Options A and C.

The additional traffic may result in increased disturbance to water birds nesting and feeding in ponds and wetlands adjacent to the existing road. However, this impact is expected to be negligible for most of the proposed alignments because of the overall low traffic volumes. Alignment 2 on the south shore would have the potential for more impacts than Alignment 1, because it would result in traffic on both sides of the Lily Pond.

The project would improve land access for hunters and trappers to the north and east of Lake Aleknagik and the Wood River. This could result in potentially more competition for game in nearby areas.

With the preferred alternative, access road routes Alignment 1 and Option C combined would have wildlife habitat impacts comparable to those of the other combinations of routes presented for the north and south shores. As discussed above, Alignment 1 has lesser impacts to wildlife habitat than Alignment 2 because it makes better use of existing roads. Option C has greater impacts to wildlife habitat than Option B because Option C is a longer route, but has comparable impacts to wildlife habitat as Option A.

The No-Build alternative would result in no impact on wildlife or wildlife habitat.

#### **4.19 Threatened and Endangered Species**

In accordance with section 7, Endangered Species Act of 1973, as amended (16 USC 1531 *et seq.*), the USFWS and NMFS were contacted for information on known threatened or endangered species in the project area. Through this consultation it was determined that there are no known threatened or endangered species in the project area (Appendices D and L).

#### **4.20 Subsistence**

The area between Aleknagik and Dillingham is readily accessible (by road and snowmobile) to residents from both communities and receives more hunting pressure than the area north of Lake Aleknagik and east of the Wood River near Aleknagik. Many Aleknagik hunters from both the north and south shores hunt moose and caribou north of the lake and on the east side of the Wood River (which requires that south shore residents cross Lake Aleknagik). Crossing from the south shore to the north shore on snowmobile can be difficult depending on conditions such as weather, temperature, overflow, open water, and ice thickness. Subsistence harvesting of berries on the north shore is almost exclusively done by north shore residents. The bridge would allow greater access to the north shore for hunting and berry gathering. Subsistence users could drive from Dillingham, cross the bridge, and access the area on the north shore and east of the Wood River.

The project would allow subsistence hunters living south of the lake more consistent winter access to the north shore. However, increased access to the area north of Lake Aleknagik and east of the Wood River may result in greater competition for resources among local residents.

If the bridge attracts fishermen to the Wood River, use of fish resources could become a conflict between north and south shore residents. Although fishing activity may be concentrated at the bridge site, it is not likely that construction of a bridge would increase fishing activity to a level that significantly decreases the carrying capacity of the Wood River system.

The preferred alternative would have the same impacts to subsistence resources in the project area as describe above.

The No-Build alternative would result in no impact on subsistence resources and areas. Access to the subsistence resources and areas on the north shore would remain unchanged.

#### **4.21 Cultural Resources**

To evaluate cultural resources, a literature review of documents, reports, and other relevant information pertaining to the archeological resources in the vicinity of Aleknagik was conducted. A report titled *Cultural Resources Literature Review – Aleknagik Wood River Bridge and Road Project* (Appendix F) summarized the results of the literature review and was submitted to the State Historic Preservation Office (SHPO) for review and comment.

On the basis of the literature review, the SHPO determined that a field survey would be required for the proposed project to meet the requirements of Section 106 compliance requirements. The field survey was conducted in September 2000. The resultant report, *Section 106 Archaeology Compliance Report – Aleknagik Wood River Bridge and Road Project* (Appendix F), recommended a finding of no historic properties affected by the proposed project. The SHPO provided its concurrence with this recommendation on February 8, 2001, concluding the coordination under Section 106 of the National Historic Preservation Act for this project. The finding is limited to the alternative routes that were surveyed. All alternatives shown in Figure 2 have been surveyed. Modifications to these routes will require additional evaluation, particularly if they extend outside the corridor evaluated. If archeological materials are discovered unexpectedly during construction, work would be stopped in the immediate vicinity of the discovery, and the Department would immediately initiate consultations with the SHPO and the local federally recognized tribal government.

The preferred alternative includes a combination of the routes surveyed during the field survey for cultural and historic resources; therefore, the FHWA has determined that no historic properties would be affected.

The No-Build alternative would result in no direct impact on cultural resources.

#### **4.22 Hazardous Materials**

A Phase I Site Investigation was conducted to identify properties that may be contaminated with hazardous materials. The report prepared for the Phase I Site Investigation is provided in Appendix H. One area of potential contamination was discovered on the north shore. This site was previously used as a dump by the former Seventh Day Adventist facility (now the Mission Lodge) (Figure 2). It contains old paint cans, rusted 55-gallon drums, appliances, and assorted other debris. Although there is no known contamination, hazardous materials may have been disposed of at the site and could have affected the soil and groundwater within the proposed ROW near this location. The current road alignment avoids the property with the dump site. A Phase II Site Investigation would be undertaken during the design phase to determine if contamination exists at this location.

Should contamination be discovered within the ROW, a cleanup and disposal plan acceptable to the ADEC would be developed and implemented. As part of the construction contract, the contractor would be required to develop a Hazardous Materials Control Plan to address containment, cleanup, and disposal of all construction-related discharges of petroleum fuels, oils, and/or other hazardous substances. In addition, the specification requiring the use of material “free from contamination” would be in the construction contract.

#### **4.23 Visual**

The project area is within the Kuskokwim Highlands, which occupy outwash plains and low moraines as well as rugged mountains and low hills. Muskegs, lakes, and streams are common in the landscape (Rieger et al., 1979). The broad Nushagak River Lowland, which is composed of moraine and outwash deposits, lies south of Aleknagik. To the east of Aleknagik, running north-south, the Wood River Mountains rise to elevations greater than 1,500 meters (5,000 feet).

The area vegetation is a mix of upland forest interspersed with ponds, saturated shrub bogs, and emergent wetlands. The bridge access roads would be located on gently rolling terrain through mostly forested uplands. There are few views of Wood River or Lake Aleknagik from the access road options because of the height of trees and distance from the shore. Construction of Alignments 1 and 2 would alter existing viewsheds to adjacent property owners in the Atsat,

Chythlook, and Scenic View subdivisions because of tree clearing and road straightening. Options A, B, and C would cause similar impacts to adjacent property owners in the Sturneq and Wood River Heights subdivisions.

The bridge would be approximately 10.7 meters (35 feet) above the normal water surface and would not be visible from the City of Aleknagik because it would be located around a curve in the Wood River. The bridge would be visible to Mission Lodge owners, employees, and guests; river users; and nearby residents. From the proposed bridge, motorists would be able to look southwest down the Wood River and northeast toward Mission Lodge.

The preferred alternative would have impacts to visual resources similar to those of all other routes evaluated, as discussed above.

The No-Build alternative would have no impacts to the visual environment.

#### **4.24 Energy**

The build alternatives would require construction energy, but no measurable effect to the nation's fuel supplies would be caused by the proposed project. Once the proposed project is constructed, more vehicular traffic between the north and south shores of Aleknagik is anticipated. However, much of this traffic would offset other forms of travel, such as skiffs in the summer or snowmobiles in the winter. Some increase in vehicular traffic could result from more casual trips between the two shores because of easier access or from workers commuting to Dillingham. A bridge would make the north shore accessible for truck deliveries for items such as bulk fuel, consumer goods, and mail rather than relying on barge or air delivery. Only minor net differences in energy consumption would be expected from the proposed project.

#### **4.25 Construction**

Construction of this project would probably require two construction seasons. Temporary impacts associated with road and bridge construction activities are summarized below.

- 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 construction and staging areas would increase because of the use of heavy equipment. Those residences closest to the road and bridge site would be affected the most, but these impacts would be similar for all alternatives, unavoidable, and temporary. The greatest noise impacts would be from diesel engine equipment used for the hauling and placement of road building materials and from pile driving associated with bridge construction. Typical contractor work schedules are 6 days per week at 10 hours per day. Pile driving associated with the temporary work bridge would be intermittent loud noise over the course of 8 days to 2 weeks. Noise from physical pile driving activities would occur for approximately 25 percent of the overall duration of temporary bridge construction. The use of a barge for construction rather than a temporary work bridge would eliminate these noise impacts. For permanent Bridge Type A, the preferred alternative, pile driving operations would take place for approximately 16 days with noise from physical pile driving activities occurring 50 percent of the time. The duration of construction activities associated with pile driving for permanent Bridge Type B would be approximately 8 days with noise from actual pile driving activities 50 percent of the total time.
- The water quality of the Wood River would be temporarily affected during construction for either bridge alternative if constructed with the use of a temporary bridge. The temporary work bridge would create a small amount of scour around the pilings. Barge-mounted construction would minimize impacts to water quality of the Wood River with the construction of Bridge Type A and Bridge Type B. Sedimentation into the Wood River would be minimized by making structures to isolate the piling construction areas from the river water. Similarly, placement of the Tier 1 stream simulation culvert or bottomless culvert at Mission Creek may temporarily increase sedimentation in the creek and disturb the substrate. A clear-span bridge over Mission Creek would minimize impacts to water quality. Detailed culvert/bridge plans and specific methods of construction will be developed during the final design phase. The Department will prepare an ESCP, and the construction contractor will prepare a Storm Water Pollution Prevention Plan to address issues raised in



the ESCP. These plans will identify the BMPs that would be implemented during and following construction to minimize erosion and sedimentation and mitigate impacts to water quality. With proper design and mitigation, no long-term impacts to the water quality in the Wood River or Mission Creek are expected.

- Staging areas and storage of fuels would be in upland areas and would not be allowed within 30 meters (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 corrective action plan.
- Fish and wildlife impacts include potential degradation and loss of aquatic and terrestrial habitat, temporary displacement of wildlife, and increased pressure on game. Impacts to EFH would be minimized by isolating in-water work areas from river water and establishing a construction window for in-water work with the OHMP and NMFS to avoid periods of fish migration, spawning, and rearing. The ADF&G has indicated that construction of structures to isolate pile driving and pier placement work from surrounding waters for the temporary work bridge, and the permanent bridge if Bridge Type A is selected, should be limited to springtime after salmon eggs have hatched and before adult salmon begin spawning downstream (about late April to mid July) (Dolezal, 2002). More recently, the OHMP has indicated that a barge-mounted construction effort is their preferred construction method because pile-driving and removal activities may have adverse effects on fish (Appendix E, OHMP letter). Similarly, isolation of Mission Creek from culvert/bridge construction work should take place during periods to avoid fish migration and spawning. BMPs would be implemented to reduce turbidity levels in surface water to the lowest extent possible. Loss of terrestrial habitat, temporary displacement of wildlife, and increased pressure on game are unavoidable impacts.
- Vehicular traffic on the existing roads to be improved as part on this project would be temporarily disrupted, although a one-way traffic lane or suitable detour would remain open

at all times to maintain access. Heavy equipment and material-hauling truck traffic through existing subdivisions would increase.

- River traffic, consisting of barges and private and commercial fishing boats, could be restricted in the project area during bridge construction. A temporary construction navigation plan for river use during construction would be coordinated with and approved by the USCG as part of the Section 9 Bridge Permit. Construction activities would be conducted so that free navigation of the waterway is not unreasonably interfered with during construction. If construction materials such as cables, rebar, large pieces of concrete, or any other materials that may present a hazard to boaters are accidentally dropped in the river, a river closure would be put in effect until the material is removed. Safety would be emphasized during construction. Appropriate permanent navigational aids will be incorporated into the design of the bridge.

The No-Build alternative would have no construction-related impacts.

#### **4.26 Materials and Disposal Site(s)**

The contractor would supply the materials for construction of the proposed project. The Department does not plan to identify or designate any specific material or disposal site(s) or offsite support areas. Both the north and south sides of Lake Aleknagik have known material sites close to the proposed bridge site. Material unusable for the road base would be used for side slopes or would be disposed of at a contractor-permitted site(s). All of these sites are privately owned. The specific source, transport method and route, and disposal site of quarry materials are dependent on contractor preference and therefore not known at this time. The construction contract will require that the contractor acquire all environmental permits and clearances in accordance with Department standard specifications for contractor-supplied material sites, disposal sites, and offsite support areas before their use.

#### **4.27 Short-term Use versus Long-term Productivity**

The short-term impacts of the bridge construction are consistent with impacts from similar large construction projects. Impacts from noise, construction-vehicular emissions, and dust would be minor and alleviated once construction is complete. The long-term productivity for the

community resulting from the project includes improved access to schools, health, and emergency services; consolidated City services, which results in both cost savings and improved services; better access to the job market in Dillingham, which would decrease local unemployment; and more opportunities for developing local business, particularly on the north shore. Therefore, the short-term impacts of construction would be more than offset by the improved conditions resulting from a bridge melding the city into a cohesive community.

#### **4.28 Irreversible and Irretrievable Commitments of Resources**

Construction materials, land, labor, and financial resources would be irretrievably committed to the project. None of these are considered to be in short supply. Material sites are available in the area, and although this material would be permanently removed from availability, its use for this project is not expected to impact resource utilization on a long-term basis. Considerable amounts of fuel and labor would also be required, but they are not in short supply and their use would not have an adverse effect on future availability. Financial resources are evaluated within the Statewide Transportation Improvement Plan. Construction of the bridge is the City of Aleknagik's number one priority. Use of federal resources would require a one-time expenditure of approximately \$10 million. This money would be irretrievably committed for project construction. Overall, little to no impact is anticipated from the irreversible and irretrievable commitment of resources to the project.

#### **4.29 Secondary and Cumulative Impacts**

A Secondary and Cumulative Impacts Study was conducted. The resulting report, provided in Appendix A, identifies and describes potential secondary and cumulative impacts associated with the proposed project and the No-Build alternative. Table 3 summarizes the secondary and cumulative impacts.

Beneficial secondary and cumulative impacts associated with the proposed project include the following:

- Enhanced community cohesion because of improved access between the south and north shores

- Enhanced public access to health care
- Consolidated government services and facilities; minimization of duplicated services will help free up funding for other needs and developments (Appendix D, Scoping Summary Report, p. B-10)
- Enhanced local economy and economic opportunities through expansion of employment opportunities and increased opportunities for development of new businesses on the north shore
- Facilitated development of ANL land on the north shore (Nishimura, 2000)
- Decrease in the cost of supplies to north shore residents
- Decrease in the potential for fuel or other contaminant spills in Lake Aleknagik and the Wood River
- Decreased pressure on parking at the Lake Aleknagik SRS

Some adverse secondary and cumulative impacts may also occur:

- Slightly increased automobile and truck traffic and associated noise and dust levels, which would be a minor negative impact to the quality of life and may also result in a minor disturbance to wildlife habitat and wildlife
- Possible increase in trespassing and vandalism on the north shore
- Possible slightly diminished appeal of the Mission Lodge, which is currently accessible only by boat or aircraft, as a result of road access
- Decline in Moody's Marina's north shore winter fuel business, because north shore residents would be able to drive to Dillingham for less expensive fuel and/or the Dillingham fuel truck could deliver fuel to the north shore
- Possible quicker growth and development as a result of the project

**Table 3. Summary of Secondary and Cumulative Impacts**

	BUILD ALTERNATIVES		NO-BUILD ALTERNATIVE	
	Secondary Impacts	Cumulative Impacts	Secondary Impacts	Cumulative Impacts
<b>Social/Community Lifestyle/Public Safety</b>	<ul style="list-style-type: none"> <li>Increased convenience and reliability of access to and from the north shore</li> <li>Enhanced community cohesion</li> <li>Perceived enhanced public safety</li> <li>Improved access to medical facilities in Dillingham</li> <li>Opportunity to consolidate government services</li> <li>Increased traffic on north shore</li> <li>Minor decrease in quality of life because of the minor increase in traffic and associated dust and noise</li> </ul>	<ul style="list-style-type: none"> <li>Increased desirability of living in Aleknagik because of proposed project along with hard surfacing of the Dillingham-Aleknagik Road</li> <li>Increase in demand for homes and property</li> <li>Potential increase in number of students attending the Aleknagik elementary school or requiring transportation to the high school in Dillingham</li> <li>Possible increase in the number of visitors to Aleknagik because of recent recreational improvements and proposed floatplane base</li> </ul>	<ul style="list-style-type: none"> <li>Continued difficulty in traveling between the north and south shores</li> <li>Continued duplication of city services</li> <li>Continued perceived safety concerns with no alternate mode of transportation available for crossing the lake</li> <li>No increase in the potential for vandalism and trespassing</li> <li>No decrease in the quality of life</li> </ul>	<ul style="list-style-type: none"> <li>Same as build alternatives</li> <li>Continued fragmentation of the community and perceived safety concerns</li> </ul>
<b>Natural Environment</b>	<ul style="list-style-type: none"> <li>Decrease in the potential for fuel spill in Lake Aleknagik from transfer of fuel between vehicles and boats or during boat transportation</li> <li>Possible erosion and sedimentation if fishermen and other users create a trail on the steep banks from the new bridge access road to the Wood River (mitigated by a path to the river banks)</li> </ul>	<ul style="list-style-type: none"> <li>Minor loss of habitat for wildlife (uplands and wetlands)</li> </ul>	<ul style="list-style-type: none"> <li>Continued possibility of fuel spill in Lake Aleknagik or the Wood River from transporting fuel in boats and on barges</li> <li>No risk of erosion or sedimentation from people accessing the Wood River at the proposed bridge site</li> </ul>	<ul style="list-style-type: none"> <li>Same as build alternatives</li> </ul>
<b>Public Recreation/Tourism</b>	<ul style="list-style-type: none"> <li>Decreased pressure on Aleknagik State Recreation Site (SRS) parking lot</li> <li>Slightly diminished appeal of the Mission Lodge to some clients because it is no longer accessible by only boat or aircraft</li> <li>No impact on the Wood-Tikchik State Park</li> </ul>	<ul style="list-style-type: none"> <li>Possible increase in the number of visitors to the Aleknagik SRS and traveling by boat to the Wood-Tikchik State Park</li> <li>Possible increase the number of visitors to Aleknagik and traveling by car to the north shore</li> <li>Slightly diminished appeal of the Mission Lodge to some clients because of the increased number of visitors to Aleknagik</li> </ul>	<ul style="list-style-type: none"> <li>No impact on the Wood-Tikchik State Park or the Mission Lodge</li> <li>Possible overcrowding at the Aleknagik SRS parking facility</li> </ul>	<ul style="list-style-type: none"> <li>Possible increase the number of visitors to the Aleknagik SRS and traveling by boat to the Wood-Tikchik State Park</li> <li>No impact on the Mission Lodge</li> </ul>
<b>Private Land Use and Development</b>	<ul style="list-style-type: none"> <li>Increased rate of development of north shore land</li> <li>Increased demand for land on the north shore</li> <li>More impacts on existing subdivisions associated with Options A and C than Option B (from traffic levels)</li> <li>Decrease in the desirability of land on the North shore to seasonal users who wish to own property that is inaccessible by road</li> <li>Potential increase in vandalism or trespassing on private property</li> </ul>	<ul style="list-style-type: none"> <li>Increased development of private land on north and south shores</li> </ul>	<ul style="list-style-type: none"> <li>Continued development of north shore land, although it may develop more slowly without the proposed project</li> <li>No decrease in the desirability of land on the north shore to seasonal users who wish to own property that is inaccessible by road</li> <li>No increase in the potential for vandalism and trespassing on private property</li> </ul>	<ul style="list-style-type: none"> <li>Continued development of land on both the north and south shores, although it may develop more slowly on the north shore without the proposed project</li> </ul>
<b>Local Government Services</b>	<ul style="list-style-type: none"> <li>More convenient and reliable access to north shore, making it easier to supply government services</li> <li>Opportunity for consolidation of government services</li> <li>Improved Village Public Safety Officer service</li> <li>More convenient and less expensive medical evacuations</li> <li>Increased road and bridge maintenance costs to the city</li> <li>Enhanced safety and convenience for students and staff at the school</li> </ul>	<ul style="list-style-type: none"> <li>Potentially more demand for City services with increased development on north and south shores</li> <li>Possible increase in school funding if enrollment increases</li> <li>Increased demand for government services with continued development of land on both the north and south shores, although the demand may increase more slowly without the proposed project</li> </ul>	<ul style="list-style-type: none"> <li>Continued duplication of government services</li> <li>Continued inconvenient and unreliable transportation of school children across Lake Aleknagik</li> <li>Continued difficult transportation of sick and injured from north shore to medical facilities in Dillingham</li> </ul>	<ul style="list-style-type: none"> <li>Increased demand for government services with continued development of land on both the north and south shores, although the demand may increase more slowly without the proposed project</li> <li>No opportunity for consolidation of City services</li> </ul>
<b>Economy</b>	<ul style="list-style-type: none"> <li>Increase in temporary jobs associated with building the bridge and access roads</li> <li>Increased opportunities for development of businesses on the north shore</li> <li>Increased opportunities for jobs in Dillingham for north shore residents</li> <li>Decreased cost for fuel and building materials on north shore</li> <li>Possible reduced bookings at Mission Lodge, which could lead to less tax revenue for Aleknagik</li> <li>Possible decrease in demand for Moody's fuel by north shore residents</li> </ul>	<ul style="list-style-type: none"> <li>Increased desirability of living in Aleknagik and commuting to Dillingham for work</li> <li>Bulk fuel tank project and bridge could reduce the cost of fuel to Moody's Marina</li> <li>Decrease in cost of transporting building materials, which could result in increased home construction, repairs, and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>No temporary increase in employment opportunities during construction</li> <li>Continued inconvenient and unreliable access to jobs in Dillingham</li> <li>Continued limited employment opportunities for North shore residents</li> <li>Continued high cost of fuel and building materials</li> <li>No adverse impact to Moody's Marina or the Mission Lodge</li> </ul>	<ul style="list-style-type: none"> <li>Minor economic benefits as described for the build alternatives may be realized by south shore residents due to the planned improvements to the Dillingham-Aleknagik Road (no benefits to north shore residents)</li> </ul>
<b>Subsistence</b>	<ul style="list-style-type: none"> <li>Easier access to north shore subsistence areas for south shore and Dillingham residents resulting in increased competition for subsistence resources</li> </ul>	<ul style="list-style-type: none"> <li>Continued development on the north shore may increase competition for subsistence resources</li> </ul>	<ul style="list-style-type: none"> <li>No increase in competition for subsistence resources</li> </ul>	<ul style="list-style-type: none"> <li>Same as build alternatives, except that the rate of increase may be slower</li> </ul>
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>Increased vulnerability of site DIL-064 from increased foot traffic by residents, fishermen, and tourists in the vicinity of the southern landing of the bridge</li> </ul>	<ul style="list-style-type: none"> <li>Continued increase in cultural resource vulnerability because of facilitated access and development</li> </ul>	<ul style="list-style-type: none"> <li>Decreased likelihood of impacts to DIL-064 because of the lack of access</li> </ul>	<ul style="list-style-type: none"> <li>Same as build alternatives, but to a lesser extent on the north shore</li> </ul>



- Increase in competition for subsistence resources in areas traditionally used by north shore residents if south shore and Dillingham residents cross the bridge to access subsistence resources
- Possible decrease in water quality from storm water runoff. This would be mitigated through the incorporation of BMPs for erosion and sedimentation control into the project. No deicers would be used for winter maintenance, so these pollutants are not of concern.

Some social impacts are difficult to classify as either beneficial or adverse, because people in and near the community have different perspectives. For example, the proposed project would likely increase demand for land on the north shore. Although this development would occur with or without the project, it is likely to occur more quickly as a result of the project. Some residents look forward to new development, and some are opposed. Also, for residents on the south shore or in Dillingham, the proposed project would provide easier access to north shore subsistence harvest areas. Aleknagik residents on the north shore who currently harvest in traditional areas with little competition could experience increased competition from newcomers (subsistence users from Dillingham and the south shore of Aleknagik) who take advantage of the improved access to the north shore.

These changes in subsistence use patterns are not expected to result in significant impacts to Dillingham, south shore, or north shore residents or subsistence resources.

No secondary impacts on access to or pressure on the Wood-Tikchik State Park are anticipated as a result of the project. The primary access to Wood-Tikchik State park is by aircraft or boat. The project as proposed is not likely to change these modes of access. Population and associated development increases will occur regardless of the project, although the project may accelerate the rate of settlement. If new residents increase pressure on the park, it will not be as a result of the project. See Appendix A for further discussion.

Impacts to the natural environment during construction and afterwards would be mitigated by permit stipulations and standard Department construction practices.

The preferred alternative would have the same secondary and cumulative impacts as those described above.

The No-Build alternative would result in little or no change in current social conditions or trends. Residents and visitors would continue to experience difficulty in traveling between the two parts of the community for visiting, school activities, meeting attendance, and participating in other events. The north shore would remain relatively isolated, with no vehicle traffic from the south shore. City services would continue to be duplicated, and employment opportunities for north shore residents would continue to be limited. Current public safety concerns would not change, and the benefits to public safety from implementing the proposed project would not be realized. However, the potential for an increase in vandalism and trespassing as a result of the proposed project would not occur.

Without the proposed project, the possibility of a fuel or other contaminant spill would not change because fuel would continue to be barged up the Wood River or hauled across the lake by boat or snowmobile. Vegetation and wildlife adjacent to the road corridors would not be disturbed by increased traffic, noise, and dust. Activities at Mission Lodge would likely remain as they have in the recent past. Customers would continue to come for the fishing opportunities in the Wood River Lakes System and other attractions, as well as for the setting of the lodge in a native community accessible only by boat or aircraft. Parking at the Lake Aleknagik SRS may become a problem, with north shore residents and visitors competing for parking spaces. Land on the north shore may develop more slowly without road access.

#### **4.30 Section 4(f)**

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303) states that the Secretary of Transportation may not approve the use of land from a significant publicly owned park, recreation area, or wildlife area or any significant historic site for a transportation project unless (1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

A letter from the SHPO dated February 8, 2001, indicates concurrence with FHWA's determination that no historic properties would be affected by the project. None of the alternatives would affect Section 4(f) properties. There would be no direct or indirect use of the



Wood-Tikchik State Park, which is the closest publicly owned park. The southern boundary of the Wood-Tikchik State Park is approximately 15 km (9 miles) north of Aleknagik.



## 5.0 PERMITS AND APPROVALS

The following permits and approvals are required for the proposed project. An Application for Multiple Agency Authorization for Use in Alaska is included as Appendix M. Because laws and regulations change, this list may change before construction.

- USACE Section 404/10 Permit
- USCG Section 9 Bridge Permit
- ADNR ROW Permit
- OPMP Coastal Consistency Certification
- ADEC Section 401 Water Quality Certification
- OHMP Title 41 Fish Habitat Permit
- EPA National Pollutant Discharge Elimination System Construction General Permit
- Contractor-specific permits in accordance with Department standard specifications

The development of the EA's Purpose and Need and Range of Alternatives was conducted within the framework of the *Interagency Working Agreement to Integrate Section 404 and Related Permit Requirements into the National Environmental Policy Act*. This formal agreement established procedures whereby the requirements of a project's USACE Section 404 wetland permit could be integrated within the NEPA analysis. These procedures included obtaining the concurrence of participating state and federal agencies on specific concurrence points throughout the development of the EA (purpose and need, range of alternatives, and preferred alternative). When this project was started, the merger agreement was in place. Concurrences from participating agencies on the purpose and need and range of alternatives were received (see Section 6.0, Comments and Coordination). The merger agreement has since expired and is no longer applicable to Department projects. While close coordination with the agencies was maintained, concurrences on the remaining step (preferred alternative) were not acquired.

No permits, certifications, or clearances would be required for the No-Build alternative.



## **6.0 COMMENTS AND COORDINATION**

This section describes the public and agency outreach conducted for this project. The purpose of the public and agency outreach is to determine issues, concerns, and alternatives that should be evaluated in the EA. Initial outreach is documented in the Scoping Summary Report dated January 1999 (Appendix D). Comments and issues identified by agencies during defined concurrence steps are also documented. For completeness, these efforts are summarized in this section, as are all outreach efforts since that report was published.

### **6.1 Agency and Public Scoping**

#### **6.1.1 Agency Scoping**

The initial agency scoping consisted of a field trip to Aleknagik and information letters soliciting input. In September 1998, representatives from interested state and federal agencies and Department designers, engineers, and environmental staff flew to Aleknagik to familiarize themselves with the project. The field visit was followed by a letter describing the conceptual project and its purpose and need (Appendix D). This letter solicited comments from agencies on preliminary design, environmental considerations, permitting requirements, and alternative selections. Comments received are summarized in Section 6.2 and included in the Scoping Summary Report (Appendix D). An agency meeting was held on March 1, 2001. A meeting was also held with ANL and Bristol Bay Native Corporation representatives on April 23, 2001.

#### **6.1.2 Public Scoping**

Public and interested-party outreach began with notices published in the *Bristol Bay Times* and the *Anchorage Daily News* in early December 1998 (Appendix D). In the notices, the proposed project was described and input and comments were sought. In addition to the published notices, Aleknagik City Administrator Carolyn Smith distributed information to local government and tribal leaders.

Public input was provided in conversations with local residents during the agency field trip in September 1998. The Scoping Summary Report notes that many absentee property owners became aware of the project in mid-December. The formal scoping comment deadline was

December 31, 1998. Copies of correspondence received up through December 1998 were included in the Scoping Summary Report (Appendix D). The issues identified by the public and agencies at that time are summarized in that document, which is provided in the Scoping Summary Report (Department, 1999). Comments received since December 1998 are included in Appendix K.

### **6.1.3 Public Meetings and Other Public Outreach**

In June 1999, formal public meetings were held in Aleknagik and Anchorage to provide resident and non-resident property owners and the general public with an opportunity to provide input by attending the meeting in the most convenient location. The first meeting (June 7, 1999) was held at the Aleknagik Elementary School gym, and the second meeting (June 16, 1999) was at the Department's office in Anchorage. The purpose of the meetings was to provide additional information about the proposed bridge location and access road and to gather public input. These meetings stimulated additional public input, including written comment sheets and a petition sent to State Representative Mary Kapsner opposing the bridge project.

A project newsletter was prepared and distributed by the Department in January 2000 to provide a history of the project, the project timeline, and a summary of the alternatives to be studied.

Outreach activities continued after the Department's consultant, MACTEC, was retained in April 2000. MACTEC worked to expand the mailing list to be as inclusive as possible. Using computer services and known public databases, mailing addresses for property owners and local residents were obtained. The project team researched other interested and affected interests in the Aleknagik area. These groups included permit holders in the Wood-Tikchik State Park, local schools, air carriers, and governmental and tribal entities in the area.

Public notice was published in the *Bristol Bay Times*, *Fairbanks Daily News-Miner*, and *Anchorage Daily News* soliciting contact information for individuals interested in receiving information about this project. The clip-out and mail, fax, or phone-in format yielded additional names for the mailing/contact list. The contact list developed was used in August 2000 to distribute 282 newsletters to interested parties. The newsletter included the project history, purpose and need, the alternative routes under consideration, fieldwork, and schedule for

completion of the EA. Copies of the newsletters, correspondence, and written comments are included in Appendix L.

## 6.2 Summary of Merger Concurrence and Scoping Comments

### 6.2.1 Merger Agencies

Table 4 summarizes the merger agency responses, which are discussed below for the purpose and need and range of alternatives concurrence points.

**Table 4. Merger Agency Responses**

<b>Agency</b>	<b>Scoping Response</b>	<b>Purpose &amp; Need Concurrence Response 1/27/99</b>	<b>Alternatives to be Analyzed Concurrence Response 12/21/00</b>	<b>Alternatives to be Analyzed Concurrence Response 5/15/01</b>
ADEC	√	Non-participation by choice	Non-participation by constraint	Concurrence
ADF&G	√	Non-participation by choice	Nonconcurrence	Concurrence
ADNR	√	Concurrence	Concurrence	Concurrence
NMFS	√	Concurrence	Nonconcurrence	Concurrence
USACE	√	Concurrence	Concurrence	Concurrence
EPA	NR	Non-participation by constraint	NR	Non-participation by constraint
USFWS	√	Concurrence	Nonconcurrence	Concurrence
ADGC	NR	NR	Nonconcurrence	Concurrence
Bristol Bay CRSA	√	NR	Nonconcurrence	Concurrence

NR No response

√ Response received

ADEC Alaska Department of Environmental Conservation  
 ADF&G Alaska Department of Fish and Game  
 ADGC Alaska Division of Governmental Coordination  
 ADNR Alaska Department of Natural Resources  
 CRSA Coastal Resource Service Area  
 EPA U.S. Environmental Protection Agency  
 NMFS National Marine Fisheries Service  
 USACE U.S. Army Corps of Engineers  
 USFWS U.S. Fish and Wildlife Service

### **6.2.1.1 Purpose and Need Concurrence**

All agencies signatory to the merger agreement received Concurrence Forms for the Purpose and Need concurrence step. The ADNR, USACE, and NMFS concurred with the Purpose and Need statement. The ADF&G and ADEC responded with “non-participation by choice,” which indicates that issues can be resolved at the next stage of project development. ADF&G’s response included a memorandum noting that the agency did not have expertise to evaluate purpose and need for the project and commenting that ADF&G had fish and wildlife-related concerns with the project (these concerns are detailed below in Section 6.2.1.3). The EPA responded with “non-participation by constraint,” indicating that the agency does not have the ability to participate in the process at this point. The Bristol Bay CRSA did not respond, and the ADGC was not contacted because the Bristol Bay CRSA was acting under ADGC authority as the coastal district.

In telephone conversations with Department personnel, the USFWS indicated support of ADF&G’s comments and stated interest in types and acreage of wetlands impacted by access roads and secondary impacts of connecting the north shore community to the road system. The ADNR indicated a concern if the bridge was located across the lake at Moody’s Point, which would adversely affect the ADNR boat launch and day use area at that location. Copies of the correspondence, including concurrence forms, are provided in Appendix L.

### **6.2.1.2 Range of Alternatives Concurrence**

The merger agencies were sent Alternatives to be Analyzed concurrence letters on December 21, 2000. The ADF&G, NMFS, USFWS, Bristol Bay CRSA, and ADGC responded with “nonconcurrence” on the alternatives to be analyzed. The USACE and ADNR concurred with the alternatives to be analyzed, and ADEC responded with “non-participation by constraint.” The EPA did not respond.

Because a majority of the merger agencies did not concur with the original Alternatives to be Analyzed letter, a meeting was held to discuss agency concerns, and a revised Alternatives to be Analyzed concurrence letter was sent on May 15, 2001. All agencies concurred with the revised Alternatives to be Analyzed except for the EPA, which responded with “non-participation by



constraint.” Copies of the correspondence, including concurrence forms, are provided in Appendix L.

### **6.2.1.3 Summary of Issues Raised**

Issues identified by the agencies are summarized below.

#### *USCG*

- Ensure that navigation on the Wood River would not be hindered by the proposed structure.

#### *USACE*

- Obtain permits under Section 10 of the River and Harbors Act of 1899 and Section 404 of the Clean Water Act.
- Assess the total project, including the approach roads to the bridge, and practicable alternatives and steps to minimize potential impacts.

#### *ADF&G*

- Consider a complete clear-span option that has no project features, including abutment toe protection, located below the ordinary high water level of the river.
- Address the material quarry site(s) and methods, routes, and time of year for movement of fill or surfacing material.
- Address types of breakup flows and ice movement that could be experienced, particularly if instream pilings are used to support the bridge.
- Address long-term impacts caused by permanent structures in the channel in that reach of river.
- Identify methods/techniques/designs that will be used to prevent erosion and sedimentation of the river, during and after construction.
- Address long-term surface-water runoff, sediment control, and pedestrian access.

- Design plans so there is no encroachment into the river that would narrow the existing channel.
- Include, if possible, a bridge-mounted fish viewing structure.

In addition, the ADF&G requested inclusion of the site-specific information listed below in the design plans. This information is presented in the *Preliminary Hydraulics and Hydrology Report* for the Wood River Bridge (Appendix J) or will be obtained before completion of the final design for the project.

- Existing channel cross-section measurements showing streambed contours, water depth, wetted perimeter, and cross-section area.
- Elevation of the ordinary high water line and the width of the floodplain.
- Composition of the river substrate, especially at instream project stations that might be used to install pilings to form piers for bridge support.
- Water velocity measurements taken on ebb and flood flows for the neap and spring tides to determine the range of velocities in the existing channel and the potential for scour if piles are used to support the bridge.
- Calculations or measurements of the 10-, 25-, and 50-year flood events.

#### *USFWS*

- Address water quality, fish, and fisheries habitat, because the Wood River and Lake Aleknagik provide high-quality habitat for anadromous and resident fish.
- Ensure that good management practices are used to prevent sediment erosion of the hillside that could flow into the river and degrade fish habitat.
- Address secondary impacts of connecting the north shore to the road system (community growth and expansion, likely areas for community growth, vegetation clearing, erosion, and bank trampling along the river and lake).

- Address concern about sediment transport to the Wood River from construction activities, road and bridge runoff, as well as chemical deicers used during maintenance.
- Avoid wetlands, if possible, and identify measures to mitigate impacts to wetlands that cannot be avoided.
- Avoid narrowing the existing river channel.
- Address impacts to high-interest wildlife species.
- Address impacts at the material quarry site(s) and from movement of quarry material.

#### *Bristol Bay CRSA*

- Address prevention of erosion during construction, pedestrian access to the river, bridge design and the effects on spawning salmon, commercial fishing boat access to Lake Aleknagik, and disruption of a smelt spawning area.
- Address an overlook for salmon viewing.

#### *NMFS*

- Address erosion control measures during construction and throughout the life of the project. Design features should include specifications that prevent bridge approaches from draining down the road and into the river, retention of a wide riparian buffer zone, and an aggressive revegetation plan.
- Minimize fill within the floodplain. No roads should be built in the floodplain except to cross the river.
- Avoid filling wetlands to the extent possible.
- Maintain adequate cross drainage and retain natural drainage patterns.

## **6.2.2 Other Agencies and the Public**

The Bristol Bay Native Corporation, the City of Aleknagik, and the Aleknagik Community School Committee expressed support for the project. The USCG requested that the bridge provide for reasonable navigation needs, that is, clearance for the larger vessels supplying the Wood River and Lake Aleknagik.

### **6.2.2.1 Summary of Issues Raised**

Table 5 summarizes the issues raised during scoping by residents, non-resident property and business owners, and the general public. The table has been organized to identify the issues supporting and not supporting the project. To allow presentation in tabular form, the comments have been edited and the full text is included in the Scoping Summary Report (Appendix D).

## **6.3 Agency and Public Review of EA**

The November 2003 Aleknagik Wood River Bridge EA was made available for public and agency review on December 15, 2004. The public comment period extended 35 days, beginning December 19, 2003, and ending January 23, 2004. A notice of availability of the EA and public hearing dates were published in the *Anchorage Daily News* on December 15, 2003, and January 8 and 15, 2004 and the *Bristol Bay Times* on December 18, 2003, and January 1 and 8, 2004. A project newsletter that summarized the project alternatives, informed the public on how to obtain a copy of the EA and how to comment on the EA, announced the public hearing dates, and requested public input was sent to everyone on the project mailing list during the week of December 15, 2003. The EA was made available for review at the City of Aleknagik offices in Aleknagik, the Z.J. Loussac Library in Anchorage, and on-line through the Department's website. In addition, copies of the EA were sent to current agency representatives for the project and individuals that requested copies.

Two public hearings were held during the comment period to discuss the EA: one in Aleknagik on January 12, 2004, and one in Anchorage on January 15, 2004.

**Table 5. Summary of Public Comments Received During Scoping**

Issue	Comments in Support of the Project	Comments in Opposition to the Project or the Bridge Location
<b>Land Use/Ownership</b>	<ul style="list-style-type: none"> <li>• Private property will increase in value with the new access</li> <li>• All land easements are currently available (Wood River Option)</li> </ul>	<ul style="list-style-type: none"> <li>• Land owners developed on the north shore knowing there was no bridge/road access, and could have developed on the south shore with no associated problems</li> <li>• The purchase of land from former Governor Hammond’s mother-in-law has the appearance of impropriety</li> <li>• Private landowners in the vicinity of the Mission Lodge will be disrupted</li> <li>• A road into Wood-Tikchik park could only result in substantial degradation to the park</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>• The bridge will bring development to this part of Alaska</li> <li>• There needs to be road access to the Wood-Tikchik State Park</li> <li>• City services such as post office, City Office, City shop, various equipment (loaders, dump trucks, forklift, dozer, etc.), fuel supply, Village Public Safety Officer office, and airport will be more accessible to all residents</li> <li>• The north shore dock can be utilized better</li> <li>• Congestion at the south shore public access point will be greatly reduced</li> <li>• North shore residents will be able to commute to Dillingham without the hazards of crossing the lake</li> <li>• Project will help out north shore residents and enhance the community</li> <li>• The 2 new Dept. of Housing and Urban Development subdivisions are located away from the city center, on dead-end roads; one on the north shore and one on the south shore. Linking them via bridge access roads would help make them more of the community</li> <li>• Provide access to the airport for more people</li> <li>• Provide safe access to schools</li> <li>• Boats get frozen and children get cold</li> <li>• If the school boat incurs an accident, the survival of small children in that cold water would be jeopardized in a matter of minutes. The liability cost of such an accident dwarfs the cost of bridge construction.</li> <li>• People have drowned</li> <li>• People who don’t have skiffs and now have to find rides could walk or drive across the bridge</li> </ul>	<ul style="list-style-type: none"> <li>• The south shore access road goes through two subdivisions, and is a safety concern for the children (bike riding, walking, and other types of recreation)</li> <li>• Loss of enjoyment of waterfowl using the pond in the Chythlook subdivision (if they are disrupted by traffic noise and dust)</li> <li>• Increase in traffic and access to private lands by the public is unacceptable. Vandalism and theft will likely increase</li> <li>• Increase in traffic on the north shore, disrupt peace</li> <li>• Will totally destroy current and past lifestyles in the village</li> <li>• Increase alcoholism because people from north shore will drive to Dillingham to get liquor and then drive back to Aleknagik</li> <li>• Alcohol has contributed to some of the deaths, and deaths will likely continue to occur in the future even with the bridge</li> <li>• Route the access roads through undeveloped areas, not through existing subdivisions</li> </ul>

**Table 5. Summary of Public Comments (continued)**

ISSUE	Comments in Support of the Project	Comments in Opposition to the Project or the Bridge Location
<b>Economic</b>	<ul style="list-style-type: none"> <li>• Businesses that may have been impossible without access will now have chance</li> <li>• The city would only have to manage one landfill</li> <li>• North shore residents would have access to fuel oil truck and fuel would be cheaper</li> <li>• North shore residents would be able to drive to their homes and would no longer have to double handle gas and stove oil</li> <li>• Create efficiency of city services</li> <li>• Contribute to the health and economic viability for the community</li> </ul>	<ul style="list-style-type: none"> <li>• A large private development corporation is motivated to have the State of Alaska pay the cost of developing infrastructures needed to support private commercial development.</li> <li>• A bridge will negatively affect the future visits of former visitors</li> <li>• It would be cheaper to provide housing on the south shore for affected people than to build a bridge</li> <li>• Landowners in the Mission Lodge area will fight the Wood River crossing, increasing the cost and causing lengthy delays</li> <li>• High cost for a bridge that would serve only a few</li> </ul>
<b>Environmental/ Visual</b>	<ul style="list-style-type: none"> <li>• A bridge would provide easier servicing of septic tanks and well treatment, and in moving technicians in and out of the area.</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic noise and dust will affect the waterfowl nesting and migration in pond in the Chythlook Subdivision</li> <li>• Bridge will have a negative impact on spawning salmon in Wood River and Mission Creek</li> <li>• Project will substantially impact the river</li> <li>• Not esthetically pleasing. Visual impact would be much greater than at Moody's</li> <li>• Would impact forested undeveloped land</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• Crossing site at the Wood River is the only feasible location</li> <li>• A bridge at Moody's Point would adversely affect the boat launch and day use area being developed</li> </ul>	<ul style="list-style-type: none"> <li>• The bridge crossing location should be a village site, not where it will disrupt the Mission Lodge and subdivision</li> <li>• Should be at Moody's Point to concentrate the impact of the road on already developed land</li> <li>• Aleknagik Lake system will be destroyed if a bridge is constructed over the Wood River</li> </ul>

### **6.3.1 Summary of Comments Received on EA**

The Department received numerous comments on the EA. Comments were received by fax, written letters, and emails. A spreadsheet that presents all formal public and agency comments and responses to comments is included in Appendix E. Copies of agency letters are also included in Appendix E. All comments were considered to help the Department select the preferred bridge type and access road alignments. The following section summarizes the substantive issues raised during the review of the EA.

### **6.3.2 Summary of Agency Comments**

Issues identified by agencies are summarized below.

#### *USACE*

- USACE concurs with project.
- Requests submission of a Section 404 Wetlands Permit application for the project.

#### *OPMP*

- Requests submission of a Coastal Project Questionnaire and Certification Statement for project at the time state and federal permit applications are ready for submission.

#### *OHMP*

- The OHMP will only approve a clear span-bottomless structure (bridge or bottomless culvert) at Mission Creek because the crossing location is in a sockeye salmon spawning area. (This comment was modified during a meeting with OHMP and the Department on February 12, 2004, to include the possibility of a Tier 1 stream simulation culvert once better stream data are gathered during final design).
- The OHMP would prefer to see a barge-mounted effort rather than a temporary work bridge for construction of the main bridge.

- The *Preliminary Hydraulics and Hydrology Report* incorrectly assumes the governing water elevation is the mean high water elevation, not the observed high water elevation. The governing water elevation shall be the higher elevation of the two.
- It is unclear whether the filling or narrowing of the floodplain has been addressed.
- The OHMP recommends that the steep slope river access at the Wood River Bridge be of an elevated, light-penetrating design that will maintain vegetation growth underneath for further protection against erosion, sedimentation, and bank damage.

#### *NMFS*

- Based on potential impacts to living marine resources including EFH, Bridge Type B is NMFS' preferred alternative.
- NMFS agrees with the determination in the preliminary EFH assessment (Appendix K) that the proposed activity may adversely affect EFH.
- NMFS recommends that the Department continue to coordinate with them as project design and information become available to address specific issues, such as construction windows, to minimize impacts to living marine resources.
- NMFS enclosed a summary document titled "Potential Impacts to Fish from Pile Driving" that summarizes impacts to fish and EFH from pile driving and removal activities. The summary document was prepared by NMFS staff to inform resource agencies and others about the potential impacts of pile driving and possible means of mitigating those impacts. This information was incorporated into the revised EA.

### **6.3.3 Summary of Public Comments**

Issues identified by Aleknagik residents, non-resident property and business owners, and the general public are summarized below. Some of these issues were raised during the public hearings. In addition to the comments summarized below, a joint resolution by the councils of the City of Aleknagik, Aleknagik Traditional Council, and Board of Directors of Aleknagik Natives Limited requesting support from the U.S. Congress, state legislature, and the Department



for the project was received. The resolution identifies access road Alignment 1 on the south shore, access road Option A on the north shore, and Bridge Type B (clear span bridge) as the community's preferred alternative. The resolution is provided in Appendix B.

#### *General Access Road Issues/Concerns*

- Any route chosen should closely border local land holdings so individuals can economically benefit from the project.
- Roads should not go through subdivisions because of kids playing and people driving fast.
- Concerns expressed about the relocation of the Carty residence under south shore. Alignments 1 and 2. Asked to consider the cost of realigning the road slightly in this area vs. relocating the home.
- Concerns expressed about dust impacts on air quality, visibility, and wetland wildlife.

#### *North Shore Option A Issues/Concerns*

- Residents in Wood River Heights subdivision concerned about impacts to spring water supply and wells.
- Wood River Heights residents concerned about impacts to wetlands and lot owners from access road Option A and feel the impacts from this option have been understated.
- Concerns about construction of Option A and impacts to Wood River Heights residents and their water supplies because of the grade changes in the subdivision area.
- Opposition of Option A expressed because Wood River Heights residents have not been in support of project and the road is currently a dead-end with very little traffic.
- Issue that a home in Wood River Heights is closer to the proposed road than the residences proposed for relocation under Options B and C. Requests that the Department revise EA to reflect this relocation or provide an explanation of why Option B and C requires relocation of a home and not Option A.

- Concerns expressed about noise impacts from Option A.
- Support expressed for Option A because it would avoid relocation of home and would be more economical than other options.

*North Shore Option B Issues/Concerns*

- Support expressed for Option B because it would have the least impact on wetlands.

*North Shore Option C Issues/Concerns*

- Opposition of Option C expressed because it requires the relocation of a home.

*South Shore Alignment 1 Issues/Concerns*

- Concerns expressed about dust and noise impacts from Alignment 1.
- Support for Alignment 1 expressed.

*South Shore Alignment 2 Issues/Concerns*

- Support expressed for Alignment 2 because it would put road farther away from Chythlook Subdivision.

*General Bridge Issues/Concerns*

- Commenter noted that ice jams form where the bridge is located. Suggested that the Department look at the conditions in spring when the flood tide reverses all the way into the lake. It can cause house-sized chunks of ice that have caused serious damage at the boathouse and the boats stored above water line. The water spreads over the land when there are very high tides at Bristol Bay. The ice gets jammed up at the narrows of the river and backs up the water and floods out on land on both sides of the lake in the vicinity of Aleknagik.
- Concern expressed on whether pedestrians, all-terrain vehicles, and four wheelers would be able to use the bridge.

- Spring runoff causes lake levels to rise 5 to 6 feet. When Dillingham has 23-foot tides would be a good time to check the water level. At spring high water, bigger boats have to go near the river bank to avoid hitting powerlines over the river.

#### *Bridge Type A [3-Pier] Issues/Concerns*

- Needs to be clarified in EA why Bridge Type A is the Department's preferred alternative.

#### *Bridge Type B [Clear Span] Issues/Concerns*

- Support expressed for Bridge Type B because clear span design would avoid ice jam problems and would not impact spawning and migrating fish.
- Would avoid essential fish habitat.

#### *Safety and Lake Crossing Issues*

- Numerous comments noted the dangers of crossing the lake.
- Project would eliminate the need for South Shore residents to provide last-minute rides across the lake at inconvenient hours of the day.
- Trespassing is currently an issue when parking to cross the lake in the summer.
- Insurance for school transportation is currently an issue. Small-horsepower motors on boats are used to keep insurance costs down.

#### *Other Miscellaneous Concerns/Issues*

- Project would provide infrastructure for the delivery of goods, tourists, and future resource development projects.
- Community expressed concerns over the lack of funding for the project and the delay in the environmental document.
- Questions about who would maintain the bridge and access roads and how they would be maintained.

- Some commenters indicated that they did not receive project notices or were not contacted during specific phases of the project.
- Concern expressed that other access road routes need to be considered that would be better for the long term; more planning needed.
- Alternative route proposed for north shore that stays on the east side of Mission Creek, passes around the outside of the landing strip, then proceeds west until connecting with Peter Krause Sr. Drive.
- Property values on north shore will increase.
- A more aggressive and open communication of issues with stakeholders is warranted. Request made for the Department to send out project information to each box holder and send an interpreter out for another meeting to get the community to understand the project concerns.
- Questions asked about how and who makes the decision on what alternatives to construct.

#### **6.4 Agency and Public Review of Revised EA**

Following the public comment period and public hearings in December 2003/January 2004, the Department selected access road Alignment 1 on the south shore, access road Option C on the north shore, and Bridge Type A (three-span steel bridge) over the Wood River as its preferred alternative. Because the EA distributed in December 2003 did not identify the preferred alternative, the EA was revised and published in April 2004. The Department announced the availability of the revised EA in a postcard on May 12, 2004, and published a public notice in the *Bristol Bay Times* and the *Anchorage Daily News* on May 20, 2004. The notices announced the 30-day public comment period, starting on May 21, 2004, and ending on June 19, 2004, and provided an option for a public hearing upon request. The deadline for requests for a formal public hearing was June 3, 2004. No requests for a public hearing and no public comments were received.

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<http://waterdata.usgs.gov/nwis/> An online database providing depth to water or water-surface elevation in wells.





## 8.0 LIST OF PREPARERS

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<b>Mary Leykom</b> B.A. Biology	Document Review	Environmental Analyst 5 years Department; 10 years BLM and USACE
<b>Cindy Ferguson</b> B.S. Civil Engineering	Document Review	Squad Lead 7 years Department; 2 years private sector
<b>Brian Elliot</b> B.S. Microbiology and Environmental Science	Bald Eagle Survey	Environmental Analyst 4 years Department; 1 year ADF&G

## **FIGURES**