

## 5.18 NAVIGATION RESOURCES

This section describes navigation resources and navigable waterways that could be affected by construction and operation of the proposed action and alternatives. Navigable waters are defined by: waters that provide a channel for commerce and transportation of people and goods. Sections 5.2, Water Resources, and 5.6, Fish, identify and assess additional potential impacts to navigable rivers and streams within the proposed Project area.

### 5.18.1 Regulatory Setting

Federal, state, and local agencies regulate project activities that have a potential to impact navigable waterways. The jurisdiction over navigable waters belongs to the federal government rather than states or municipalities. Federal agencies have made navigability determinations regarding waterways throughout the proposed Project area. Navigability determinations are implemented through laws and regulations, as described below.

#### 5.18.1.1 Federal Regulations

##### ***United States Coast Guard***

The United States Coast Guard (USCG) authorizes and issues permits for construction of bridges and causeways across navigable waterways in accordance with the General Bridge Act of 1946 (33 United States Code [U.S.C.] 525 *et seq.*) and Section 9 of the Rivers and Harbors Act (33 U.S.C. 401). U.S. navigable waterways, as they pertain to the USCG permitting process, are defined in 33 Code of Federal Regulations (CFR) Part 2.05-25, and include:

- Territorial seas of the United States;
- Internal waterways of the United States that are subject to tidal influence; and
- Internal waterways of the United States not subject to tidal influence that:
  - Are or have been used, or are or have been susceptible for use, by themselves or in connection with other waterways, as highways for substantial interstate or foreign commerce, notwithstanding natural or man-made obstructions that require portage, or
  - A governmental or non-governmental body, having expertise in waterway improvement, determines to be capable of improvement at a reasonable cost (a favorable balance between cost and need) to provide, by themselves or in connection with other waterways, highways for substantial interstate or foreign commerce.

This regulatory definition of navigability has been expanded by legal precedent to include historic and modern use for recreation and tourism (e.g., fishing or sightseeing) or by inflatable rafts (*Alaska v. United States*, 662 F.Supp.455 [D. Alaska 1986]; *Alaska v. Ahtna, Inc.*, 892 F.2d 1401 [9th Cir. 1989]).

Bridges and causeways over waterways meeting the definition of navigable cannot legally be constructed without prior USCG approval of the plans for and locations of such structures. The USCG has stated that certain crossings of waterways and their side channels discussed in this chapter would require individual bridge permits pursuant to Section 9 of the Rivers and Harbors Act. The USCG anticipates permits would be required for aerial pipeline crossings, permanent access road vehicle bridges, and temporary construction/detour bridges. Pipelines under the waterways, although not requiring permits, would still need to be reviewed by the USCG to ensure impacts to navigation are reduced during construction. The final determination of new USCG navigable waterways has not yet been completed.

### ***United States Army Corps of Engineers***

The United States Army Corps of Engineers (USACE) issues Department of the Army (DA) permits to authorize certain structures or work in or affecting navigable waters of the United States pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) (hereinafter referred to as Section 10). Certain structures or work in or affecting navigable waters of the United States are also regulated under other authorities of the DA. These include discharges of dredged or fill material into waters of the United States, including the territorial seas, pursuant to Section 404 of the Clean Water Act (CWA [33 U.S.C. 1344; see 33 CFR part 323]) and the transportation of dredged material by vessel for purposes of dumping in ocean waters, including the territorial seas, pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (33 U.S.C. 1413; see 33 CFR part 324). USACE regulations define navigable waters for the purpose of regulating the discharge of dredge or fill material into these waterways, the USACE definition of navigability is similar to that of the USCG, pursuant to 33 CFR Part 329.4, as follows:

*Navigable waterways of the United States are those waterways that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.*

Section 10 requires approval prior to the accomplishment of any work in, over, or under navigable waters of the United States, or which affects the course, location, condition or capacity of such waters (USACE 1995).

### ***Environmental Protection Agency***

The Environmental Protection Agency (EPA) and the USACE in “Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapanos v. United States* and *Carabell v. United States*” guidance (Rapanos guidance) affirm that the EPA and USACE will continue to assert jurisdiction over “[a]ll waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.” 33 C.F.R. § 328.3(a)(1); 40 C.F.R. § 230.3(s)(1). The guidance

also states that, for purposes of the guidance, these “(a)(1) waters” are the “traditional navigable waters.” These (a)(1) waters include all of the “navigable waters of the United States,” defined in 33 C.F.R. Part 329 and by numerous decisions of the federal courts, plus all other waters that are navigable-in-fact (e.g., the Great Salt Lake, UT and Lake Minnetonka, MN).

Section 312 of the CWA sets out the principal framework for domestically regulating sewage discharges from vessels, and is implemented jointly by the EPA and the USCG. “Sewage” is defined under the CWA as “human body wastes and the waste from toilets and other receptacles intended to receive or retain body wastes”, and includes graywater discharges from commercial vessels (as defined at 33 U.S.C. 1322[a][10]) operating on the Great Lakes. Under Section 312 of the CWA, vessel sewage is generally controlled by regulating the equipment that treats or holds the sewage (marine sanitation devices), and through the establishment of areas in which the discharge of sewage from vessels is not allowed<sup>1</sup>

Under Section 312 of the CWA, the USCG and the State of Alaska may enforce NDZ requirements 33 U.S.C. 1322(k). There are currently no NDZ established in EPA Region 10, which includes the state of Alaska (EPA 2011).

### ***Bureau of Land Management***

Since 1978, Bureau of Land Management (BLM) Alaska has prepared administrative navigability determinations mostly in support of land transfer actions under the Alaska Statehood Act, the Alaska Native Claims Settlement Act, and the Native Allotment Act (BLM 2010). The States’ ownership right to the beds of navigable waters was confirmed by Congress in the Submerged Lands Act of 1953. Since statehood in 1959, the federal courts have determined navigability of less than a dozen unreserved rivers, streams, and lakes in Alaska. The BLM is applying the recordable disclaimers of interest (RDI) process on a systematic basis to navigable waterbodies within Alaska. The State of Alaska is using the RDI process to help confirm the State’s ownership of navigable rivers and lakes, which provides an effective and efficient tool to confirm the State’s ownership of navigable waterbodies (BLM 2010).

#### **5.18.1.2 State Regulations**

The Alaska Constitution contains numerous provisions embracing principles of the Public Trust Doctrine that require the state to exercise authority to ensure that the right of the public to use navigable waters for navigation, commerce, recreation, and related purposes is protected. In Alaska, the Public Trust Doctrine extends beyond those submerged lands to which the state holds title to include all navigable waters. The State’s waters are themselves reserved to the people for common use (ADNR 1996).

The Alaska Constitution (Article VIII, Sections 1, 2, 3, 6, 13, and 14) and Alaska Statutes (AS) 38.05.127 and 38.05.128 contain some of the provisions that are the legal basis for applying the Public Trust Doctrine in Alaska. In Alaska, this doctrine guarantees the public’s right to engage

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<sup>1</sup> Designated as “No Discharge Zones (NDZs).”

in activities such as commerce, navigation, fishing, hunting, trapping, and swimming, while also providing for the protection of areas for ecological study (ADNR 2008).

The Alaska Constitution provides that “free access to the navigable or public waters of the state, as defined by the legislature, shall not be denied to any citizen of the United States or resident of the state, except that the legislature may by general law regulate and limit such access for other beneficial uses or public purposes.” The Alaska Supreme Court has concluded “the provisions in Article VIII [of the Constitution] were intended to permit the broadest possible access to and use of state waters by the general public” (*Wernberg v. State*, 516 P. 2d 1191, 1198-9). The Alaska legislature has broadly defined the navigable and public waters available for public use in AS 38.05.965. Moreover, the legislature has endorsed a broad interpretation of the Public Trust Doctrine in Article VIII of Alaska’s Constitution in finding that:

*Ownership of land bordering navigable or public waters does not grant an exclusive right to the use of the water and any rights of title to the land below the ordinary high water mark are subject to the rights of the people of the state to use and have access to the water for recreational purposes or any other public purposes for which the water is used or capable of being used consistent with the public trust (Sec. 1, Ch. 82, SLA 1985).*

### **Alaska Department of Natural Resources**

Navigable water is defined by Alaska Department of Natural Resources (ADNR) as: water that, at the time the state achieved statehood, was used, or was susceptible of being used, in its ordinary condition as a highway for commerce over which trade and travel were or could have been conducted in the customary modes of trade and travel on water; the use or potential use does not need to have been without difficulty, extensive, or long and continuous. [AS 38.04.062 (g)(1)] (ADNR 2010).

The ADNR issues permits and authorizations governing construction and other activities in or associated with navigable and public waterways pursuant to Alaska law (AS 38.05.128), which mandates:

*A person may not obstruct or interfere with the free passage or use by a person of any navigable water unless the obstruction or interference is: authorized by a federal agency and a state agency; authorized under a federal or state law or permit; exempt under 33 U.S.C. 1344(f) (CWA); caused by the normal operation of freight barging that is otherwise consistent with law; or authorized by the commissioner after reasonable public notice.*

The ADNR is also responsible for determining the need for and reviewing the designs of bridges, culverts, and other drainage structures. The ADNR issues determinations regarding the navigability of waterways as set out in Alaska law (AS 38.05.965), defining navigable water as:

*Any water of the state forming a river, stream, lake, pond, slough, creek, bay, sound, estuary, inlet, strait, passage, canal, sea or ocean, or any other body of water or waterway within the territorial limits of the state or subject to its jurisdiction, that is navigable in fact for any useful public purpose, including but not limited to water suitable for commercial navigation, floating of logs, landing and takeoff of aircraft, and public boating, trapping, hunting waterfowl and aquatic animals, fishing, or other public recreational purposes.*

Alaska law (AS 38.05.127) also mandates the circumstances under which navigability will be determined and safeguards public access to navigable waterways:

*Before the sale, lease, grant, or other disposal of any interest in state land adjacent to a body of water or waterway, the commissioner [of natural resources] shall determine if the body of water or waterway is navigable water or public water. Upon finding that the body of water or waterway is navigable or public water, provide for the specific easements or rights-of-way necessary to ensure free access to and along the body of water, unless the commissioner finds that regulating or limiting access is necessary for other beneficial uses or public purposes.*

ADNR planning documents for the proposed Project area also include guidance regarding bridge clearance on navigable waterways for boats, wildlife, and riders on horseback, and along the banks of navigable rivers and lakes.

Under Alaska Statutes Section 30.50.020: Discharging Ballast Into Navigable Waters:

*A person, whether or not an officer of a vessel, who discharges the ballast of a vessel into the navigable portion or channel of a bay, harbor, or river of the state, or within the jurisdiction of the state, so as to injuriously affect the navigable portion or channel, or to obstruct the navigation of the navigable portion or channel, upon conviction, is punishable by imprisonment in jail.*

At present, the ADNR does not have a complete list of navigable waterways for the State of Alaska (W. Steinberger, Pers. Comm. 2011). A Navigable Waters Web Map was developed under AS 38.04.062; however, it does not identify all navigable waters due to scale and/or data limitations (ADNR 2010). Many streams have not been evaluated, and the streams that have been identified as navigable, may be navigable substantially farther upstream than what is depicted (W. Steinberger, Pers. Comm. 2011). Water not included is not considered either navigable or non-navigable until the commissioner has made a determination as to its navigability at the time the state achieved statehood. In addition, the commissioner may make corrections and alterations of the map to maintain accuracy [AS 38.08.062 (d)] (ADNR 2010).

### **5.18.1.3 Local Agencies**

Alaskan boroughs and cities have the authority to provide for planning, platting, and land use regulations defined by Alaska laws (AS 29.35 and 29.40). For the proposed Project and alternatives, the North Slope, Yukon-Koyukuk, Fairbanks North Star, Denali, and Matanuska-Susitna (Mat-Su) Boroughs as second class boroughs, are required to provide for area-wide planning, platting, and land use regulations. Boroughs may have provisions for local issues related to navigation. The Boroughs may delegate these powers to a city within the Borough (AS 29.40.010).

## **5.18.2 Affected Environment**

### **5.18.2.1 Project Area**

The navigation resources included within the proposed Project area would extend from Prudhoe Bay in the North Slope Borough, south to the Mat-Su Borough near Cook Inlet. The Fairbanks Lateral would diverge from the proposed mainline at approximate Mile Post (MP) 458 (MP FL 0.0) and extend through Yukon-Koyukuk and Fairbanks North Star Boroughs. Major drainages that would be crossed include the Sagavanirktok, Yukon, Tanana, and Susitna. The proposed Project would make 11 freshwater crossings over navigable waterways as determined by the USACE (Table 5.18-1). The Denali National Park and Preserve (NPP) Route Variation would include two crossings within the navigable reach of the Nenana River: an existing pedestrian/bike bridge south of the Canyon commercial area and a buried crossing in the Nenana River south of the McKinley Village.

The proposed Project area also includes the temporary use of three Alaska port sites for the construction period (2 years) of the proposed Project to transport materials and equipment required for proposed Project development. The primary ports include the West Dock at Prudhoe Bay, and the Port of Seward (POS) in Resurrection Bay in Southcentral Alaska. The Port of Anchorage (POA) in Cook Inlet may be used to supplement vessel traffic with the POS.

Typically, the USCG and the ADNR provide a determination of navigability on streams when the design of crossings is complete for review prior to permit approvals. As required by the General Bridge Act of 1946, the AGDC would submit final designs for all stream crossings and crossing locations to the USCG for review prior to the start of construction. Based on this information, the USCG would make a final determination regarding its jurisdiction for particular crossings.

**TABLE 5.18-1 USACE Navigable Waterways within the Proposed Project Area**

Stream Crossing	GNIS Name	Stream Crossing Method	Construction Season	USACE Navigability Determination
ST_57	Kuparuk River	HDD	Winter 2	Navigable – 52.2 miles to Toolik River
ST_266	Yukon River	New bridge, existing bridge, or HDD	Winter 2	Navigable
ST_286	Tolovana River	Open-Cut	Winter 1	Navigable – 135 miles (Entire Length)
ST_314	Chatanika River	HDD	Winter 1	Navigable – 139 miles to Long Creek
ST_329	Tanana River	HDD	Winter 2	Navigable
ST_336	Nenana River	Open-Cut	Winter 2	Navigable – 80 miles to Parks Highway Bridge
ST_352	Nenana River	Open-Cut	Summer 1	Navigable – 80 miles to Parks Highway Bridge
ST_374	Nenana River	Open-Cut	Summer 1	Navigable – 80 miles to Parks Highway Bridge
ST_428	Susitna River	HDD	Winter 2	N/A
ST_444	Willow Creek	HDD	Winter 2	Navigable – 4 miles to Parks Highway Bridge
ST_454	Little Susitna River	HDD	Winter 2	Navigable – 84 miles to the Schrock Rd Bridge

HDD=Horizontal Directional Drilling

### 5.18.3 Environmental Consequences

#### 5.18.3.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be developed and there would be no effects to navigation resources.

#### 5.18.3.2 Proposed Action

##### ***Preconstruction Activities***

The POS is located at the north end of Resurrection Bay in Prince William Sound in Southcentral, Alaska (Figure 5.7-1). The West Dock Port is located approximately 2.7 miles offshore from Prudhoe Bay in the Beaufort Sea (Figure 1.0-1). West Dock is used regularly to support oil development in the Prudhoe Bay area. The POA is located in Upper Cook Inlet, north of Ship Creek at the mouth of the Knik Arm in Southcentral Alaska (Figure 1.0-1). The 2 year construction period would be the only time that port activity would be required for the proposed action. The proposed action would also be further limited to port use during the open water season for West Dock in the Beaufort Sea. Shipping would not occur during periods of sea ice development in the Arctic. The POS would be the planned port of entry for pipe and equipment delivery due to Alaska Railroad Corporation (ARRC) access, available storage, and year round accessibility.

## **Navigation Resource Use by Action Area**

### **Port of Seward**

Thirty-five shipments would be required during the construction phase of the proposed Project to fulfill pipe delivery to the POS (AGDC 2011). The 2010 port calls at the ARRC freight dock at the POS was 200 consisting of 146 freight vessels and 54 cruise ships (ARRC 2011). The expected increase in navigation resource use at the POS ARRC freight dock from proposed Project construction would be approximately 17 percent.

### **West Dock**

Nine shipments would be required to complete delivery of all materials and equipment to West Dock for right-of-way (ROW) and gas conditioning facility (GCF) development at Prudhoe Bay (AGDC 2011). The 2010 port calls for commercial barges at West Dock was 182 vessels (W. Nash, Pers. Comm. 2011). This vessel count does not include barges that land at the beach heads or hovercraft usage to Northstar Island. Navigation resource activity for the proposed Project construction period would increase at the West Dock Port by approximately 5 percent or less compared to 2010 navigation use noted above.

### **Port of Anchorage**

The POA receives approximately 500 port calls annually (POA 2011). These vessels primarily include container ships, dredges, oil barges, tugs, and oil tankers. It is undetermined what navigation resource activity would occur at the POA from the proposed Project. The POA could be used as an additional port site to supplement the 35 vessel shipments expected for the POS.

## **Pollution**

Potential impacts from increased navigation resource use for supply shipments could increase pollution in Alaskan waters from wastewater discharge. Impacts from increased navigational activity on Alaskan waterways would not be expected to adversely affect marine water quality in the port areas noted above. Vessel activity on navigable waterways would be required to comply with federal and state regulations and standards for discharging wastewater.

## **Non-native Invasive Species**

Ballast is water taken onboard ships to add weight to maintain the stability of the vessel when cargo is loaded and discharged when cargo is offloaded at the destination port. Ballast water is a major source for introducing non-native species into aquatic ecosystems where they would not otherwise be present. Non-native species can adversely impact the economy, the environment, or cause harm to human health. Impacts include a reduction in biodiversity of species inhabiting coastal waters from non-native species out-competing native species for food and space. The USCG is the primary federal agency for regulating ballast water discharge; expected adverse impacts on navigable waterways in Alaska would be unlikely.

## ***Pipeline Facilities***

### **Mainline**

The proposed Project ROW extends 737 miles which would include a buried pipeline approximately 5 feet underground for the majority of its length. Six river crossings of the navigable rivers noted above would be installed via HDD and four river crossings would be installed via open cut methods, with three options available for the Yukon River (Table 5.18-1). Impacts to navigation resources from stream crossing methods are discussed below.

### **Construction**

#### ***Open-Cut Stream Crossing Method***

Open-cut methods would be used for 4 of the 11 stream crossings determined to be navigable by the USACE (Table 5.18-1). Pipeline construction using open-cut methods across waterways would be completed in one to three days from initiation and are expected to result in short-term disturbance to navigability along the proposed ROW. Navigability along waterways using open-cut methods would be temporarily impeded by construction materials and equipment during the pipeline construction process. The construction zone would exclude the public for safety and trespass reasons. These impediments would affect navigability along public waterways for all types of water transportation, including boats, float planes, winter dog sleds, motorized vehicles (such as automobiles, all-terrain vehicles, snow machines), and others. During post-construction of the ROW, existing surface hydrology would be maintained to the maximum extent practicable (AGDC 2011). Navigability impacts at these stream crossings would exist only during the construction phase of the proposed Project.

#### ***Horizontal Directional Drill Crossing Method***

The HDD method would be used to cross 6 of the 11 streams determined to be navigable by the USACE (Table 5.18-1). Successful HDD crossings would avoid direct disturbance to aquatic habitat and stream banks and thus would not affect navigation during construction. Impacts to navigation could occur if there is unintended release of drilling fluids due to site geological conditions (a frac-out) or a problem with containment or disposal of drilling muds where in-stream work may be necessary. A contingency plan for HDD would be mandatory and implemented during proposed Project development. The contingency plan should include downstream monitoring for drilling fluid during drilling operations for both open water and ice conditions. It would also include a response plan and mitigation in the event that a release of drilling fluids occurred during both open water and ice conditions.

#### ***Yukon River Crossing Options***

The AGDC has proposed three options for crossing the Yukon River, a waterway determined to be navigable by the USACE. The AGDC would either construct a new aerial suspension bridge across the Yukon River (the Applicant's Preferred Option); cross the Yukon River by attaching the pipeline to the existing E.L. Patton Bridge (Option 2); or utilize HDD to cross underneath the Yukon River (Option 3).

### **New Bridge**

A new pipeline suspension bridge would be built across the Yukon River without permanent structures such as footings installed below ordinary high water. Large vessels would likely be required in the Yukon River during the construction season until the bridge is fully built. These vessels would likely impede other local vessel traffic during the construction phase of the proposed Project. Permanent structures placed across navigable waters would have to be designed and constructed in compliance with federal and state regulations, standards, and specifications for crossings of navigable waterways. The potential impacts to navigation resulting from the proposed pipeline suspension bridge would be temporary and negligible.

### **Existing Bridge**

This option includes utilizing the existing E.L. Patton Bridge on the Dalton Highway. The pipeline would hang below the existing bridge deck on a hanger pipe and no work or placement of structures would occur in the river. Structures crossing navigable waterways would have to be designed and constructed in compliance with federal and state regulations, standards, and specifications for crossings of navigable waterways. The impacts to navigation resulting from use of the existing bridge would be negligible.

### **HDD Crossing**

Another option to cross the Yukon River would be to cross the river via HDD. If feasible, the HDD crossing would be at the same location as the proposed suspension bridge. The feasibility of a HDD crossing is unknown at this time due to limited soil information. Successful HDD crossing would not affect navigation during construction. All activities would occur on land, on either side of the Yukon River. Impacts to navigation could occur as noted above under HDD Crossing Method if there is unintended release of drilling fluids (a frac-out) where in-stream work may be necessary for containment.

### **Impacts by Segment**

#### **GCF to MP 540**

The proposed Project ROW from MP 0 to MP 540 would have seven stream crossings that have been determined to be navigable by the USACE (Table 5.18-1). The HDD crossing methods would be used for the Kuparuk River, the Chatanika River and the Tanana River. The AGDC has proposed three options for crossing the Yukon River noted above. Additionally, two stream crossings would be required at the Nenana River, and one at the Tolovana River which would use open-cut methods (Table 5.18-1). Construction for all the crossings in this segment would occur during the winter construction season except for one stream crossing at the Nenana River (ST\_352).

#### **Fairbanks Lateral**

No USACE listed navigable waters would be crossed by the proposed Project in this segment.

## **Operations and Maintenance**

Impacts to navigation are not expected from operation and maintenance of the proposed Project in any section. The pipeline would meet or exceed the USDOT standards at 49 CFR 192.327 and would be buried below the ground surface at the depth required for safe crossing of waterbodies or on bridges. Bridges would be designed and constructed in compliance with federal and state regulations, standards, and specifications for crossings of navigable waterways.

### **MP 540 to MP 555**

No USACE listed navigable waters would be crossed by the proposed Project in this segment.

### **MP 555 to End**

The proposed Project from MP 555 to the Cook Inlet Natural Gas Liquid Extraction Plant (NGLEP) Facility would have four stream crossings that have been determined to be navigable by the USACE. In this segment, open-cut crossing methods would be used to cross the Nenana River (ST\_374) during the summer. Impacts to navigability from open cut crossings are described in detail above. Navigability along waterways using open-cut methods would be temporarily impeded by construction materials and equipment during the pipeline construction process. Once construction is complete, no impacts to navigability of streams are expected from stream crossings by the proposed Project.

All other stream crossings in this segment would use HDD methods during the winter. Successful HDD crossings would avoid direct disturbance to aquatic habitat and stream banks and thus HDD would not affect navigation during construction. Impacts to navigation could occur if there is unintended release of drilling fluids due to site geological conditions (a frac-out) or a problem with containment or disposal of drilling muds where in-stream work could be necessary for containment. A contingency plan for HDD operations is not yet available (AGDC 2011).

### ***Aboveground Facilities***

Aboveground facilities would not be built over waterbodies; therefore, no impacts to navigation are expected from aboveground facilities.

### ***Support Facilities***

Support facilities would not be built over waterbodies; therefore, no impacts to navigation are expected from support facilities.

### **5.18.3.3 Denali National Park Route Variation**

The Denali NPP Route Variation would have two stream crossings at the Nenana River that have been determined to be navigable by the USACE. One crossing of the Nenana River would utilize an existing pedestrian bridge. The pipeline infrastructure would hang below the bridge surface and no work or placement of structures would occur in the river. Structures crossing

navigable streams would have to be designed and constructed in compliance with federal and state regulations, standards, and specifications for crossings of navigable waterways. The impacts to navigation resulting from use of the existing bridge would be negligible.

The construction method for the other crossing of the Nenana River would be HDD, which would not be expected to impact navigability of the Nenana River as noted above under HDD crossing Method. All construction activity would be conducted on the banks of the river. Impacts to Navigation would be similar to those described in Section 5.18.3.1 for open-cut, HDD, and bridge crossings.

#### **5.18.4     References**

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