

## **3.17 Hazardous Waste Sites and Spills**

### **3.17.1 Affected Environment**

#### **3.17.1.1 Hazardous Waste Sites**

Known and potential hazardous waste sites in the project area were identified through the review of Federal and State databases, specifically:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Information System, which contains information on hazardous waste sites, potential hazardous waste sites, and remedial activities.
- Resource Conservation and Recovery Act (RCRA) Information System, used by the U.S. Environmental Protection Agency (EPA) to track entities regulated as hazardous waste handlers. It includes data on handlers, permit and closure status, compliance with regulations, and cleanup activities.
- Alaska Department of Environmental Conservation (ADEC) State databases:
  - Statewide Oil and Hazardous Substance Spills Database
  - Contaminated Sites Program Database (includes leaking underground storage tanks, or LUSTs)

Database research is summarized in the following paragraphs and in Table 3.17-1 and Table 3.17-2. No CERCLA sites were identified within the project area.

One RCRA record pertains to the project area. A “Fisher Fuels Sterling Hwy Spill Site” incident along the Sterling Highway at Milepost (MP) 52 is documented as an RCRA site in the EPA database. This site listing represents a fuel tank truck rollover with a spill of approximately 5,000 gallons of gasoline and diesel fuel on October 29, 2001 (RCRA handler identity number AKR000005041).

The ADEC databases document multiple kinds of contaminated sites. The ADEC Statewide Oil and Hazardous Substance Spills Database provides a list of documented spills having occurred within the East Kenai/Cooper Landing area (ADEC 2006a, 2012, 2013) since 1995. This search yielded information for 14 separate incidents within the project area (Table 3.17-1). The October 2001 Fisher Fuels spill was not included in the search results, but has been listed in Table 3.17-1 (ADEC 2006a, 2012). All but two spill sites have a cleanup status of Complete, No Further Action (NFA). NFA status indicates a determination by the ADEC that residual contamination remaining at the site does not pose a significant risk to human health and the environment (ADEC 2006a).

**Table 3.17-1. Known spill sites in the project area**

<b>Spill Date</b>	<b>Spill Location</b>	<b>Quantity (gallons)/ Substance Released</b>	<b>Cleanup Status</b>
07/17/1995	Sterling Highway, Near Kenai River bridge	1/diesel	NFA
08/10/1995	Sterling Highway, Cooper Landing	1/other	NFA
09/28/1995	Sterling Highway, MP 45, Sunrise Inn	1/other	NFA
11/10/1997	Sterling Highway, MP 43.5, near Quartz Creek	75/diesel	NFA
08/28/1998	Cooper Landing	8/diesel	NFA
07/13/2000	Sterling Highway, MP 52.3	0 <sup>a</sup> /diesel	NFA
08/06/2001	Cooper Landing, near Quartz Creek	20/aviation fuel	NFA
10/29/2001	Sterling Highway, MP 52, near Gwin's Lodge	5,000/diesel and gasoline	NFA
07/03/2007	Sterling Highway, MP 52	200/diesel 20/engine lube oil	NFA
06/21/2010	Sterling Highway, MP 59.4	15/hydraulic oil	NFA
10/30/2011	Sterling/Snug Harbor Rd	10/gasoline	NFA
12/9/2011	Cooper Landing, Bean Creek Road	30/diesel	Open
02/06/2013	Sterling Highway, MP 57.5, semi truck accident	75/diesel 5/engine lube oil 4/antifreeze	Open
02/19/2013	Sterling Highway, MP 45, Sunrise Inn	50/gasoline	NFA
07/01/2013	Sterling Highway, MP 45, Sunrise Inn	5/gasoline	NFA

<sup>a</sup> Reported quantity of released substance is that reported by ADEC. This event was a collision with no recorded volume of released substance. This may indicate a minor fuel release that was unrecoverable due to rapid evaporation or extremely low quantity.

NFA = "No Further Action" because residual contamination remaining at the site does not pose a significant risk to human health and the environment (ADEC 2012).

Source: ADEC (2012, 2013); EPA (2013)

The ADEC Contaminated Sites Program Database (including LUSTs) contains five records for contaminated sites located within the project area (ADEC 2012). These properties and sites are listed in Table 3.17-2 and are identified in Map 3.17-1.

**Table 3.17-2. Sites in the project area in the Contaminated Sites Program Database**

Site Name and Location	Description	Cleanup Status
Cooper Landing Elementary School Bean Creek Road	Heating fuel contamination was encountered during underground tank removal. Excavation of contaminated soil was stopped because of concerns about structural integrity of school. Contamination above cleanup levels still exists in ground. If remodeling occurs or if contamination shows up in wells, then remaining contamination must be removed to site specific cleanup levels.	Cleanup Complete – Institutional Controls <sup>a</sup>
Sportsman’s Lodge MP 55 Sterling Highway	Diesel-range petroleum contamination was encountered during underground storage tank removal.	Cleanup Complete
Hamilton’s Place MP 48.5 Sterling Highway	Gasoline contamination was encountered during the removal of underground storage tanks in May 1994. Cleanup was initiated in 1999. Contaminated soil was excavated and trucked off site for treatment and disposal. Borings indicated groundwater contamination, and monitoring wells were installed. A long-term groundwater monitoring plan was established and is ongoing.	Cleanup Complete – Institutional Controls <sup>a</sup>
Sunrise Inn MP 45 Sterling Highway	Limited fuel contamination was encountered during removal of underground storage tank. Contamination levels were below site cleanup level.	Cleanup Complete
Sportsman’s Landing MP 55 Sterling Highway	Diesel-range petroleum contamination was discovered during a site assessment. Soils transported offsite for treatment and disposal.	Cleanup Complete

<sup>a</sup>Institutional Controls are administrative tools used to limit human exposure to hazardous waste by restricting activity, use, and access to properties with residual contamination. Summary of known controls are identified in the Description column.

Source: ADEC (2012).

The ADEC Statewide Underground Storage Tank (UST) database was also reviewed (June 5, 2012). Within the project area, six USTs are reported as currently in use: three at Cooper Landing Elementary School (MP 47.7) containing heating oil, one at Sunrise Inn (MP 45) containing gasoline, one at Hamilton’s Place (MP 48.5) containing gasoline, and one at the Alaska Department of Transportation and Public Facilities (DOT&PF) maintenance station containing diesel fuel. These tanks are in place but not leaking, and otherwise have not and are not currently creating a hazardous waste impact. The database also identifies three other locations with five USTs that are permanently out of use (four have been removed, and one is out of service but still in the ground; none are known to have created a hazardous waste impact).

### **3.17.1.2 Risk of Spills**

The risk of vehicle crashes that would result in pollutants in the Kenai River or adjoining wetlands and connected waterways, particularly the risk of tanker trucks containing fuel or other chemicals overturning or otherwise spilling their loads, was a substantial concern voiced by residents and others during scoping for this project. All alternatives are located within the Kenai River watershed, which is a sensitive area due to the Kenai River’s biologic and economic significance and its substantial human use. As noted above under Section 3.17.1.1, spills adjacent

to the Kenai River have occurred (see Table 3.17-1). Because of residents' concerns and the existing highway's proximity to the river and associated wetlands and tributaries, the risk of spills was examined.

The *Kenai River Comprehensive Management Plan* (DNR, ADF&G, KPB 1997, see Section 3.2), which was endorsed by all land management agencies along the Kenai River, recommends that "public road construction projects in upland areas should be located away from the Kenai River" and advocates for a general setback standard of 300 feet for all non-water-dependent public facilities development adjacent to the river.



**Figure 3.17-1. Tanker truck traversing the Sterling Highway through the project area.**

There are three primary environmental pathways for spill migration:

- Surface migration (surface waters and soil)
- Subsurface migration (groundwater transport)
- Atmospheric migration (air)

A risk evaluation was performed to characterize the sensitivity of the area resources to the alternative alignments. The report, *Emergency Response Assessment and Hazardous Materials Spill Control* (HDR 2003b), was used as a screening tool early in this project. While the alternatives have changed slightly since that time, the assessment remains valid to discuss and compare the relative risk posed by future spills along the alternatives under consideration (see Section 3.17.2).

### **3.17.2 Environmental Consequences**

#### **3.17.2.1 No Build Alternative**

##### **Direct and Indirect Impacts**

No known hazardous waste sites would be affected by the No Build Alternative.

Currently, 77 percent of the Sterling Highway in the project area is within 500 feet, and 56 percent of the highway is within 300 feet, of the Kenai River and its tributaries. This proximity presents a risk of automobile or tanker truck crashes that could spill pollutants into the river, adjoining wetlands, or connected waterways with little buffer or opportunity for cleanup. This risk is heightened because the highway does not meet current standards created, in part, to help prevent vehicles from leaving the roadway or overturning. The No Build Alternative would retain the highway as a narrow road at or near its maximum capacity for traffic.

### **3.17.2.2 Issues Applicable to the Build Alternatives**

#### **Direct and Indirect Impacts**

**Contaminated Sites.** Table 3.17-1 and Table 3.17-2 summarize the status of known hazardous waste and spill sites in the project area. Of the 19 known sites of past spills or contamination, 17 have been closed, closed with institutional controls, or designated as NFA by ADEC. It is anticipated that the two open sites would be resolved and closed prior to any construction. No major risk to the project and no major risk of impact to human health from construction of any of the alternatives have been identified as a result of this preliminary investigation. Because most spills are small and most cases have been closed, this analysis does not further report on which sites are most closely associated with the various build alternatives.

Following the Federal Highway Administration record of decision on this Supplemental Environmental Impact Statement (SEIS), further investigation into known and suspected contaminated sites will be necessary if a build alternative is selected. A Phase I Environmental Site Assessment (ESA) would be conducted in accordance with the American Society for Testing and Materials Standard E1527-05. The Phase I ESA would build on the records research already done and would include interviews with property owners, a review of historical sources, regulatory agency file reviews and consultation, and a visual reconnaissance of the alignment. It would identify recognized environmental conditions that could affect the preferred alternative. If the Phase I ESA were to identify a likely presence of hazardous materials, a Phase II site investigation would be undertaken. The investigation would determine the extent of the release, establish an approach to site design and construction to avoid contamination to the extent possible, and recommend management strategies for unavoidable contamination encountered.

**Risk of Spills.** The transport of commodities on the segment of each build alternative that would be built on a new alignment would increase the risks of contaminant spills and other releases from crashes in areas where such risks do not currently exist. However, use of the new alignment would reduce risk of hazardous material releases impacting the Kenai River, in the area of new alignment located away from the river. The length of each of these segments differs among the alternatives, as further described in the following sections.

All build alternatives would be built to current rural principal arterial standards, which incorporate design features meant to improve safety conditions that may have contributed to spills and crashes adjacent to the Kenai River. For example, upgrading the road design to include wider lanes, shoulders, and clear zones and avoid sharp curves would allow room for recovery before a rollover happened. Shoulders would improve emergency response capabilities to minimize spill-related impacts should a hazardous transportation spill occur along the Sterling Highway. However, the increased average vehicle speed along the improved highway may increase the severity of any crashes and resultant spills. Reduced traffic, specifically by commercial trucks, on the “old” highway under any of the build alternatives would reduce risk of crashes and spills in that area.

Numerous factors affect the amount of impact associated with a chemical release to the environment, including location, weather, stream flow, soil permeability, time of year, toxicity and quantity of spilled compound, and species present at the time of the release. However, any release of a chemical compound to the environment would likely adversely affect natural resources that came into contact with the compound. Spills into surface migration pathways (surface waters and soils) pose the greatest potential to quickly impact sensitive areas such as the

Kenai River or surface and shallow drinking water sources. In general, it is reasonable to presume that the risk of a spill entering the Kenai River diminishes the farther away from the Kenai River the spill occurs. A greater distance from the Kenai River allows more time for responders to contain the spilled material and prevent it from reaching the river. Tributaries to the Kenai River, riparian areas, and wetlands are areas of special concern.

Subsurface migration pathways are difficult to identify with certainty; however, private residences downgradient from alternative alignments are identified as sensitive areas because they likely have private drinking water wells (there is no public water supply in the Cooper Landing area). Atmospheric migration pathways are highly unpredictable and are not examined.

Environmental sensitivity of each alignment to risks associated with hazardous materials is evaluated in this SEIS using seven different metrics, as defined below:

- Steep side slopes, represented as a percentage of the alignment length that has steep slopes (6-10 percent) adjacent to surface water bodies or residential areas where a spill could quickly migrate overland into sensitive areas.
- Downgradient residences, represented as a percentage of residential property downslope from the alternative alignment.
- Proximity to Tier I water bodies, represented as a percentage of the alignment within the 300 foot buffer setback identified by the *Kenai River Comprehensive Management Plan*. Tier I waterbodies in the project area are the Kenai River, Kenai Lake, and their immediate tributaries, which include the Russian River, Cooper Creek, and Juneau Creek.
- Proximity to Tier I water bodies, represented as a percentage of the alignment length within a 500-foot riparian buffer. This more conservative buffer was used in the 2003 report.
- Proximity to Tier II water bodies, represented as a percentage of the alignment length within a 500-foot riparian buffer. Tier II streams are tributaries to Tier 1 streams. Surface migration pathways of Tier II streams can affect large areas and important habitat but are potentially slower than Tier I stream pathways.
- Proximity to palustrine wetlands, which are bogs hydrologically connected to Tier I or Tier II streams.

Table 3.17-3 summarizes data associated with these metrics, and the relative risk is discussed below under each build alternative. Map 3.17-2 shows the alternative alignments with the 300-foot and 500-foot buffer zone areas near Tier 1 streams in the project area.

### **Construction Impacts**

Should contamination be encountered during construction of any of the build alternatives, the ADEC would be notified and the response efforts would be handled in accordance with an ADEC-approved Corrective Action Plan. Hazardous materials that would be used, transported, or stored within the project right-of-way as part of the construction activities could adversely affect the environment if they were not properly handled and contained. These materials would include asphalt, concrete, and fuel and lubricants for vehicles and other equipment.

**Mitigation**

Construction contractors would be required to meet all Federal, State, and local regulatory requirements regarding the discovery and use of hazardous materials. These regulatory requirements include worker right-to-know and safety training for the use of hazardous materials, as well as the recognition and reporting of hazardous materials discovery.

Hazardous materials used during project construction would be stored and handled according to State and Federal regulations. As part of standard specifications for highway construction, the contractor would develop a Hazardous Material Control Plan (HMCP) and a Spill Prevention, Control, and Countermeasure Plan. Detailed best management practices and housekeeping measures regarding hazardous materials would be outlined in a site-specific HMCP, which is a required part of the contractor’s Storm Water Pollution Prevention Plan. The contractor would be required to practice proper hazardous material storage and handling and adhere to the DOT&PF emergency response procedures, which stipulate that all work must stop immediately and the site be secured to prevent unauthorized access if hazardous materials are encountered. The contractor would be expected to isolate the area and prevent migration of any contaminants. In addition, the appropriate regulatory authorities must be notified immediately.

**Table 3.17-3. Sensitive resources in spill migration pathway by alternative**

	<b>No Build</b>	<b>Cooper Creek</b>	<b>G South</b>	<b>Juneau Creek</b>	<b>Juneau Creek Variant</b>
Length of alignment (miles)	14.1	14.2	14.1	14.7	14.3
Down-gradient residences	37.2%	44.9%	40.6%	34.4%	36.6%
Percent with steep down-gradient side slopes	6.7%	7.6%	24%	24.1%	32.6%
Percent length within 300 feet of Tier I streams	56%	43%	33%	15%	16%
Percent length within 500 feet of Tier I streams	77%	56%	45%	25%	26%
Percent length within 500 feet of Tier II streams	1.5%	1.5%	10.7%	22.5%	25%
Percent length within 500 feet of wetlands hydrologically connected to Tier I or Tier II streams <sup>a</sup>	1.3%	2.1%	6.8%	12.1%	12.1%

<sup>a</sup> This represents the incremental risk posed by a spill beyond 500 feet from a Tier I or Tier II stream, but within 500 feet of wetlands that are hydrologically connected to a Tier I or Tier II stream. The geographic information systems (GIS) analysis performed to generate this data used older, National Wetland Inventory mapping and may not correlate directly with the analysis discussed in Section 3.20, Wetlands and Vegetation.

Source: *Emergency Response Assessment Hazardous Materials Spill Control Report* (HDR 2003b); Tier 1 stream buffer zone percentages (both 300 and 500 feet) were recalculated in 2013 for this table to account for current alternatives.

### **3.17.2.3 Cooper Creek Alternative**

#### **Direct and Indirect Impacts**

**Hazardous Waste Sites.** The MP 52 site that is the location of three spills, one of which was a 5,000-gallon fuel spill, would be subject to earth moving during reconstruction of the existing highway for the Cooper Creek Alternative. Work at this site would be more likely to unearth previously undetected contaminated soils than at other areas along the alignment, and presents a slightly elevated risk to DOT&PF of additional time and costs to the project for cleanup. See Section 3.17.2.2 for issues applicable to all build alternatives.

**Spill Risk.** The Cooper Creek Alternative would have low exposure to steep side slopes, Tier II tributaries, and wetlands but would have a high exposure to downgradient residences and Tier I streams. Almost 8 miles of the 14.2-mile alignment would be within 500 feet of the Kenai River and other Tier 1 streams, of which about 6 miles would be within 300 feet. West of Cooper Creek, the alternative largely follows the existing highway alignment along the Kenai River, which poses a relatively high level of risk to the Kenai River. However, the highway would be reconstructed throughout to meet current standards and improve safety.

#### **Construction Impacts**

Construction impacts for all build alternatives, as related to known contamination, are addressed in Section 3.17.2.2.

#### **Mitigation**

Mitigation for all build alternatives is addressed in Section 3.17.2.2.

### **3.17.2.4 G South Alternative**

#### **Direct and Indirect Impacts**

**Hazardous Waste Sites.** The MP 52 site that is the location of three spills, one of which was a 5,000-gallon fuel spill, would be subject to earth moving during re-construction of the existing highway for the G South Alternative. Work at this site would be more likely to unearth previously undetected contaminated soils than at other areas along the alignment, and presents a slightly elevated risk to DOT&PF of additional time and costs to the project for cleanup. See Section 3.17.2.2 for issues applicable to all build alternatives.

**Spill Risk.** About one-quarter of the G South Alternative alignment has exposure to steep side slopes adjacent to water bodies. Approximately 6.4 miles of the alignment (45 percent) would be within 500 feet of the Kenai River and other Tier 1 streams, of which about 4.7 miles (33 percent of the total) would be within 300 feet. The G South Alternative has moderate exposure to Tier II streams and wetlands that are hydrologically connected to the Kenai River. A substantial portion of this alternative would be built on the existing alignment near the Kenai River. However, the highway would be reconstructed throughout to meet current standards and improve safety.

#### **Construction Impacts**

Construction impacts for all build alternatives, as related to known contamination, are addressed in Section 3.17.2.2.

#### **Mitigation**

Mitigation for all build alternatives is addressed in Section 3.17.2.2.



### **3.17.2.5 Juneau Creek and Juneau Creek Variant Alternatives**

#### **Direct and Indirect Impacts**

**Hazardous Waste Sites.** The direct and indirect impacts from hazardous waste sites are the same as those discussed in Section 3.17.2.2.

**Spill Risk.** The Juneau Creek Alternative’s 14.7-mile length contains approximately 3.8 miles (26 percent) of roadway within 500 feet of Tier I streams, of which 2.4 miles (16 percent of the total) would be within 300 feet. The Juneau Creek Variant Alternative is 14.3 miles long, and would contain 3.6 miles (25 percent) of roadway within 500 feet, of which 2.2 miles (15 percent of the total) would be within 300 feet of the Tier I water bodies.

Both of these alternatives have moderate exposure to steep side slopes and high exposure to wetlands. However, these alternatives provide separation from the Kenai River and other streams over the longest distance, likely providing responders more time to protect the Kenai River in the event of a spill. The western segments of these alternatives built on the existing alignment would remain relatively near the Kenai River, posing greater risk than the segment built on a new alignment. However, the highway would be reconstructed throughout to meet current standards and improve safety.

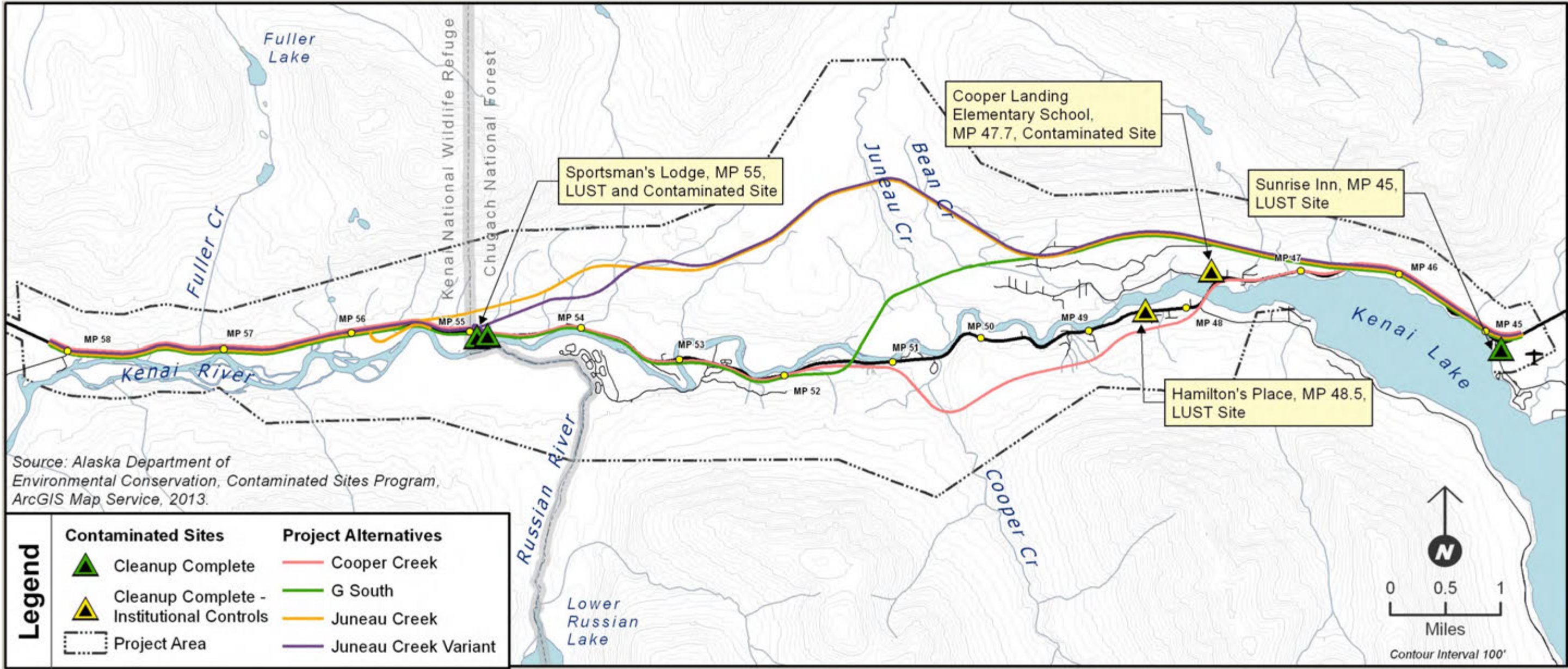
#### **Construction Impacts**

Construction impacts, as related to known contamination for the Juneau Creek and Juneau Creek Variant alternatives, are addressed in Section 3.17.2.2.

#### **Mitigation**

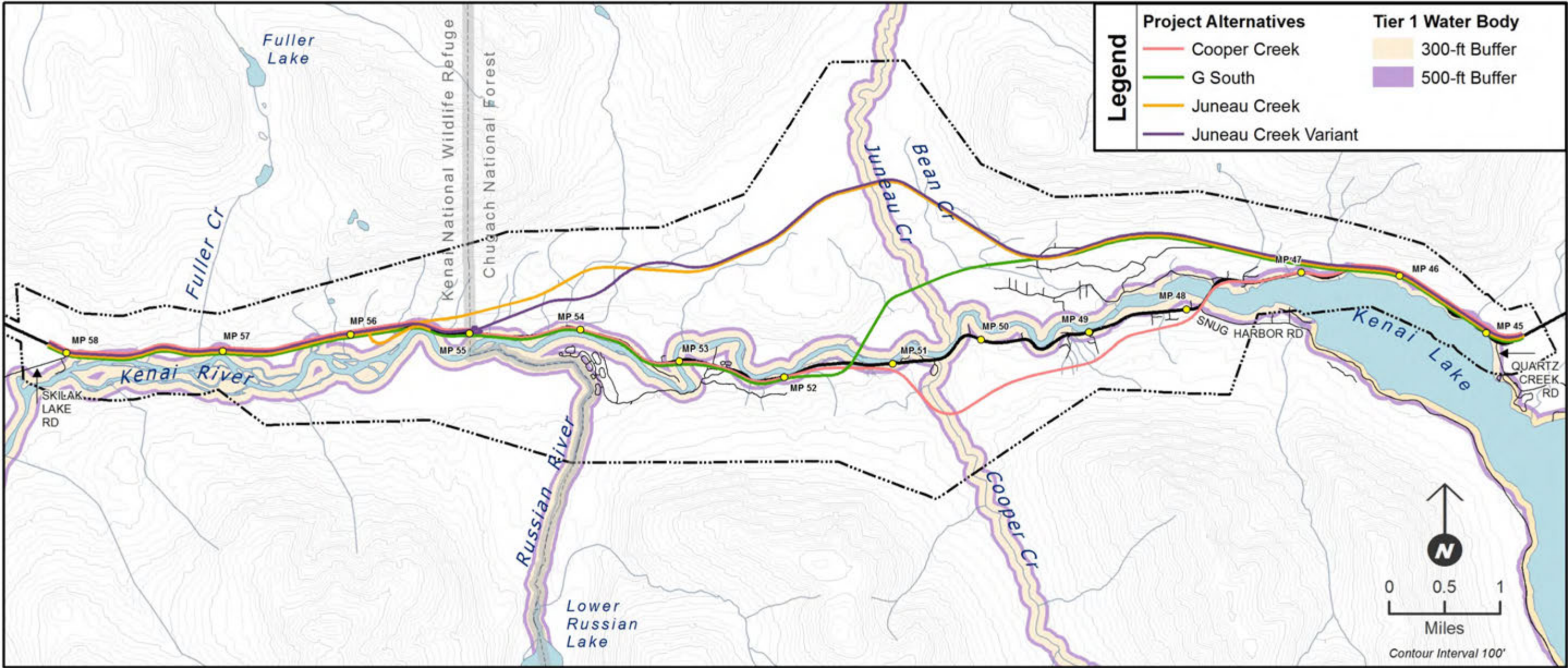
Mitigation for all build alternatives is addressed in Section 3.17.2.2.

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Map 3.17-1. Hazardous material sites

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Map 3.17-2. Buffer zone areas near Tier 1 streams

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