

Attachment 7

Sensitive Areas and Habitats

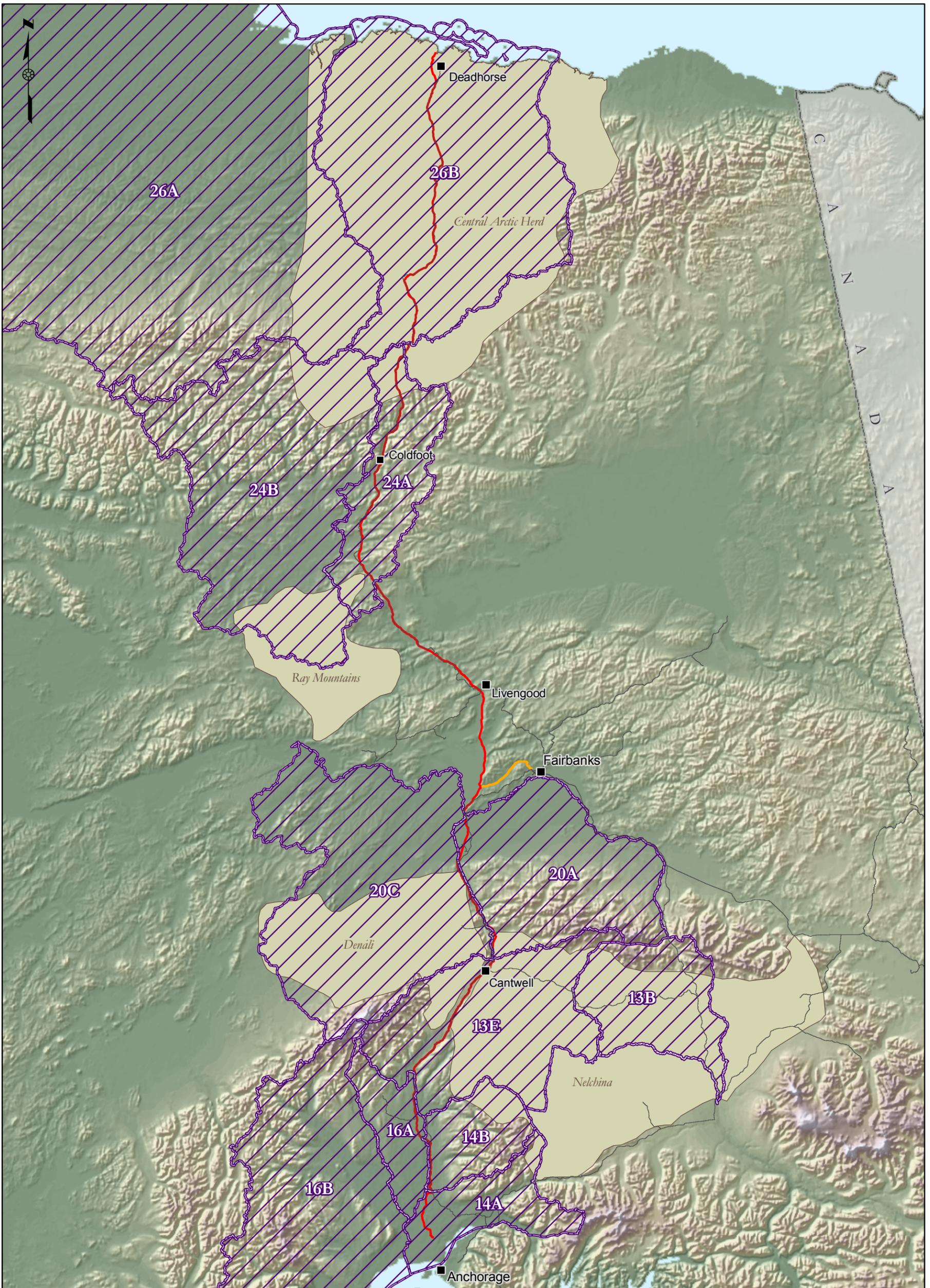
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Common Name, Scientific Name	Prudhoe Bay to Northern Atigun Pass (MP 0 to MP 173)	Northern Atigun Pass to Livengood (MP 173 to MP 405)	Livengood to Cantwell (MP 405 to MP 570)	Cantwell to Beluga (MP 570 to MP 737)	Habitat Utilization	Periods of Sensitivity
ANADROMOUS AND RESIDENT FISH SPECIES						
<i>Note: Tributaries and waterbodies associated with anadromous water bodies are not listed.</i>						
Sockeye salmon <i>Onchorhynchus nerka</i>	No lattice	Koyukuk River Yukon River	No	Chulitna River Susitna River Little Susitna River	Spawning typically occurs in freshwater lakes. Juveniles rear one to two years in Freshwater	Spawning occurs July through September Fry emergence in May
Chum salmon, <i>Onchorhynchus keta</i>	Sagavanirktok River	Chandalar River Koyukuk River Jim River Kanuti River Ray River Yukon River	Tolovana River Chatanika River Tanana River Clear Creek Julius Creek Nenana River	Chulitna River Susitna River Little Susitna River	Spawns in side channel of rivers in upwelling springs, small streams or within the intertidal zone. Juveniles migrate to sea soon after emergence	Spawning occurs July through September Fry emergence in May
Coho salmon, <i>Onchorhynchus kisutch</i>	No	Koyukuk River Yukon River	Tolovana River Chatanika River Tanana River Nenana River	Chulitna River Susitna River Little Susitna River	Juveniles migrate to sea soon after emergence	Spawning occurs September through October Fry emergence in May
Chinook salmon, <i>Onchorhynchus tshawytscha</i>	No	Chandalar River Koyukuk River Jim River Kanuti River Ray River Yukon River	Tolovana River Chatanika River Tanana River Nenana River	Chulitna River Susitna River Little Susitna River	High water flow through gravel is preferred spawning habitat. Migrate to sea after one year in freshwater	Spawning occurs June through August Fry emergence in May
Pink salmon, <i>Onchorhynchus gorbuscha</i>	Sagavanirktok River Kuparuk River	Koyukuk River Yukon River	No	Chulitna River Susitna River Little Susitna River	Juveniles migrate to sea soon after emergence	Spawning occurs July through August Fry emergence in May Unique two year lifecycle, fish run in odd and even numbered years.
Dolly Varden, <i>Savelinus malma</i>	Sagavanirktok River	Chandalar River Dietrich River Koyukuk River	No	Susitna River	Availability of overwintering habitat is essential for survival of population Overwintering habitat is limited MP 0 to MP 173	Spawning occurs September through November Fry emergence in March
Whitefishes, Coregonus sp	Sagavanirktok River Kuparuk River	Chandalar River Koyukuk River Yukon River	Tanana River	Susitna River	Broad whitefish spawn in moving water, eggs require flowing water for proper development. Humpback whitefish prefer to spawn in small and medium sized gravel. Overwintering habitat is limited MP 0 to MP 173	Adult whitefish spawn in rivers in September and October Fry emergence spring and early summer.

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WILDLIFE						
Caribou	Central Arctic Herd	Ray Mountains Herd	Denali Herd, Nelchina Herd	Denali Herd, Nelchina Herd	Winter foraging is dominated by lichens, cotton sedge, willow, forbs, and sedges Calving occurs on the east and west portion of the Sagavanirktok River, these areas are important for insect relief and grazing and nourishment opportunities for calves.	Calving May to June Insect relief late June through mid-August Winter foraging occurs November through March
Moose	GMU 26A, 26B	GMU 24A	20C, 20A	20C, 13E, 16B, 14A, 14B	Concentrate within riparian zones of rivers drainages during cold winter months.	Winter foraging January through May Calving occurs mid-May to early June.
Brown Bear	GMU 26A, 26B	GMU 24A	16A	GMU 20C, 13E	Occupy riverbanks, lake basins, dunes; gullies for denning cubs	Denning begins October with emergence in April and May
Black Bear	No	No	20C, 20A	GMU 13E, 13B, 14A, 14B, 16A, 16B, 20C	Occupy riverbanks, lake basins, dunes; gullies for denning cubs	Denning begins in late September; emerge in May
Muskoxen	26B	No	No	No	Forage upon sedges during summer, and sometimes shrubbery. Winter foraging include shrubs. Feed within riparian zone and dry tundra habitat. Winter feed in windblown bluffs where vegetation is exposed.	Winter feeding occurs November through February. Calving occurs in the spring April to June.
Dall Sheep	24A, 24B, 26A			13E	Alpine and Subalpine, grass and low shrubbery, Typically occur above treeline feeding in snow free locations during winter. Range is expanded in snow free summer months.	Lambing mid-May through June. Wintering locations November through February.
Waterfowl	Yes	Yes	Yes	Yes	Abundant in wetlands, grassy areas and open waters for nesting and brooding	Nesting, mating, and molting April through September
Raptors	Yes	Yes	Yes	Yes	Abundant in wetlands, grassy areas and open waters for nesting and brooding	Nesting and mating May through September

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THREATENED SPECIES						
Polar Bear	Describe extent of CH on North Slope and within US boundaries	No	No	No	Utilize sea ice for hunting, travel, and resting. Occupy barrier islands for denning and feeding.	Cubs born early December through January; cubs emerge from dens March through April
Yellow Billed Loon	Yes	No	No	No	Occupy deep water lakes and ponds to nest and rear their brood.	Young reared July through early September.
Stellar's Eider	Yes	No	No	No	Nesting occurs coastal tundra adjacent to small ponds or within wetlands. During the breeding season they feed on aquatic insects and plants in ponds and streams.	Reproduction cycle occurs May-September, females remain on nesting grounds until September. Males move to molting locations by the end of June
Spectacled Eider	Yes	No	No	No	Tundra, wetlands, and coastal waters for nesting and brood rearing. Move into wet coastal tundra locations during spring-break up to find nesting locations. Nests are located near ponds, lakes.	Reproduction cycle occurs May-September, females remain on nesting grounds until September. Males move to molting locations by the end of June.
Arctic Peregrine Falcon (Delisted from ESA on October 5 1994)	Sagavanirktok River and associated tributaries, late April through mid-September.	No	No	No	Cliff nesters, regular use of bluffs and cliffs in northern foothills of the Brooks Range.	Incubation late May, hatching occurs early July
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American Peregrine Falcon (Delisted from ESA August 25 1999)	No	Yukon River Drainages – Tanana, Koyukuk, and main Yukon, late April to late September	Yes	No	Nest on riparian cliffs and dirt bluffs, use rock outcroppings in uplands near major rivers.	Incubation occurs mid-May, young hatch by late June and fledge in June.
SOURCES:						
<p>Alaska Department of Fish and Game. 2003. Muskox management report of survey-inventory activities 1 July 2000-30 June 2002. C. Healy, editor. Project 16.0. Juneau, Alaska.</p> <p>Alaska Department of Fish and Game. 2008. Moose management report of survey-inventory activities 1 July 2005-30 June 2007. P. Harper, editor. Juneau, Alaska.</p> <p>ADFG. 1994. <i>Wildlife Notebook Series</i>. Alaska Department of Fish and Game, Juneau, AK;</p> <p>Reynolds 2002.</p> <p>U.S. Fish and Wildlife Service. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Polar Bear (<i>Ursus maritimus</i>) in the United States. 50 CFR Part 17. November 22, 2010.</p> <p>Carroll, G.M. 1998. Unit 26A moose management report. Pages 457-471 in M.V. Hicks, editor. Moose management report of survey and inventory activities, 1 July 1995 through 30 June 1997. Alaska Department of Fish and Game. Study 1.0. Juneau, Alaska.</p> <p>Feldhamer, G.A., B.C. Thompson and J.A. Chapman (Editors). 2003. <i>Wild Mammals of North America: Biology, Management, and Conservation</i>. John Hopkins University Press, Baltimore MD.</p> <p>MacDonald, S.O and J.O. Cook. 2009. <i>Recent Mammals of Alaska</i>. University of Alaska Press, Fairbanks, AK;</p> <p>Truett, J.C. and S.R. Johnson. 2000. <i>The Natural History of an Arctic Oil Field: Development and the Biota</i>. Academic Press, San Diego, CA.</p> <p>Spectacled Eider - http://alaska.fws.gov/media/SpecEider_RangeMap.htm</p> <p>Stellar's Eider - http://alaska.fws.gov/media/StellEider_FactSheet.htm</p>						



 Caribou Herd Boundaries	 Fairbanks Lateral
 Game Management Unit	 Road
 Alaska Stand Alone Gas Pipeline Route	 Town

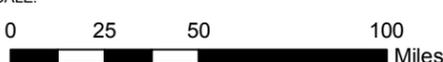
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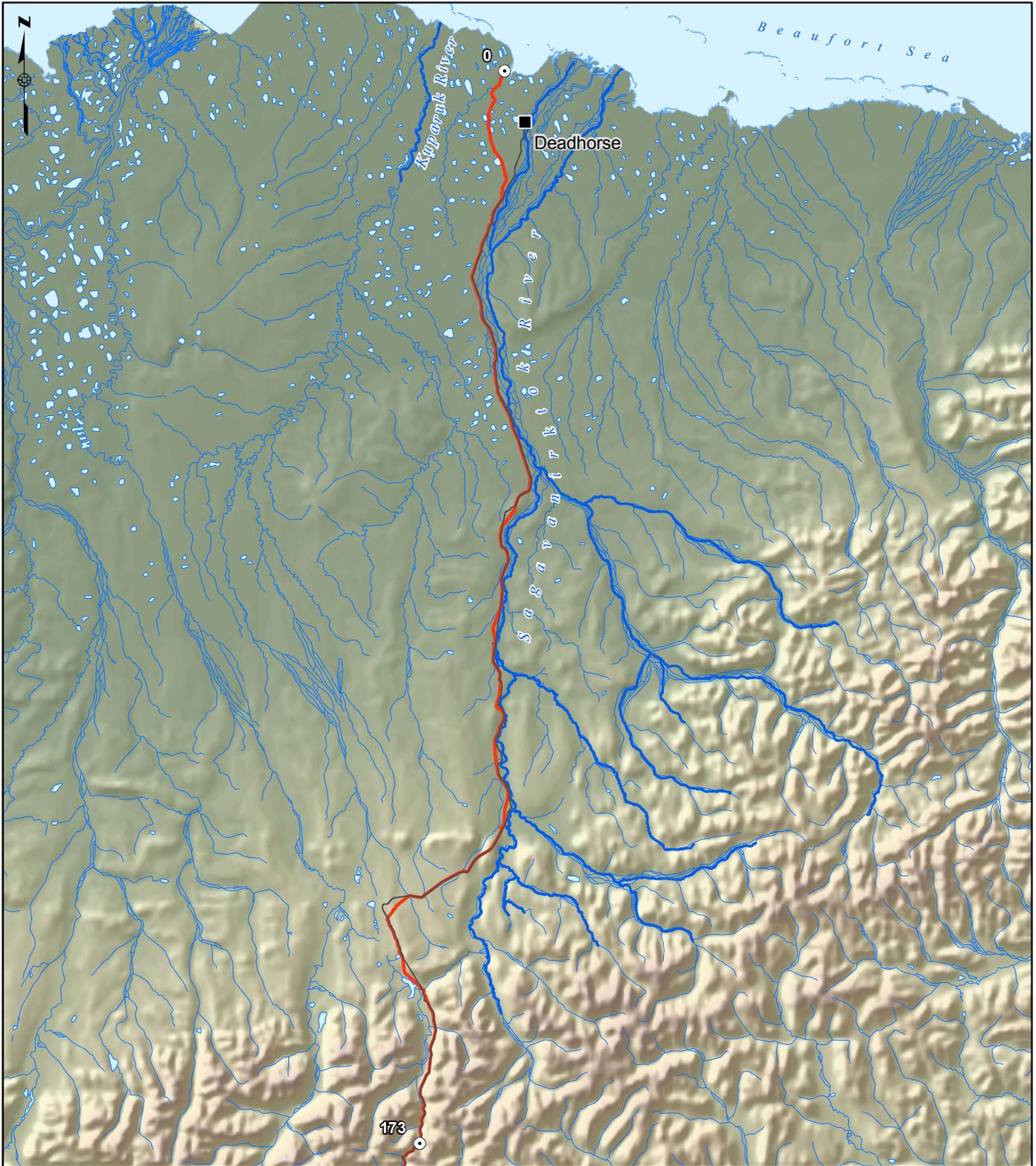

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ALASKA GASLINE DEVELOPMENT CORP.
GAS FOR ALASKANS

WILDLIFE AREAS
 Alaska Stand Alone Gas Pipeline/ASAP
 Plan of Development, Revision 1

SCALE: 	ATTACHMENT: 7-1
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- Anadromous Stream
- Alaska Stand Alone Gas Pipeline Route
- ⊙ Alignment Milepost
- Road
- Town

Note: Tributaries and waterbodies associated with anadromous water bodies are not listed.



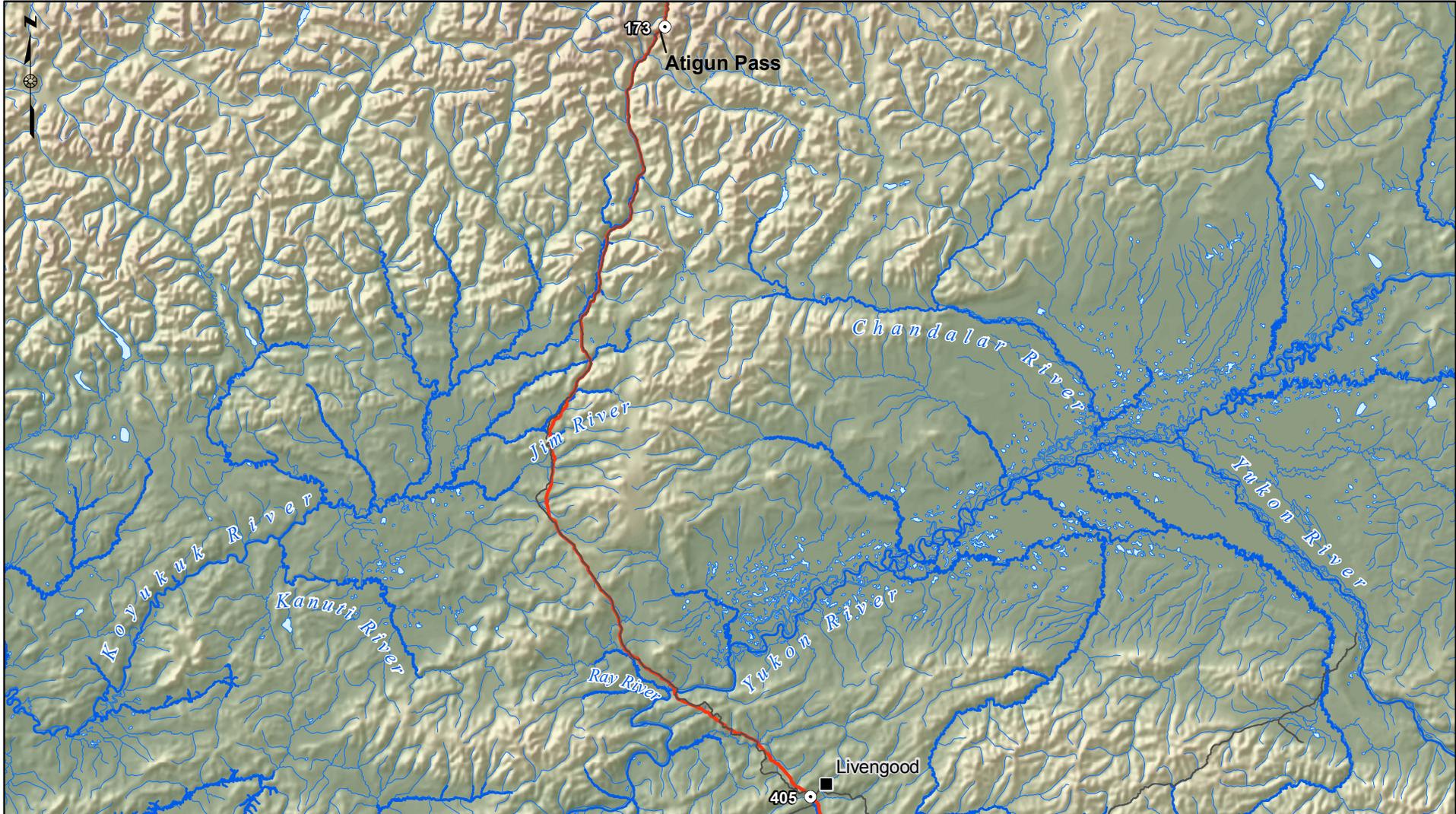
**ANADROMOUS AND RESIDENT FISH STREAMS
PRUDHOE BAY TO NORTHERN ATIGUN PASS**
Alaska Stand Alone Gas Pipeline/ASAP
Plan of Development, Revision 1



ATTACHMENT:
7-2A

See project disclaimer on inside cover.





- Anadromous Stream
- Alaska Stand Alone Gas Pipeline Route

- Alignment Milepost
- Road

- Town



**ANADROMOUS AND RESIDENT FISH STREAMS
NORTHERN ATIGUN PASS TO LIVENGOOD**
Alaska Stand Alone Gas Pipeline/ASAP
Plan of Development, Revision 1

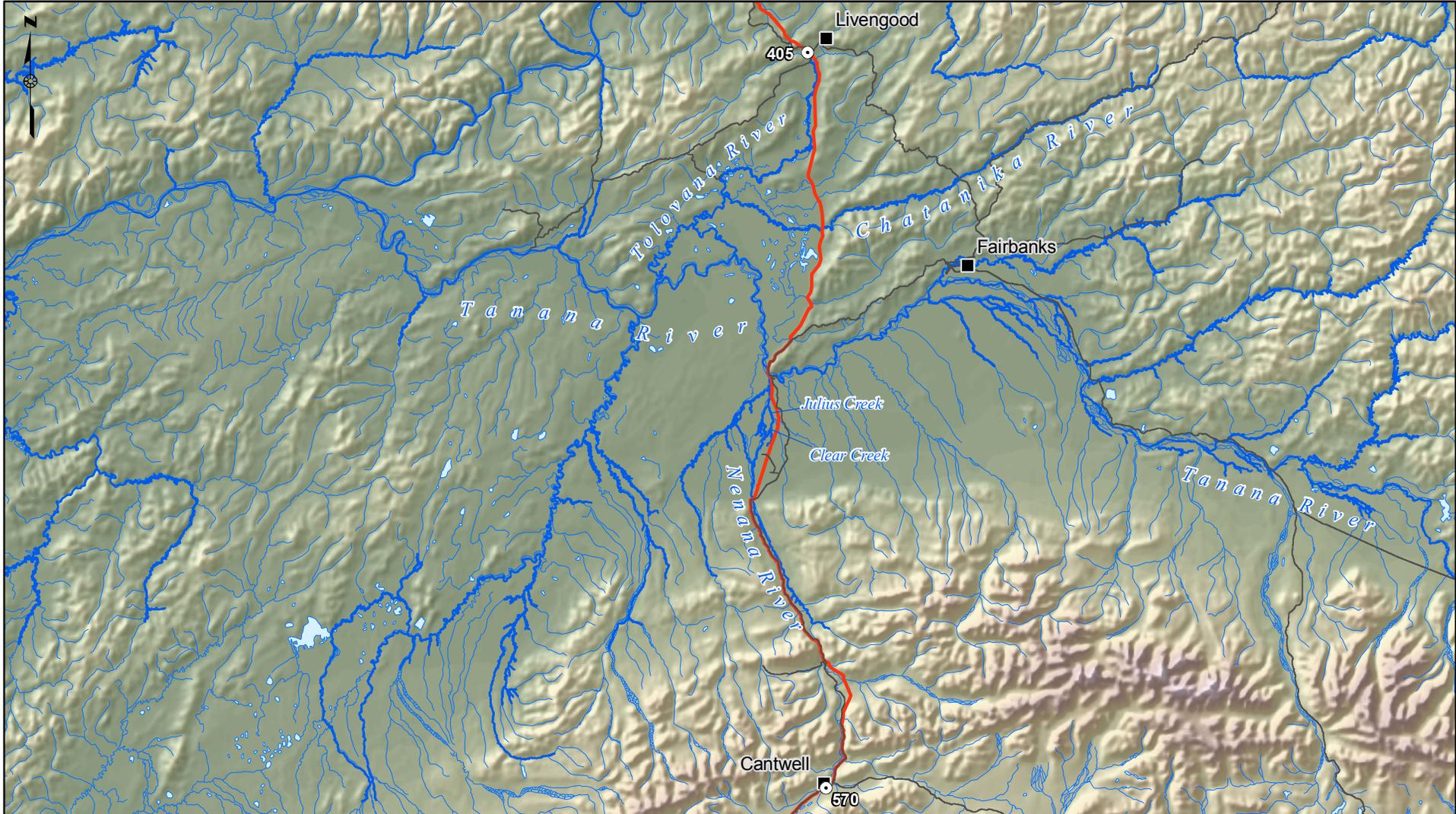


ATTACHMENT:
7-2B

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- Anadromous Stream
- Alaska Stand Alone Gas Pipeline Route
- ⊙ Alignment Milepost
- Road
- Town



**ANADROMOUS AND RESIDENT FISH STREAMS
LIVENGOOD TO CANTWELL**
Alaska Stand Alone Gas Pipeline/ASAP
Plan of Development, Revision 1

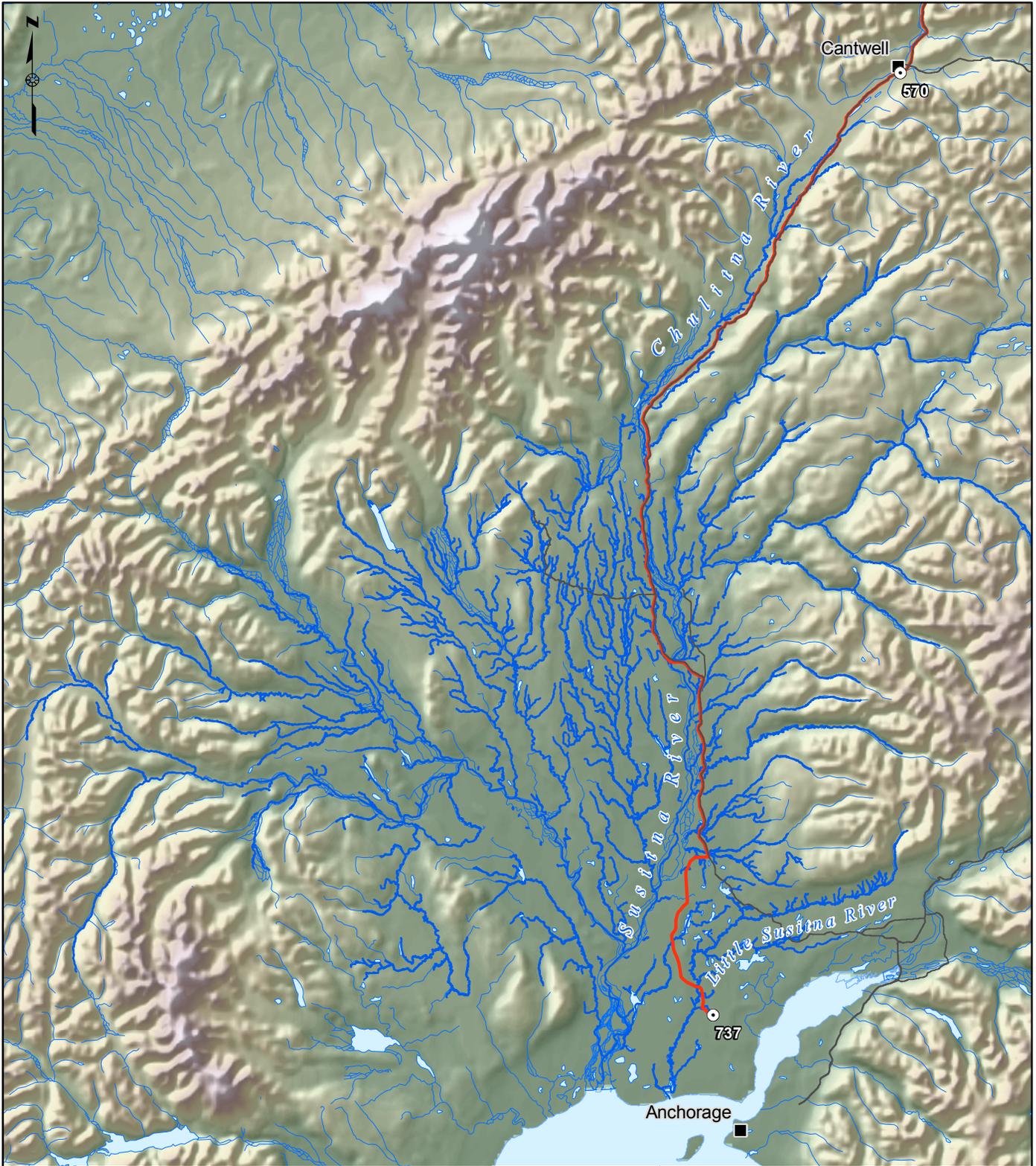


ATTACHMENT:
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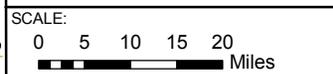
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**ANADROMOUS AND RESIDENT FISH STREAMS
CANTWELL TO BELUGA**
Alaska Stand Alone Gas Pipeline/ASAP
Plan of Development, Revision 1



ATTACHMENT
7-2D