

EXECUTIVE SUMMARY

The Ambler Mining District Access project will identify, design, and construct a transportation corridor from the Ambler mineral belt to either a port location on the west coast of Alaska or the surface transportation system in Alaska's Interior. Both road and rail options are being evaluated. The selected corridor is intended to provide surface transportation access to state lands and facilitate exploration and development of mineral resources along the Ambler mining belt.

The project study area extends from the Ambler mineral belt south to Nenana and from the Dalton Highway to the west coast of Alaska. Initially, eight potential corridors were identified within the project study area. These eight corridors are addressed in Section 3 of this report. In 2011, the Kanuti Flats Corridor was excluded based on terrain considerations, and variations of the Brooks East Corridor were developed based on an aerial investigation and consultation with the National Park Service. The initial Brooks East Corridor options are addressed in Section 5 of this report. A final set of Brooks East corridor revisions was completed in 2012 to incorporate data collected during field surveys and community meetings. These corridor refinements are described in Section 6 of this report.

This Summary Report compiles information collected and presented in separate technical memoranda that individually address design criteria, cost, hydrology, geotechnical, and environmental considerations for the eight original corridors. This document evaluates the eight original corridors and two iterations of Brooks East Corridor refinements based on specific criterion and a scoring system. The criterion evaluated and the scores assigned for each corridor are based on data collected to date. Criterion and scores may change as field studies and additional community outreach are completed.

Twelve criteria were selected for evaluation based on community discussions and project team preliminary research. These criteria include: (1) Corridor Length, (2) Federal Conservation System Units, (3) Wild and Scenic Rivers, (4) Salmon/Sheefish Rivers, (5) Caribou Habitat, (6) Threatened and Endangered Species/Critical Habitat Areas, (7) Wetland Habitats, (8) Availability of Material Sites, (9) Large Bridges, (10) Construction Cost, (11) Maintenance

Costs, and (12) Special Considerations. The results of this evaluation are summarized in Tables ES-1 through ES-8.

Both rail and road options were evaluated for this project. Considerations specific to rail construction and operations were documented. Rail corridors are not rated as highly as road corridors, due to the costs associated with rail construction and maintenance. Road corridors that connect to the Dalton Highway rate the highest, due to their relatively shorter lengths, lower costs and avoidance of wetlands, critical habitats and federal conservation system units.

Meetings with communities across the study area were held between January 2011 and March 2012 to provide information on this study, and to gather information and feedback from the communities regarding potential access to the Ambler mineral belt. Information from these meetings was incorporated into these evaluations and will inform the engineering and environmental processes as the project moves forward. Meetings were also held with the National Park Service to discuss considerations related to corridors that cross through the Gates of the Arctic National Park and Preserve.

Cultural and subsistence resource information was not specifically evaluated for this report due to the lack of corridor specific data, though early input received during community meetings was factored into the corridor refinements. Corridors selected for further technical investigation will be assessed for these resources as part of future studies.

Table ES-1: Roadway Corridor Evaluation Summary

Criterion	Brooks East	Kanuti Flats	Elliott Hwy	Parks Hwy ¹	DMTS Port	Cape Blossom	Selawik Flats	Cape Darby
Corridor Length (miles)	220	240	370		260	250	330	340
Federal CSU (unit/miles/percentage of corridor)	GANPP/ 26 miles/11% ²	None	None		KVNP/NNP/CKNM/ 114 miles/44%	Selawik NWR/ 94 miles/38%	Selawik NWR/ 77 miles/23%	Selawik NWR/ 77 miles/23%
Wild and Scenic Rivers	Kobuk WSR ²	None	None		Salmon WSR	Selawik WSR	Selawik WSR	Selawik WSR
Salmon/Sheefish Rivers Total	26	54	56		76	85	71	77
Mapped Anadromous	5	14	8		13	2	23	26
Assumed Anadromous	21	41	48		63	83	48	51
Caribou Habitat	Less	Less	Less		More	More	More	More
Threatened/Endangered Species/Critical Habitat	None	None	None		Steller's eider/yellow-billed loon/polar bear	yellow-billed loon/polar bear	yellow-billed loon	spectacled eider/polar bear/yellow-billed loon
Wetland Habitats (miles)	82	115	88		40	144	78	98
Material Site Availability (percent of corridor with material site within 10 miles)	100%	75%	84%		70%	10%	57%	58%
Total Large Bridges (number/length in ft)	13/5,000 ft	14/5,440 ft	12/7,360 ft		19/8,440 ft	24/9,250 ft	21/7,470 ft	25/7,890 ft
Bridges Over 1,500 ft	None	None	Yukon River/2,720 ft		Noatak River/1,560 ft	None	None	None
Major Stream Crossings	161	212	251		213	221	185	193
Construction Cost³ (in millions)	\$430	\$510	\$990		\$720	\$860	\$960	\$950
Annual Maintenance Cost⁴ (in millions)	\$8.50	\$9.10	\$13.50		\$9.50	\$9.20	\$12.80	\$13.10
Special Considerations								
Port Construction	No	No	No		No	Yes	Yes	Yes
Very Large River Crossings	None	None	Yukon River		Noatak River	None	None	None

1. Same as Rail Corridor Summary Comparison - See Table ES-7.
2. Access through GANPP was identified in ANILCA.
3. Cost rounded to tens of millions.
4. Annual maintenance cost for road and maintenance camps.

Table ES-2: Roadway Corridor Scoring Summary

Criterion	Brooks East	Kanuti Flats	Elliott Hwy	Parks Hwy ¹	DMTS Port	Cape Blossom	Selawik Flats	Cape Darby
Corridor Length	5	5	2		4	5	3	3
Federal CSU	5	5	5		0	0	0	0
Wild and Scenic Rivers	5	5	5		0	0	0	0
Salmon/Sheefish Rivers	5	4	4		2	1	2	2
Caribou Habitat	5	5	5		0	0	0	0
Threatened/Endangered Species/Critical Habitat	5	5	5		0	0	3	0
Wetland Habitats	3	2	3		4	1	3	2
Material Site Availability	5	3	4		2	0	1	1
Total Large Bridges	5	5	2		1	0	2	2
Construction Cost	5	4	3		4	3	3	3
Annual Maintenance Cost	5	4	2		4	4	2	2
Total Score	53	47	40		21	14	19	15

1. Same as Rail Corridor Summary Comparison - See Table ES-8.

Table ES-3: 2011 Brooks East Corridor Options Evaluation Summary

Criterion	Option A	Option B	Option C	Option D	Option E	Option F
Corridor Length (miles)	240	250	250	210	220	220
Federal CSU (unit/miles/percentage of corridor)	None	None	None	GANPP 12/6% ¹	GANPP 12/6% ¹	GANPP 12/7% ¹
Wild and Scenic Rivers	None	None	None	Kobuk WSR	Kobuk WSR	Kobuk WSR
Salmon/Sheefish Rivers Total	36	35	33	22	24	20
Mapped Anadromous	8	8	8	4	6	4
Assumed Anadromous	28	27	25	18	18	16
Caribou Habitat	Less	Less	Less	Less	Less	Less
Threatened/Endangered Species/Critical Habitat	None	None	None	None	None	None
Wetland Habitats (miles)	27	29	33	22	24	28
Material Site Availability (percent of corridor with material site within 10 miles)	77%	78%	78%	93%	94%	94%
Total Large Bridges (number/length in ft)	10/4,420 ft	13/5,620 ft	11/4,880 ft	11/4,220 ft	14/5,420 ft	12/4,680 ft
Bridges Over 1,500 ft	None	None	None	None	None	None
Major Stream Crossings	187	191	180	163	167	156
Construction Cost ² (in millions)	\$500	\$550	\$550	\$440	\$440	\$440
Annual Maintenance Cost ³ (in millions)	\$8.40	\$9.30	\$9.30	\$8.30	\$8.50	\$8.60
Special Considerations						
Port Construction	No	No	No	No	No	No
Very Large River Crossings	None	None	None	None	None	None

1. Access through GANPP was identified in ANILCA.
2. Cost rounded to tens of millions.
3. Annual maintenance cost for road and maintenance camps.

Table ES-4: 2011 Brooks East Corridor Options Scoring Summary

Criterion	Option A	Option B	Option C	Option D	Option E	Option F
Corridor Length	5	5	5	5	5	5
Federal CSU	5	5	5	5	5	5
Wild and Scenic Rivers	5	5	5	5	5	5
Salmon/Sheefish Rivers	5	5	5	5	5	5
Caribou Habitat	5	5	5	5	5	5
Threatened/Endangered Species/Critical Habitat	5	5	5	5	5	5
Wetland Habitats (miles)	5	5	4	5	5	5
Material Site Availability	3	3	3	5	5	5
Total Large Bridges	5	4	5	5	5	5
Construction Cost	5	4	4	5	5	5
Annual Maintenance Cost	5	4	4	5	5	5
Total Score	53	50	50	55	55	55

Table ES-5: 2012 Brooks East Corridor Options Evaluation Summary

Criterion	Option 1	Option 2	Option 3	Option 4
Corridor Length (miles)	213	203	224	214
Federal CSU (unit/miles/percentage of corridor)	GANPP 26/12% ¹	GANPP 26/13% ¹	GANPP 14/6% ¹	GANPP 14/7% ¹
Wild and Scenic Rivers	Kobuk WSR	Kobuk WSR	Kobuk WSR	Kobuk WSR
Salmon/Sheefish Rivers Total	11	17	14	20
Mapped Anadromous	3	5	3	5
Assumed Anadromous	8	12	11	15
Caribou Habitat	Less	Less	Less	Less
Threatened/Endangered Species/Critical Habitat	None	None	None	None
Wetland Habitats (miles)	60	78	41	59
Material Site Availability (percent of corridor with material site within 10 miles)	100%	100%	94%	93%
Total Large Bridges (number/length in ft)	9/4,180 ft	11/4,760 ft	10/3,950 ft	12/4,530 ft
Bridges Over 1,500 ft	None	None	None	None
Major Stream Crossings	132	142	154	164
Construction Cost ² (in millions)	\$400	\$410	\$430	\$450
Annual Maintenance Cost ³ (in millions)	\$8.30	\$8.10	\$8.60	\$8.40
Special Considerations				
Port Construction	None	None	None	None
Very Large River Crossings	None	None	None	None

1. Access through GANPP was identified in ANILCA.
2. Cost rounded to tens of millions.
3. Annual maintenance cost for road and maintenance camps.

Table ES-6: 2012 Brooks East Corridor Options Evaluation Summary

Criterion	Option 1	Option 2	Option 3	Option 4
Corridor Length	5	5	5	5
Federal CSU	5	5	5	5
Wild and Scenic Rivers	5	5	5	5
Salmon/Sheefish Rivers	5	5	5	5
Caribou Habitat	5	5	5	5
Threatened/Endangered Species/Critical Habitat	5	5	5	5
Wetland Habitats	4	3	4	4
Material Site Availability	5	5	5	5
Total Large Bridges	5	5	5	5
Construction Cost	5	5	5	5
Annual Maintenance Cost	5	5	4	5
Total Score	54	53	53	54

Table ES-7: Rail Corridor Evaluation Summary

Criterion	Brooks East ¹	Kanuti Flats ¹	Elliott Hwy ¹	Parks Hwy A	Parks Hwy B	Parks Hwy C	Parks Hwy D	DMTS Port	Cape Blossom	Selawik Flats	Cape Darby
Corridor Length (miles)				430	450	420	440	260	250	330	340
Federal CSU (unit/miles/percentage of corridor)				GANPP ² / 26 miles/6%	None	GANPP ² / 26 miles/6%	None	GANPP/CKNM/114 miles/44%	Selawik NWR/94 miles/38%	Selawik NWR/77 miles/23%	Selawik NWR/77 miles/23%
Wild and Scenic Rivers				Kobuk WSR ²	None	Kobuk WSR ²	None	Salmon WSR	Selawik WSR	Selawik WSR	Selawik WSR
Salmon/Sheefish Rivers				71	62	84	75	76	85	71	77
Mapped Anadromous				8	9	12	13	13	2	23	26
Assumed Anadromous				63	53	72	62	63	83	48	51
Caribou Habitat				Less	Less	Less	Less	More	More	More	More
Threatened/Endangered Species/Critical Habitat				None	None	None	None	Steller's eider/yellow-billed loon/polar bear	yellow-billed loon/polar bear	yellow-billed loon	spectacled eider/polar bear/yellow-billed loon
Wetland Habitats (miles)				151	138	141	129	40	144	78	98
Material Site Availability (percent of corridor with material site within 10 miles)				96%	87%	80%	72%	70%	10%	57%	58%
Total Large Bridges (number/length in ft)				13/7,470 ft Yukon River/2,720 ft	17/10,410 ft Yukon River/2,720 ft	13/7,730 ft Yukon River/2,720 ft	17/10,670 ft Yukon River/2,720 ft	19/8,440 ft Noatak River/ 1,560 ft	24/9,250 ft None	21/7,470 ft None	25/7,890 ft None
Bridges Over 1,500 ft				257	228	309	280	213	221	185	193
Major Stream Crossings											
Construction Cost (in millions) ³				\$1,880	\$1,990	\$1,990	\$2,010	\$1,250	\$1,330	\$1,560	\$1,570
Annual Maintenance Cost ⁴ (in millions)				\$17.30	\$18.00	\$16.90	\$17.60	\$10.60	\$10.20	\$13.80	\$14.10
Special Considerations				No	No	No	No	Yes	Yes	Yes	Yes
Port Construction				\$11.1	\$11.6	\$10.8	\$11.4	\$6.7	\$6.3	\$8.6	\$8.8
Railroad Annual Operating Cost (in millions)				Yukon River	Yukon River	Yukon River	Yukon River	Noatak River	None	None	None
Very Large Bridges											

1. Same as Road Corridor Summary Comparison - See Table ES-1.
2. Access through GANPP was identified in ANILCA.
3. Cost rounded to tens of millions.
4. Annual maintenance cost for road and maintenance camps.

Table ES-8: Rail Corridor Scoring Summary

Criterion	Brooks East ¹	Kanuti Flats ¹	Elliott Hwy ¹	Parks Hwy A	Parks Hwy B	Parks Hwy C	Parks Hwy D	DMTS Port	Cape Blossom	Selawik Flats	Cape Darby
Corridor Length				1	1	1	1	4	5	3	3
Federal CSU				5	5	5	5	0	0	0	0
Wild and Scenic Rivers				5	5	5	5	0	0	0	0
Salmon/Sheefish Rivers				2	3	1	2	2	1	2	2
Caribou Habitat				5	5	5	5	0	0	0	0
Threatened/Endangered Species/Critical Habitat				5	5	5	5	0	0	3	0
Wetland Habitats				0	1	1	1	4	1	3	2
Material Site Availability				5	4	3	3	2	0	1	1
Total Large Bridges				2	0	2	0	1	0	2	2
Construction Cost				0	0	0	0	2	2	0	0
Annual Maintenance Cost				0	0	0	0	3	4	2	2
Total Score				30	29	28	27	18	13	16	12

1. Same as Road Corridor Summary Comparison - See Table ES-2.