

## **APPENDIX F**

### **Preliminary Alternatives Data Collection, Scoring Summary**

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- F1. Preliminary Alternatives Data Collection Summary
- F2. Preliminary Alternatives Screening Scoring Summary

## Appendix F: Preliminary Alternatives Data Collection Summary

The 16 criteria used in the preliminary alternatives screening analysis are highlighted in yellow.

Preliminary Alternatives Data Collection	Route 1	Route 2a	Route 2b	Route 3
<b>Communities</b>				
Number of communities within 50 miles of corridor	13	12	12	14
Total population within 50 miles of corridor	2,338	2,762	2,762	3,417
Total cumulative straight line distance (in miles) between corridor and communities within 50 mile:	311	151	182	365
Ratio of total population of communities within 50 miles of corridor to cumulative distance between the corridor and those communities	7.5 people/mile	18.5 people/mile	15 people/mile	9.5 people/mile
Ratio of total population of communities within 50 miles to total length of the corridor plus cumulative distance between the corridor and those communities	3 people/mile	4 people/mile	4.5 people/mile	3.5 people/mile
Number of communities within 20 miles of corridor	5	9	8	5
Total population within 20 miles of corridor	351	2,191	2,175	1,232
Total cumulative straight line distance (in miles) between corridor and communities within 20 mile:	37	62	60	55
Ratio of total population of communities within 20 miles of corridor to cumulative distance between the corridor and those communities	9.5 people/mile	35.5 people/mile	36 people/mile	22.5 people/mile
Ratio of total population of communities within 20 miles to total length of the corridor plus cumulative distance between the corridor and those communities	1 person/mile	4 people/mile	4.5 people/mile	2 people/mile
Total distance between Fairbanks and Nome along corridor	713	709	665	742
<b>Resources (using metal prices derived from a three-month average ending July 15, 2009)</b>				
Total estimated gross value of significant mineral resources within 100 miles of corridor	\$27.5 billion	\$7.8 billion	\$7.8 billion	\$7.4 billion
Number of significant mineral resource occurrences within 100 miles of corridor	15	16	16	19
Total cumulative straight line distance (in miles) between corridor and resource occurrences within 100 mile:	694	727	715	637
Estimated gross mineral value per mile of access road built to sites within 100 miles:	\$39.5 million/mile	\$10.7 million/mile	\$10.9 million/mile	\$11.7 million/mile
Estimated gross mineral value per total mileage of corridor plus access roads to sites within 100 miles	\$24.2 million/mile	\$6.3 million/mile	\$6.7 million/mile	\$5.9 million/mile
Total estimated gross value of significant mineral resources within 50 miles of corridor	\$21.4 billion	\$5.6 billion	\$5.6 billion	\$5.3 billion
Number of significant mineral resource occurrences within 50 miles of corridor:	9	8	8	13
Total cumulative straight line distance (in miles) between corridor and resource occurrences within 50 mile:	273	163	151	220
Estimated gross mineral value per mile of access road built to sites within 50 miles	\$78.5 million/mile	\$34.1 million/mile	\$36.8 million/mile	\$24.3 million/mile
Estimated gross mineral value per total mileage of corridor plus access roads to sites within 50 miles	\$30.0 million/mile	\$8.3 million/mile	\$9.3 million/mile	\$6.4 million/mile
Total estimated gross value of lesser mineral resources within 50 miles of corridor	\$0.1 billion	\$0	\$0	\$0
Number of lesser mineral resource occurrences within 50 miles of corridor	100	115	117	113
<b>Land Ownership/Management</b>				
Miles through wilderness areas	0	0	0	0
Number of Wild & Scenic Rivers crossed and/or Wild & Scenic River corridors traversed	0	0	0	0
Miles through national parks, preserves, monuments, or wildlife refuges	32	0	0	0
Miles through federal-owned lands (includes State- and Native-selected land that has not been transferred)	228	231	200	284
Miles through Native-owned lands	42	144	120	64
Miles through State-owned lands	170	135	128	262
<b>Environmental Data</b>				
Miles through caribou wintering areas	199	172	172	223
Miles through designated T&E species critical habitat	0	0	0	54
Number of streams in the catalog of anadromous waters crossed	11	25	20	26
Total stream crossings	326	359	314	431
Miles through high-probability wetland areas and other waters of the U.S.	236	152	145	232
Number of recorded, known cultural sites intersected by corridor <sup>3</sup>	X	X	X	X
Number of times corridor crosses Iditarod Trail	0	0	0	3
Subsistence areas impacted by corridor <sup>3</sup>	X	X	X	X
<b>Engineering &amp; Cost Data</b>				
Length in miles of corridor	440	510	450	620
Total estimated construction cost	\$2.1 billion	\$2.9 billion	\$2.6 billion	\$3.2 billion
Estimated annual M&O costs	\$11 million	\$12 million	\$11 million	\$15 million

1 - Communities accessible via the existing interior contiguous highway system or via the Seward Peninsula highway system not included in total number of communities or population. Communities with a 2008 DCCED reported population of 0 were not included

2 - Significant mineral occurrences accessible via the existing interior contiguous highway system not included; Lesser mineral resources closer to the existing highway system than to a proposed corridor were not included

3 - Cultural resources & subsistence are critical issues to consider during route selection, but existing data precludes mapping and quantification of impacts

**Appendix F: Preliminary Alternatives Screening Scoring Summary**

Preliminary Alternatives Screening Criteria	Weight	Route 1		Route 2a		Route 2b		Route 3	
		Criteria Value	Avg. Score	Criteria Value	Avg. Score	Criteria Value	Avg. Score	Criteria Value	Avg. Score
<b>Communities - Maximize the population potentially served by corridor</b>	<b>4</b>	Weighted Score		Weighted Score		Weighted Score		Weighted Score	
Ratio of total population of communities within 50 miles of corridor to cumulative distance between the corridor and those communities	<b>0.5</b>	7.5 people/mile	1.5	18.5 people/mile	4.3	15 people/mile	3.8	9.5 people/mile	1.7
		0.8		2.2		1.9		0.8	
Ratio of total population of communities within 20 miles of corridor to cumulative distance between the corridor and those communities	<b>3</b>	9.5 people/mile	1.7	35.5 people/mile	4.7	36 people/mile	4.8	22.5 people/mile	3
		5		14		14.5		9	
Total distance between Fairbanks and Nome along corridor	<b>0.5</b>	713	2.8	709	2.8	665	4.2	742	2
		1.4		1.4		2.1		1	
<b>Subtotal - Communities</b>		<b>7.2</b>		<b>17.6</b>		<b>18.5</b>		<b>10.8</b>	
<b>Resources - Maximize the estimated value of resources accessible from the corridor</b>	<b>4</b>	Weighted Score		Weighted Score		Weighted Score		Weighted Score	
Total estimated gross value of significant mineral resources within 100 miles of corridor	<b>1</b>	\$27.5 billion	4.8	\$7.8 billion	2.2	\$7.8 billion	2.2	\$7.4 billion	1.7
		4.8		2.2		2.2		1.7	
Total estimated gross value of significant mineral resources within 50 miles of corridor	<b>3</b>	\$21.4 billion	4.8	\$5.6 billion	2	\$5.6 billion	2	\$5.3 billion	2
		14.5		6		6		6	
<b>Subtotal - Resources</b>		<b>19.3</b>		<b>8.2</b>		<b>8.2</b>		<b>7.7</b>	
<b>Subtotal - Communities &amp; Resources</b>		<b>26.5</b>		<b>25.8</b>		<b>26.7</b>		<b>18.5</b>	
<b>Land Ownership/Management Criteria - Minimize difficulty of ROW acquisition &amp; adverse impacts to lands</b>	<b>-2</b>	Weighted Score		Weighted Score		Weighted Score		Weighted Score	
Miles through national parks, preserves, monuments, or wildlife refuges	<b>-1</b>	32	5	0	0	0	0	0	0
		-5		0		0		0	
Miles through federal-owned lands (includes State- and Native-selected land that has not been transferred)	<b>-0.5</b>	228	3.2	231	3.2	200	2.5	284	4.2
		-1.6		-1.6		-1.3		-2.1	
Miles through Native-owned lands	<b>-0.5</b>	42	1.7	144	3.7	120	3.3	64	1.8
		-0.8		-1.8		-1.7		-0.9	
<b>Subtotal - Land Ownership/Management</b>		<b>-7.4</b>		<b>-3.4</b>		<b>-3</b>		<b>-3</b>	
<b>Environmental Criteria - Minimize adverse impacts to environment</b>	<b>-1</b>	Weighted Score		Weighted Score		Weighted Score		Weighted Score	
Miles through caribou wintering areas	<b>-0.2</b>	199	4	172	2.2	172	2.2	223	4
		-0.8		-0.4		-0.4		-0.8	
Miles through designated T&E species critical habitat	<b>-0.2</b>	0	0	0	0	0	0	54	4.5
		0		0		0		-0.9	
Number of streams in the catalog of anadromous waters crossed	<b>-0.1</b>	11	1.5	25	3.3	20	2.7	26	3.3
		-0.2		-0.3		-0.3		-0.3	
Total stream crossings	<b>-0.1</b>	326	2.5	359	2.8	314	2.3	431	4
		-0.3		-0.3		-0.2		-0.4	
Miles through high-probability wetland areas and other waters of the U.S.	<b>-0.2</b>	236	3	152	2	145	2	232	3
		-0.6		-0.4		-0.4		-0.6	
Number of times corridor crosses Iditarod Trail	<b>-0.2</b>	0	0	0	0	0	0	3	4
		0		0		0		-0.8	
<b>Subtotal - Environmental</b>		<b>-1.9</b>		<b>-1.4</b>		<b>-1.3</b>		<b>-3.8</b>	
<b>Engineering &amp; Cost Criteria - Maximize construction and operation feasibility, minimize cost</b>	<b>-3</b>	Weighted Score		Weighted Score		Weighted Score		Weighted Score	
Total estimated construction cost	<b>-2.5</b>	\$2.1 billion	1.7	\$2.9 billion	3.8	\$2.6 billion	2.8	\$3.2 billion	4.8
		-4.2		-9.6		-7.1		-12.1	
Estimated annual M&O costs	<b>-0.5</b>	\$11 million	2	\$12 million	3.2	\$11 million	2	\$15 million	4.5
		-1		-1.6		-1		-2.3	
<b>Subtotal - Engineering &amp; Cost</b>		<b>-5.2</b>		<b>-11.2</b>		<b>-8.1</b>		<b>-14.4</b>	
<b>Subtotal - Land Ownership/Management, Environmental, Engineering, &amp; Cost</b>		<b>-14.5</b>		<b>-16</b>		<b>-12.4</b>		<b>-21.2</b>	
<b>Subtotal - Communities &amp; Resources</b>		26.5		25.8		26.7		18.5	
<b>Subtotal - Land Ownership/Management, Environmental, Engineering, &amp; Cost</b>		-14.5		-16		-12.4		-21.2	
<b>Cumulative Score</b>		<b>12</b>		<b>9.8</b>		<b>14.3</b>		<b>-2.7</b>	
<b>Alternative advanced for further refined analysis?</b>		<b>YES</b>		<b>NO</b>		<b>YES</b>		<b>NO</b>	

The Average Score is the average of six individual scores.