

APPENDIX F
Study Area Tables

Appendix F includes tables of resources within the Study Area as defined by the Circular MFSA-2 (the applicable Circular MFSA-2 reference is included in the header). The Study Area includes the Facility Location and adjacent areas that could experience impacts. The Study Area varies by resource. Not all resources are affected by the Study Area and, therefore, are not included in this appendix.

LAND OWNERSHIP (CIRCULAR SECTION MFSA-2 SECTION 3.7(2))

TABLE F-1								
Land Ownership in the Study Area by Alternative Route								
Landowner	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	prop.	acres	prop.	acres	prop.	acres	prop.
FEDERAL ^a								
BLM	39,482	9%	47,390	12%	37,640	10%	49,082	11%
USBR	151	0%	0	0%	0	0%	0	0%
USDA - ARS	18,912	4%	4,915	1%	0	0%	13,734	3%
U.S. Government	14	0%	0	0%	0	0%	0	0%
Subtotal	58,560	14%	52,304	13%	37,640	10%	62,816	14%
STATE ^a								
DOC	503	<1%	0	0%	0	0%	0	0%
MDT ^b	0	0%	0	0%	5	<1%	0	0%
MFWP	47	<1%	47	<1%	0	0%	47	<1%
Montana State Trust Lands	17,961	4%	23,249	6%	19,402	5%	24,091	6%
State of Montana	2,300	1%	0	0%	0	0%	0	0%
Subtotal	20,811	5%	23,296	6%	19,407	5%	24,091	6%
LOCAL	621	<1%	91	<1%	91	<1%	96	<1%
PRIVATE	347,764	81%	326,127	81%	326,635	85%	347,259	80%
TRIBAL	0	0%	0	0%	0	0%	0	0%
PROJECT TOTAL ^a	427,756	-	401,818	-	383,772	-	432,262	-

^a Totals may not add up due to rounding.
^b Data does not include rights-of-way.

Note: BLM = Bureau of Land Management; USBR = U.S. Bureau of Reclamation; USDA - ARS = U.S. Department of Agriculture - Agricultural Research Service; DOC = Montana Department of Corrections; MDT = Montana Department of Transportation; and prop. = proportion of total, in percent.

Sources: Montana State Library, 2023b; Bureau of Land Management, 2022a

LAND USE AND LAND COVER (SECTION 3.7.15, SECTION 3.7.16)

TABLE F-2								
Land Use and Land Cover in the Study Area by Alternative Route								
Land Use / Land Cover	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	prop.	acres	prop.	acres	prop.	acres	prop.
RANGELAND ^{a,b}								
Grassland Systems	204,640	48%	198,788	49%	177,159	46%	206,683	48%
Shrubland and Steppe	70,591	17%	80,843	20%	75,203	20%	89,062	21%
Subtotal	275,231	64%	279,631	70%	252,362	66%	295,745	68%
AGRICULTURE ^b								
Cultivated Crops								
Pasture / Hay								
Subtotal	75,838	18%	58,776	15%	57,270	15%	60,793	14%
FOREST AND WOODLAND SYSTEMS	36,053	8%	20,875	5%	31,634	8%	29,434	7%
SPARSE AND BARREN SYSTEMS	17,188	4%	18,421	5%	19,536	5%	20,640	5%
OPEN WATER / WETLAND AND RIPARIAN	20,803	5%	15,535	4%	15,208	4%	15,356	4%
RECENTLY DISTURBED OR MODIFIED	2,365	1%	8,557	2%	7,762	2%	12,255	3%
DEVELOPED ^b								
Commercial / Industrial	495	<1%	243	<1%	249	<1%	243	<1%
High-Intensity Residential ^d	141	<1%	71	<1%	73	<1%	72	<1%
Subtotal	636	<1%	314	<1%	322	<1%	315	<1%
LOW-INTENSITY RESIDENTIAL ^e	1,058	<1%	404	<1%	425	<1%	408	<1%
DEVELOPED OPEN SPACE (LANDSCAPED) ^f	684	<1%	272	<1%	247	<1%	321	<1%
ROADS AND RAILROADS								
Other Roads	3,668	1%	2,298	1%	2,565	1%	2,490	1%
Major Roads	1,369	<1%	1,151	<1%	975	<1%	1,000	<1%
Railroad	752	<1%	370	<1%	365	<1%	359	<1%
Interstate	1,916	<1%	176	<1%	0	0%	0	0%
Subtotal	7,704	2%	3,994	1%	3,905	1%	3,849	1%
MINING AND RESOURCE EXTRACTION ^b								
Gas and Gas Storage	26	<1%	32	<1%	32	<1%	29	<1%

TABLE F-2

Land Use and Land Cover in the Study Area by Alternative Route

Land Use / Land Cover	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	prop.	acres	prop.	acres	prop.	acres	prop.
Injection	3	<1%	12	<1%	12	<1%	11	<1%
Oil and Oil and Gas	8	<1%	20	<1%	20	<1%	18	<1%
Quarries, Strip Mines, and Gravel Pits	2,265	1%	2,484	1%	2,348	1%	2,547	1%
Subtotal	2,302	1%	2,549	1%	2,412	1%	2,605	1%

^a Potential rangeland includes data combined from Grassland Systems and Shrubland, and Steppe, mapped by the Montana Landcover Framework.

^b Subtotals may not add up due to rounding.

^c Includes areas with introduced vegetation, where land cover is significantly altered due introduced species and natural vegetation types are no longer recognizable, and recently burned areas.

^d Defined as a mixture of constructed materials and vegetation, with impervious surfaces accounting for 50-80% of total cover. This land cover is primarily urban single-family housing units but may also include associated paved roads or other large areas of impervious surfaces.

^e Defined as a mixture of constructed materials and vegetation, with impervious surfaces accounting for 20-50% of total cover. This land cover is primarily rural or suburban single-family housing units but may also include associated paved roads.

^f Defined as vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes, where impervious surfaces account for less than 20% of total cover (e.g., highway and railway rights-of-way and graveled rural roads).

Note: prop. = proportion of Study Areas, in percent.
Source: Montana Natural Heritage Program, 2017

TABLE F-3

Cropland Types Located in the Study Areas by Alternative

Cropland Type ^a	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	prop.	acres	prop.	acres	prop.	acres	prop.
IRRIGATED CROPLAND ^b								
Flood	8,758	2%	877	<1%	251	<1%	702	<1%
Pivot	2,337	1%	1,132	<1%	1,870	1%	260	<1%
Sprinkler	176	<1%	0	0%	0	0%	0	0%
Subtotal	11,271	3%	2,009	1%	2,121	1%	962	<1%
NON-IRRIGATED CROPLAND ^b								
Fallow cropland	42,175	10%	37,625	9%	36,367	10%	41,543	10%
Hay	10,520	3%	11,800	3%	11,655	3%	11,066	3%
Subtotal	52,694	12%	49,435	12%	48,022	13%	52,609	12%
POTENTIAL TIMBER PRODUCTION ^b								
Commercial ^c	21,333	5%	10,622	3%	21,642	6%	25,101	6%
Non-commercial ^d	2,762	1%	1,027	<1%	1,732	1%	1,688	<1%
Subtotal	24,095	6%	11,649	3%	23,374	6%	26,789	6%

^a Cropland type based on the Revenue Final Land Unit Classification of private agricultural lands not classified as grazing.

^b Subtotals may not add up due to rounding.

^c Defined as contiguous land of 15 acres or more in one ownership that is capable of producing timber that can be harvested in commercial quantity and is producing timber unless trees have been removed by disaster.

^d Forested land that does not meet the minimum forest productivity requirement and classified as non-commercial due to species (e.g., aspen, cottonwood, juniper, limber pine).

Note: prop. = proportion of Study Area.

Source: Montana Department of Revenue, 2019

TABLE F-4

Developed Residential, Commercial, and Industrial Areas in the Study Area by Alternative

Resource	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	prop.	acres	prop.	acres	prop.	acres	prop.
CITIES, TOWNS, AND UNINCORPORATED COMMUNITIES ^a								
City of Colstrip	2,590	1%	2,483	1%	2,483	1%	2,564	1%
City of Miles City	1,157	<1%	0	0%	0	0%	0	0%
Unincorporated Community of Rosebud	495	<1%	0	0%	0	0%	0	0%
Town of Plevna	0	0%	378	<1%	378	<1%	378	<1%
Subtotal	4,242	1%	2,862	1%	2,862	1%	2,942	
INDUSTRIAL AND COMMERCIAL AREAS	495	<1%	243	<1%	249	<1%	243	<1%
RESIDENTIAL AREAS ^b	141	<1%	71	<1%	73	<1%	72	<1%

^a Subtotals may not add up due to rounding.
^b Includes lands mapped as high-intensity residential to represent highly populated areas.
 Note: prop = proportion of Facility Location.
 Source: Montana Natural Heritage Program, 2017; U.S. Census Bureau, 2019

TABLE F-5				
Structures Located in the Study Areas by Alternative Route (count) ^a				
Structure Type	Alternative A	Alternative B	Alternative C	Alternative D
RESIDENCES				
Number of Residential Clusters ^b	17 (2)	0	1	0
Residences Outside of a Cluster ^c	99	24 ^d	32 ^d	25 ^d
Subtotal	116	24	32	25
SCHOOLS				
	1	0	0	0
MAJOR FARM SUPPORT BUILDINGS (BARNS/SHEDS) ^e				
	0	4	7	7
PUBLIC BUILDINGS				
	1	0	0	0
STORE				
	0	0	0	1
OTHER STRUCTURES ^f				
	47	8	14	29

^a Study Area based on a 0.5-mile buffer (1-mile corridor) around the centerline.

^b Residential clusters are defined as 5 or more dwelling units per 20 acres based on a circle of about 1,000 feet in diameter outside of municipal boundaries (Circular MFSA-2 Section 3.7(2)(a)).

^c Individual residences outside of a cluster and outside of municipal boundaries.

^d Identified as a potential residence based on aerial review.

^e Major farm support buildings were determined through a review of aerial photography; they were previously labeled as unspecified structures.

^f Other structures includes structures of an unspecified type as driveway classified by the Montana State Library (2023d). Based on aerial imagery these structures appear to be driveway and cemetery archways, construction pads, O&M buildings, security sheds, and a switchyard.

Source: Montana State Library, 2023d

TABLE F-6				
Rights-of-Way in the Study Areas by Alternative Route (miles)				
	Alternative A	Alternative B	Alternative C	Alternative D
Electric Transmission Lines (50 kilovolt or Greater)	177.7	103.3	77.5	67.4
Federal Highways ^a	216.3	61.0	30.5	39.2
State Highways	30.2	30.0	34.8	28.6
Railroads	40.7	20.8	17.3	18.9
County Roads	0.7	0.7	0.7	2.6
Roads With Scenic Designation	0	0	0	0

^a Routes identified as interstate or U.S. highway.

Source: U.S. Census Bureau, 2021, 2022; Department of Homeland Security, 2022; U.S. Department of Transportation, 2024

TABLE F-7

Recreation and Special Interest Areas in the Study Area by Alternative Route

	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	prop.	acres	prop.	acres	prop.	acres	prop.
MFWP (Bice) Conservation Easements	0	0%	0	0%	7,806	2%	0	0%
MFWP Fishing Access Sites ^b	0	0%	23	<1%	0	0%	23	<1%
MLR Conservation Easements	2,541	1%	6,447	2%	0	0%	5,042	1%
Montana State Trust Lands Fishing Access Sites ^b	33	<1%	0	0%	0	0%	0	0%
The Nature Conservancy Conservation Easement	135	<1%	0	0%	0	0%	0	0%
NRCS Conservation Easement	47	<1%	0	0%	0	0%	0	0%
City Parks	9	<1%	0	0%	0	0%	0	0%
Fort Keogh Research Lab ^b	18,912	4%	4,915	1%	0	0%	13,734	3%

^a Bureau of Land Management (BLM) lands are presented in Table 7.3.1-1.

^b Fishing access sites and the Fort Keogh Research Lab are included as public lands in land ownership table.

Note: MFWP = Montana Fish, Wildlife and Parks; MLR = Montana Land Reliance; NRCS = Natural Resources Conservation Service; and prop. = proportion of total Study Areas, in percent.

Source: Montana State Library, 2023c,e; Bureau of Land Management, 2022a

VEGETATION (BIOLOGICAL RESOURCES (CIRCULAR MFSA-2, SECTION 3.7(12))

TABLE F-8							
Montana Plant Species of Concern with Documented Occurrences in the Study Area by Alternative Route (count) ^a							
Species	Habitat	State Rank	Date Last Observed	Alternative A	Alternative B	Alternative C	Alternative D
Barr's milkvetch (<i>Astragalus barrii</i>)	Sparsely vegetated knobs and buttes.	S3	1975	1	1	1	1
Bractless blazingstar (<i>Mentzelia nuda</i>)	Known from a few locations in the eastern half of the state on sandy or gravelly soil of open hills and roadsides.	S1	1941	1	1	1	1
Double bladderpod (<i>Physaria brassicoides</i>)	Known in Montana from a handful of populations in steep, sparsely-vegetated habitat.	S3	2005	1	0	0	0
Heavy sedge (<i>Carex gravida</i>)	Found at a few scattered locations in eastern Montana, including Rosebud and Fallon counties. Grows in woody draws under green ash and thickets of serviceberry, quaking aspen, and chokecherry.	S3	2005	1	1	1	1
Lead plant (<i>Amorpha canescens</i>)	Occurs in grasslands and woodlands, often on sandy soils.	S3	1983	1	1	1	1
Mat buckwheat (<i>Eriogonum caespitosum</i>)	Rare in Montana, where it has been documented from a few sites from Beaverhead County. Occurs on dry, stony limestone sagebrush steppe.	S2	1959	1	0	0	0
Nine-anther prairie clover (<i>Dalea enneandra</i>)	In Montana, known from a few poorly documented occurrences in the eastern half of the state. Found on gravelly-soiled grasslands and slopes on the plains.	S2	1993	5	0	0	1 ^c
Pea-green scale lichen (<i>Psora rubiformis</i>)	In Montana widely scattered populations have been found in the northwest, southwest, and southeast parts of the state on soil in fissures of rock in alpine sites.	S1	1979	1	0	0	1
Persistent-sepal yellow-cress (<i>Rorippa calycina</i>)	Known in Montana from four records. Inhabits sparsely vegetated, moist sandy to muddy banks of streams, ponds, and manmade reservoirs near the high water line.	SH	1854	1	0	0	0
Plains phlox ^b (<i>Phlox andicola</i>)	Reaches the western margin of its range in Montana, where it is found mainly on sandy soils in grasslands and ponderosa pine woodland. Often associated with sparsely vegetated erosional blowouts and loose sand below sandstone outcrops.	S3	2018	0	0	0	1
Raceme milkvetch (<i>Astragalus racemosus</i>)	Small populations have been documented in Carter and Fallon counties in grasslands on heavy soils derived from shale.	S2	2006	1	1	1	1
Smooth goosefoot (<i>Chenopodium subglabrum</i>)	Known from a few locations in Montana in extremely loose, sandy soils, typically in early successional, sparsely-vegetated habitats, on sand dunes and occasional river sandbars or sandy terraces.	S2	1973	1	0	0	0

TABLE F-8

Montana Plant Species of Concern with Documented Occurrences in the Study Area by Alternative Route (count) ^a

Species	Habitat	State Rank	Date Last Observed	Alternative A	Alternative B	Alternative C	Alternative D
Wood lily (<i>Lilium philadelphicum</i>)	Patchy, but wide distribution in Montana. Found in moist, usually calcareous meadows, grasslands, fens, woodlands; valleys.	S3	2017	0	0	1	0
PROJECT TOTAL				15	5	6	8

^a The Study Area is a 2-mile-wide corridor.

^b Potential Species of Concern.

^c Last documented in 1975 based on the Montana Natural Heritage Program (2023) occurrence data.

Note: S1 = Critically Imperiled, S2 = Imperiled, S3 = Vulnerable, S4 = Apparently Secure, SH = Possibly Extirpated; FL = Facility Location

Sources: Montana Natural Heritage Program, 2023d; Montana Natural Heritage Program and Montana Fish, Wildlife, and Parks, 2023; NatureServe, 2023

WILDLIFE (BIOLOGICAL RESOURCES (CIRCULAR MFSA-2, SECTION 3.7(12))

TABLE F-9								
Big Game General Distribution in the Study Areas								
Resource	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	proportion	acres	proportion	acres	proportion	acres	proportion
Mule Deer	213,220	100%	200,486	100%	191,348	100%	219,484	100%
White-tailed Deer	101,631	48%	72,009	36%	71,983	38%	69,033	31%
Pronghorn	107,998	51%	140,163	70%	128,939	67%	144,525	66%
Elk	48	<1%	27	<1%	12,021	6%	0	0%
Bighorn Sheep (Blue Hills Habitat)	44,706	21%	37,524	19%	28,976	15%	44,788	20%
SPECIES HABITAT TOTAL^a	467,603	—	450,209	—	433,267	—	477,830	—

^a Species Habitat Total contains overlapping areas but has been summed to provide a relative comparison of species habitat supported by each alternative.
 Note: proportion = proportion of the total acreage of the Study Area
 Sources: Montana Fish, Wildlife, and Parks, 2022b

TABLE F-10								
Big Game Winter Distribution Areas in the Study Areas								
Resource	Alternative A		Alternative B		Alternative C		Alternative D	
	acres	proportion	acres	proportion	acres	proportion	acres	proportion
Mule Deer	71,665	34%	69,625	35%	90,545	47%	79,902	36%
White-tailed Deer	26,310	12%	5,313	3%	6,300	3%	3,615	2%
Pronghorn	1,228	<1%	6,107	3%	13,300	7%	16,853	8%
SPECIES HABITAT TOTAL^a	99,203	—	81,045	—	110,145	—	16,853	—

^a Species Habitat Total contains overlapping areas but has been summed to provide a relative comparison of species habitat supported by each alternative.
 Note: proportion = proportion of the total acreage of the Study Area
 Sources: Montana Fish, Wildlife, and Parks, 2022b

TABLE F-11

Terrestrial Wildlife Species Protected Under the ESA, Under ESA Review, or Petitioned for ESA Listing in the Study Area

Species	Status (Year) ^a	Potential Habitat in the Study Areas	Habitat Suitability ^{b, c, d} (acres)				Documented Occurrence in Study Area	Likelihood to Occur in Study Area ^e
			Alternative A	Alternative B	Alternative C	Alternative D		
MAMMALS								
Little brown bat (LBBA) (<i>Myotis lucifugus</i>)	UR (2024)	Roosting habitat includes manmade structures (e.g., attics, barns, bridges), trees, and occasionally rock crevices near water. There is no documented hibernacula (e.g., caves and mines) in the Study Areas (MNHP and MFWP, 2023; Bachen et al. 2020).	LS: 181,324 MS: 15,908 <u>OS: 0</u> All: 197,232	LS: 175,747 MS: 3,877 <u>OS: 0</u> All: 179,624	LS: 167,128 MS: 4,222 <u>OS: 0</u> All: 171,350	LS: 191,301 MS: 3,919 <u>OS: 0</u> All: 195,220	A,B,C,D	Possible: A,B,C,D
Northern long-eared bat (NLEB) (<i>Myotis septentrionalis</i>)	FE	Roosting habitat includes mature-growth forests (≥ 10 acres) with snags or trees with cavities and loose bark; occasionally will use manmade structures (e.g., barns or bat houses). There is no documented hibernacula (e.g., caves and mines) in the Study Areas (MNHP and MFWP, 2023; Bachen et al. 2020). The species is known to occur in wooded riparian areas of the Yellowstone River (USFWS 2021a).	LS: 0 MS: 0 <u>OS: 0</u> All: 0	LS: 0 MS: 0 <u>OS: 0</u> All: 0	LS: 0 MS: 0 <u>OS: 0</u> All: 0	LS: 0 MS: 0 <u>OS: 0</u> All: 0	None	Possible: A, B,C,D
BIRDS								
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	UR (2028)	Relies on ponderosa pine and pine-juniper woodlands (MNHP and MFWP, 2023). Year-round resident of central and eastern Montana (MFG, 2022).	LS: 149,295 MS: 15,631 <u>OS: 0</u> All: 164,929	LS: 135,270 MS: 19,073 <u>OS: 0</u> All: 153,343	LS: 120,463 MS: 22,817 <u>OS: 0</u> All: 143,280	LS: 143,641 MS: 26,297 <u>OS: 0</u> All: 169,938	A,B,C,D	Possible: A,B,C,D
Piping plover (<i>Charadrius melodus</i>)	FT	Stopover habitat in open areas with gravelly and/or sandy substrate with little to no vegetation; along shorelines and sandbars of rivers, alkaline waterbodies, and ponds (MNHP and MFWP, 2023; USFWS 2023a).	LS: 0 MS: 0 <u>OS: 0</u> All: 0	LS: 0 MS: 0 <u>OS: 0</u> All: 0	LS: 0 MS: 0 <u>OS: 0</u> All: 0	LS: 0 MS: 0 <u>OS: 0</u> All: 0	None	Unlikely: A,B,C,D
Whooping crane (<i>Grus americana</i>)	FE	Stopover habitat in or near wetlands and croplands during spring and fall migration (MNHP and MFWP, 2023; Pearse et al. 2015). Two historic observations recorded in Custer County (1974) and Rosebud County (1985) (MNHP, 2023b). The western edge of the species' primary migration corridor is at the Montana–North Dakota boundary (Pearse et al., 2018).	LS: 34,061 MS: 490 <u>OS: 0</u> All: 34,551	LS: 36,886 MS: 0 <u>OS: 0</u> All: 36,886	LS: 31,362 MS: 0 <u>OS: 0</u> All: 31,362	LS: 31,942 MS: 0 <u>OS: 0</u> All: 31,941	A	Possible: A,B,C,D

TABLE F-11

Terrestrial Wildlife Species Protected Under the ESA, Under ESA Review, or Petitioned for ESA Listing in the Study Area

Species	Status (Year) ^a	Potential Habitat in the Study Areas	Habitat Suitability ^{b, c, d} (acres)				Documented Occurrence in Study Area	Likelihood to Occur in Study Area ^e
			Alternative A	Alternative B	Alternative C	Alternative D		
INVERTEBRATES								
Dakota skipper (<i>Hesperia dacotae</i>)	T	Type B reproductive habitat includes dense stands of bunchgrass and needlegrasses (USFWS 2018). Foraging habitat requires nectar-producing forbs, such as purple coneflower (<i>Echinacea angustifolia</i>), bluebell bellflowers (<i>Campanula rotundifolia</i>), and blanket flower (<i>Gaillardia aristata</i> ; Dana 1991). No known occurrences in Montana, although USFWS habitat models indicate their range could extend into extreme eastern Montana (Barnes et al. 2024), and North Plains' 2023 field evaluations identified low quality habitat at the Montana/North Dakota border. Based on the USFWS potentially undisturbed lands layer, there are between 90,969 and 107,545 acres of unbroken grasslands in the Study Areas (Prairie Pothole Joint Venture 2019).	UG: 90,969	UG: 102,301	UG: 96,581	UG: 107,545	None	Possible: A,B,C,D
Monarch butterfly (<i>Danaus plexippus</i>)	C (2024)	Foraging and reproductive habitat in open habitat with flowering plants and milkweed (larval host plant) (MNHP and MFWP, 2023; USFWS 2020c). Two documented occurrences in Custer and Rosebud Counties (MNHP, 2023b). Based on the USFWS potentially undisturbed lands layer, there are between 90,969 and 107,545 acres of unbroken grasslands in the Study Areas (Prairie Pothole Joint Venture 2019).	LS: 148,117 MS: 39,225 <u>OS: 2,079</u> All: 189,421	LS: 151,682 MS: 14,948 <u>OS: 855</u> All: 167,485	LS: 143,286 MS: 13,928 <u>OS: 855</u> All: 158,069	LS: 168,410 MS: 16,682 <u>OS: 1,010</u> All: 186,102	A	Likely: A Possible: B,C,D
Western regal fritillary (<i>Speyeria idalia occidentalis</i>)	UR (2024)	Foraging and reproductive habitat in tall grass and dry or wet prairies, meadows, and wet fields with flowering plants and violets (larval host plant) (MNHP and MFWP, 2023; USFWS, 2020d). One historic observation made in Custer County in the late 1800s (MNHP and MFWP, 2023; MNHP, 2023b). Based on the USFWS potentially undisturbed lands layer, there are between 90,969 and 107,545 acres of unbroken grasslands in the Study Areas (Prairie Pothole Joint Venture 2019).	UG: 90,969	UG: 102,301	UG: 96,581	UG: 107,545	None	Possible: A,B,C,D

TABLE F-11

Terrestrial Wildlife Species Protected Under the ESA, Under ESA Review, or Petitioned for ESA Listing in the Study Area

Species	Status (Year) ^a	Potential Habitat in the Study Areas	Habitat Suitability ^{b, c, d} (acres)				Documented Occurrence in Study Area	Likelihood to Occur in Study Area ^e
			Alternative A	Alternative B	Alternative C	Alternative D		
American bumble bee (<i>Bombus pensylvanicus</i>)	UR (2026)	Foraging and reproductive habitat in open habitat such as farmlands, fields, tall grasslands, and prairie with flowering plants (MNHP and MFWP, 2023). Based on the USFWS potentially undisturbed lands layer, there are between 90,969 and 107,545 acres of unbroken grasslands in the Study Areas (Prairie Pothole Joint Venture 2019).	UG: 90,969	UG: 102,301	UG: 96,581	UG: 107,545	None	Possible: A,B,C,D
Suckley's cuckoo bumble bee (<i>Bombus suckleyi</i>)	UR (2025)	Foraging and reproductive habitat is the same habitat as its preferred host species, the Western bumble bee (see below). Based on the USFWS potentially undisturbed lands layer, there are between 90,969 and 107,545 acres of unbroken grasslands in the Study Areas (Prairie Pothole Joint Venture 2019).	LS: 82,829 MS: 13,038 <u>OS: 0</u> All: 95,867	LS: 46,455 MS: 12,876 <u>OS: 0</u> All: 59,331	LS: 58,660 MS: 12,877 <u>OS: 0</u> All: 71,537	LS: 71,852 MS: 12,528 <u>OS: 0</u> All: 84,380	None	Possible: A,B,C,D
Variable cuckoo bumble bee (<i>Bombus variabilis</i>)	UR (2026)	Foraging and reproductive habitat is the same habitat as its preferred host species, the American bumble bee (see above) (NDGF 2019; Tyler 2021). Based on the USFWS potentially undisturbed lands layer, there are between 90,969 and 107,545 acres of unbroken grasslands in the Study Areas (Prairie Pothole Joint Venture 2019).	UG: 90,969	UG: 102,301	UG: 96,581	UG: 107,545	None	Possible: A,B,C,D
Western bumble bee (<i>Bombus occidentalis</i>)	UR (2024)	Foraging and reproductive habitat in open habitat with flowering plants (e.g., open grasslands, parks, gardens, sagebrush steppe, and meadows), with nests occasionally found aboveground in abandoned ground-nesting bird nests, stumps, and logs (MNHP and MFWP, 2023; WDFW 2022). One historic recorded occurrence in Rosebud County in 1903 (MNHP, 2023b). Based on the USFWS potentially undisturbed lands layer, there are between 90,968 and 109,092 acres of unbroken grasslands in the Study Areas (Prairie Pothole Joint Venture 2019).	LS: 48,819 MS: 66 <u>OS: 0</u> All: 48,885	LS: 42,924 MS: 0 <u>OS: 0</u> All: 42,924	LS: 39,338 MS: 763 <u>OS: 0</u> All: 40,101	LS: 42,607 MS: 230 <u>OS: 0</u> All: 42,837	None	Possible: A,B,C,D

TABLE F-11

Terrestrial Wildlife Species Protected Under the ESA, Under ESA Review, or Petitioned for ESA Listing in the Study Area

Species	Status (Year) ^a	Potential Habitat in the Study Areas	Habitat Suitability ^{b, c, d} (acres)				Documented Occurrence in Study Area	Likelihood to Occur in Study Area ^e
			Alternative A	Alternative B	Alternative C	Alternative D		
<p>^a Year = Anticipated decision year.</p> <p>^b LS = low suitability; MS = moderate suitability; OS = optimal suitability; UG = Unbroken Grasslands</p> <p>^c The Montana Natural Heritage Program (MNHP) conducts habitat suitability modeling for certain species.</p> <p>^d The USFWS potentially undisturbed lands layer was used when MNHP habitat suitability models were not available.</p> <p>^e Occurrence potential is based on a combination of a species being on a USFWS IPaC report, species range, and known occurrences.</p> <p>^f Historic occurrence, documented over 30 years ago.</p> <p>Note: ESA = Endangered Species Act; C= candidate; FE= federally endangered; FT= federally threatened; UR= currently under review by USFWS for potential listing; GR = general range; UG = unbroken grassland; LS = low suitability habitat; MS = moderate suitability habitat; ND = no data</p> <p>Sources: U.S. Fish and Wildlife Service, 2023b,c; Montana Natural Heritage Program and MFWP, 2023; Montana Natural Heritage Program, 2022b; and Prairie Pothole Joint Venture, 2019.</p>								

TABLE F-12

BLM Sensitive Species with Recent Occurrences (1993 and later) in the Study Areas ^a

Species	Habitat	Alternative A	Alternative B	Alternative C	Alternative D
MAMMALS					
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	Open grasslands and shrublands with little vegetation	Yes	Yes	Yes	Yes
Swift fox (<i>Vulpes velox</i>)	Relatively flat, open prairie grasslands and arid plains	Yes	Yes	No	Yes
Hoary bat (<i>Lasiurus cinereus</i>)	Conifer and hardwood forests during the summer; open water and riparian corridors are important for foraging	Yes	Yes	Yes	Yes
Spotted bat (<i>Euderma maculatum</i>)	Generally found in open, arid habitats with juniper and/or sagebrush; forage near water and open meadows	Yes	Yes	Yes	Yes
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Variety of habitats where caves or abandoned mines are nearby; trees and foliage are important for foraging	Yes	No	No	No
BIRDS					
American bittern (<i>Botaurus lentiginosus</i>)	Freshwater wetlands with dense, emergent vegetation	Yes	Yes	No	Yes
Baird's sparrow (<i>Centronyx bairdii</i>)	Native prairie and grasslands with tame grasses	Yes	Yes	Yes	Yes
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Forested and riparian areas near waterbodies such as lakes, rivers, and streams	Yes	Yes	Yes	Yes
Black tern (<i>Chlidonius niger</i>)	Wetlands, marshes, and ponds with emergent vegetation	Yes	Yes	No	Yes
Black-billed cuckoo (<i>Coccyzus erythrophthalmus</i>)	Riparian areas, wooded draws, forest edges, and thickets	Yes	Yes	No	No
Brewer's sparrow (<i>Spizella breweri</i>)	Shrub/scrub landscapes dominated by sagebrush	Yes	Yes	Yes	Yes
Burrowing owl (<i>Athene cunicularia</i>)	Open grasslands where abandoned burrows are present	Yes	Yes	Yes	Yes
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	Native pastures and grasslands with short to medium grasses	Yes	Yes	Yes	Yes
Common tern (<i>Sterna hirundo</i>)	Nests on islands of waterbodies; islands generally have little vegetation and sandy or pebbly soil	Yes	Yes	Yes	No
Ferruginous hawk (<i>Buteo regalis</i>)	Mixed-grass prairie, shrub-grasslands, and sagebrush steppe; sometimes mixed with trees such as cottonwoods, pines, and junipers	Yes	Yes	Yes	Yes
Forster's tern (<i>Sterna forsteri</i>)	Large marshes with extensive reed beds or muskrat houses are the preferred breeding habitat; also occasionally found along marshy borders of lakes and reservoirs	Yes	Yes	Yes	Yes
Franklin's gull (<i>Leucophaeus pipixcan</i>)	Permanent prairie marshes, ponds, and wetlands with varying sizes of open water and emergent vegetation	Yes	Yes	Yes	Yes

TABLE F-12

BLM Sensitive Species with Recent Occurrences (1993 and later) in the Study Areas ^a

Species	Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Golden eagle (<i>Aquila chrysaetos</i>)	Cliffs and large trees are important for nesting; open prairies and woodlands are used for foraging	Yes	Yes	Yes	Yes
Greater sage-grouse ^b (<i>Centrocercus urophasianus</i>)	Adaptable to various habitats with sagebrush present such as riparian meadows, steppe, and shrubland	Yes	Yes	Yes	Yes
Horned grebe (<i>Podiceps auratus</i>)	Shallow freshwater ponds and marshes with beds of emergent vegetation	Yes	No	No	No
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Open areas with short vegetation such as mowed roadsides, agricultural fields, and riparian areas	Yes	Yes	Yes	Yes
Long-billed curlew (<i>Numenius americanus</i>)	Nests in moist meadows and mixed grass prairies with short vegetation	Yes	No	No	No
Mountain plover ^b (<i>Charadrius montanus</i>)	Shortgrass prairie; often near prairie dog towns	Yes	No	No	No
Peregrine falcon (<i>Falco peregrinus</i>)	Open landscapes with cliffs or vertical overhangs nearby for nesting; often near water	No	No	No	No
Red-headed woodpecker (<i>Melanerpes erythrocephalus</i>)	Riparian forests, open savannah with sufficient trees and/or snags, and burned areas	Yes	Yes	Yes	Yes
Sage thrasher (<i>Oreoscoptes montanus</i>)	Areas dominated by sagebrush with little to no grass cover	No	No	No	No
Sprague's pipit (<i>Anthus spragueii</i>)	Native prairie and grasslands with intermediate vegetation height	Yes	Yes	Yes	No
Veery (<i>Catharus fuscescens</i>)	Willow thickets, disturbed cottonwood stands, and riparian habitats	No	No	No	No
REPTILES					
Snapping turtle (<i>Chelydra serpentina</i>)	Shallow waters of streams, creeks, and ponds; often with sandy or muddy bottoms	Yes	Yes	Yes	Yes
Spiny softshell (<i>Apalone spinifera</i>)	Large rivers and tributaries with sandy or muddy bottoms and slow moving water	Yes	Yes	Yes	Yes
Greater short-horned lizard (<i>Phrynosoma hernandesi</i>)	Areas with open, sun-baked soil; often in short grass and/or sagebrush habitats	Yes	Yes	Yes	Yes
Western milksnake ^b (<i>Lampropeltis gentilis</i>)	Open areas with sandy or rocky soils; often in sagebrush-grassland habitats	Yes	No	No	No
Western (plains) hog-nosed snake ^b (<i>Heterodon nasicus</i>)	Open areas with sandy soils; often in sagebrush-grassland habitats but can also use farmlands and floodplains	Yes	Yes	Yes	Yes

TABLE F-12

BLM Sensitive Species with Recent Occurrences (1993 and later) in the Study Areas ^a

Species	Habitat	Alternative A	Alternative B	Alternative C	Alternative D
AMPHIBIANS					
Great Plains toad ^b (<i>Anaxyrus cognatus</i>)	Upland grasslands, stream valleys, rainwater pools, and other floodplain habitats	Yes	Yes	Yes	Yes
Northern leopard frog (<i>Lithobates pipiens</i>)	Low elevation and valley bottom ponds, spillway ponds, beaver ponds, stock reservoirs, lakes, creeks, pools in intermittent streams, warm water springs, potholes, and marshes	Yes	Yes	Yes	Yes
INVERTEBRATES					
A mayfly ^b (<i>Raptoheptagenia cruentata</i>)	Large perennial streams and rivers with sandy and/or gravelly substrate	Yes	No	No	No
Western bumble bee (<i>Bombus occidentalis</i>)	Open grasslands, prairie, meadows, and sagebrush steppe; can also be found in urban gardens	No	No	No	No
PROJECT TOTAL (count)		33	27	23	24

^a Due to the inclusion of access roads in the Facility Location analysis, the Study Area could lack a species found within the Facility Location, if an access road reaches beyond the Study Area corridor.

^b These species are listed as SOC with ranks S1 or S2 and are further addressed under State Species of Concern.

Note: Yes = recent occurrence in the Study Area (1993 and later); No = no recent occurrence in the Study Area. If no date information was available, the occurrence was noted as a recent occurrence. See Appendix G for historic occurrences of species (pre-1993).

Sources: Bureau of Land Management, 2020; Montana Natural Heritage Program, 2023; eBird, 2023

TABLE F-13

Number of Montana Wildlife Species of Concern (All State Ranks) with Recent Occurrences (1993 and later) in Study Areas (counts) ^{a,b}

	Alternative A	Alternative B	Alternative C	Alternative D
Recent Occurrences	51	45	38	40

^a See Appendix G for historic occurrences of species (pre-1993).

^b If no date information was available, the occurrence was included within recent occurrences.

Source: Montana Natural Heritage Program, 2023a

TABLE F-14

Montana State Rank S1 and S2 Terrestrial Species of Concern with Recent Occurrences (1993 and later) in the Study Areas ^{a,b}

Species	Habitat	Alternative A	Alternative B	Alternative C	Alternative D
MAMMALS					
Swift fox ^d	Lowland/Prairie Grassland	Yes	Yes	No	Yes
<i>Vulpes velox</i>	Ingomar Focal Area				
BIRDS					
Least tern (S1)	Floodplain and Riparian	No	No	No	No
<i>Sternula antillarum</i>	Open Water Ingomar Focal Area				
Mountain plover (S2)	Floodplain and Riparian	Yes	No	No	No
<i>Charadrius montanus</i>	Lowland/Prairie Grassland Sagebrush Steppe and Sagebrush-Dominated Shrubland Ingomar Focal Area				
Chestnut-collared longspur (S2)	Lowland/Prairie Grassland Ingomar Focal Area	Yes	Yes	Yes	Yes
<i>Calcarius ornatus</i>					
Gray-crowned rosy-finch (S2)	No Tier 1 Focal Areas in the Study Area	No	Yes	Yes	Yes
<i>Leucosticte tephrocotis</i>					
Greater sage-grouse (S2)	Floodplain and Riparian	Yes	Yes	Yes	Yes
<i>Centrocercus urophasianus</i>	Wetlands Sagebrush Steppe and Sagebrush-Dominated Shrubland Ingomar Focal Area				
REPTILES					
Plains hog-nosed snake (S2)	Conifer-Dominated Forest and Woodland Wetlands	Yes	Yes	Yes	Yes
<i>Heterodon nasicus</i>	Floodplain and Riparian Lowland/Prairie Grassland Sagebrush Steppe and Sagebrush-Dominated Shrubland Ingomar Focal Area				
Western milksnake (S2)	Conifer-Dominated Forest and Woodland	Yes	No	No	No
<i>Lampropeltis gentilis</i>	Floodplain and Riparian Lowland/Prairie Grassland Sagebrush Steppe and Sagebrush-Dominated Shrubland Ingomar Focal Area				

TABLE F-14

Montana State Rank S1 and S2 Terrestrial Species of Concern with Recent Occurrences (1993 and later) in the Study Areas ^{a,b}

Species	Habitat	Alternative A	Alternative B	Alternative C	Alternative D
AMPHIBIANS					
Great plains toad (S2)	Floodplain and Riparian	Yes	Yes	Yes	Yes
<i>Anaxyrus cognatus</i>	Open Water Wetlands Lowland/Prairie Grassland Sagebrush Steppe and Sagebrush-Dominated Shrubland Ingomar Focal Area				
INVERTEBRATE					
A sand-dwelling mayfly (S1/S2)	NA	Yes	No	No	No
<i>Homoeoneuria alleni</i>					
A mayfly (S2)	NA	Yes	No	No	No
<i>Raptoheptagenia cruentata</i>					
Gray comma (S2)	NA	Yes	No	No	Yes
PROJECT TOTAL (count)		10	6	5	7
<p>^a Yes = recent occurrence in the Study Area (1993 and later); No = no recent occurrence in the Study Area. If no date information was available, the occurrence was noted as a recent occurrence. See Appendix G for historic occurrences of species (pre-1993).</p> <p>^b Due to the inclusion of access roads in the Facility Location analysis, the Study Area could lack a species found within the Facility Location, if an access road reaches beyond the Potential Impact Zone corridor.</p> <p>Note: CTCGN = Community Type of Greatest Conservation Need, NA = No CTCGN or Tier 1/2 Focal Areas assigned in the Montana's State Wildlife Action Plan.</p> <p>Source: Montana Fish, Wildlife, and Parks, 2015</p>					

TABLE F-15								
Greater Sage-grouse Habitat in the 0.5-mile-wide, 4-mile-wide, and 8-mile-wide Study Areas (acres)								
Habitat Type	Alternative A acres (prop.)		Alternative B acres (prop.)		Alternative C acres (prop.)		Alternative D acres (prop.)	
	0.5-mile	4-mile	0.5-mile	4-mile	0.5-mile	4-mile	0.5-mile	4-mile
General Habitat	37,571 (71%)	319,354 (75%)	45,012 (90%)	358,666 (89%)	41,162 (86%)	331,295 (86%)	49,780 (90%)	387,372 (89%)
Core Area	0	55	0	0	0	0	0	0
Connectivity Area	0	0	0	0	0	0	0	0
TOTAL ^a	37,571 (71%)	319,409 (75%)	45,012 (90%)	358,666 (89%)	41,162 (86%)	331,295 (86%)	49,597 (90%)	386,854 (89%)

^a Totals reflect total acres of habitat type crossed by each Alternative, not the total acres of the Alternatives.
 Note: prop. = proportion of the total acreage of the Study Areas
 Source: Montana Fish, Wildlife, and Parks, 2023h

TABLE F-16												
Greater Sage-grouse Leks in the 0.5-Mile-Wide, 4-Mile-Wide, and 8-Mile-Wide Study Areas (count) ^a												
Lek Activity Status	Alternative A			Alternative B			Alternative C			Alternative D		
	0.5-mile	4-mile	8-mile	0.5-mile	4-mile	8-mile	0.5-mile	4-mile	8-mile	0.5-mile	4-mile	8-mile
Confirmed Active	3	4	9	0	4	9	0	4	12	0	8	11

^a Leks were only found in General Habitat; no leks were found in Core or Connectivity Areas within the Study Areas.
 Source: Montana Fish, Wildlife, and Parks, 2023i

TABLE F-17								
Sharp-tailed Grouse Leks in General Habitat in the 2-Mile-Wide Study Area (count)								
	Alternative A		Alternative B		Alternative C		Alternative D	
Leks within General Habitat	30		60		48		78	

Source: Montana Natural Heritage Program, 2023i

TABLE F-18

Migratory Birds of Conservation Concern with Recent Occurrences (1993 and later) in the Study Areas ^a

Species	Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Baird's sparrow (<i>Ammodramus bairdii</i>)	Prime nesting habitat is in native prairie with little to no grazing.	Yes	Yes	Yes	Yes
Black tern (<i>Chidonias niger</i>)	Nesting habitat generally found in wetlands, marshes, and small ponds with emergent vegetation; occasionally on manmade islands.	Yes	Yes	No	Yes
Black-billed cuckoo (<i>Coccyzus erythrophthalmus</i>)	Generally found in wooded draws, forest edges, shelterbelts, and deciduous woodlands in riparian areas.	Yes	Yes	No	Yes
Bobolink (<i>Dolichonyx oryzivorus</i>)	Found in hay fields and grasslands. Builds nests in tall grass and mixed-grass prairies.	Yes	Yes	Yes	Yes
California Gull ^a (<i>Larus californicus</i>)	Found near large lakes but can also use rivers and ponds. Builds nests in colonies on islands; generally in low vegetation or bare ground.	Yes	No	No	No
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	Found in native prairie with short to medium grasses.	Yes	Yes	Yes	Yes
Ferruginous hawk (<i>Buteo regalis</i>)	Found in mixed-grass prairie, grasslands, grass-sagebrush complex, and sagebrush steppe. Builds nests on rock outcrops, on ground, or elevated.	Yes	Yes	Yes	Yes
Franklin's gull (<i>Leucophaeus pipixcan</i>)	Generally found in prairie marsh habitats. Nests are built over water on emergent aquatic vegetation. Prime nesting sites have water levels that remain high throughout nesting season.	Yes	Yes	Yes	Yes
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	Prefers open prairie with intermittent brush.	No	No	No	No
Lark bunting ^a (<i>Calamospiza melanocorys</i>)	Found in prairies and grasslands with short and mixed-grasses; occasionally in hayfields and along roadsides.	Yes	Yes	Yes	Yes
Lesser yellowlegs ^a (<i>Tringa flavipes</i>)	Can be found in along mudflats and shallow ponds during migration. Prime breeding habitat is open woodlands, meadows, and muskegs.	Yes	No	No	No
Lewis's woodpecker (<i>Melanerpes lewis</i>)	Uses forested areas with an open tree canopy, brush ground cover, perch sites, and dead or downed trees for cavity nesting. Relies on natural cavities as opposed to creating its own. Commonly found in burned or logged forests.	No	No	No	No
Marbled godwit ^a (<i>Limosa fedoa</i>)	Associates with wetlands and native grasslands. Upland habitat such as grasslands and pastures are sometimes used as well.	No	No	No	No
Mountain plover (<i>Charadrius montanus</i>)	Prime breeding season habitat is found in heavily grazed, shortgrass prairie; commonly uses prairie dog colony habitat.	Yes	No	No	No
Northern harrier (<i>Circus hudsonius</i>)	Occupies open grasslands near water, such as wet meadows and marshes. Nests in dense vegetation in open, undisturbed grasslands. Diet primarily consists of voles, but may prey on birds, amphibians, reptiles, and insects.	No	No	No	No
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	Found in ponderosa pine and pine-juniper forests at lower elevations.	Yes	Yes	Yes	Yes

TABLE F-18

Migratory Birds of Conservation Concern with Recent Occurrences (1993 and later) in the Study Areas ^a

Species	Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Prairie falcon ^a (<i>Falco mexicanus</i>)	Nesting habitat is found on cliffs, often overlooking prairie habitat. Open grasslands/prairies are used for hunting grounds.	Yes	Yes	No	Yes
Red-headed woodpecker (<i>Melanerpes erythrocephalus</i>)	Habitat not well understood in Montana, although thought to prefer forested areas near riparian habitat; occasionally in open savannah and burn areas provided there are sufficient canopy cover and snags.	Yes	Yes	Yes	Yes
Sprague's pipit (<i>Anthus spragueii</i>)	Found in grassland prairies with medium height grasses; native prairie is preferred but can sometimes be found in non-native prairies. Breeding habitat is found in meadows near edges of alkaline lakes.	Yes	Yes	Yes	No
Western grebe (<i>Aechmophorus occidentalis</i>)	Large, open freshwater lakes and marshes with various species of fish, crustaceans, and insects for forage.	Yes	No	No	No
Willet ^a (<i>Tringa semipalmata</i>)	Associated with wetlands and grasslands near waterbodies; uses short, sparse vegetation cover.	No	No	No	Yes
PROJECT TOTAL (counts)		16	12	9	12
^a Due to the inclusion of access roads in the Facility Location analysis, the Study Area could lack a species found within the Facility Location, if an access road reaches beyond the Study Area corridor. ^b Occurrence information is based on publicly available data and natural heritage inventory data. If no observation date information was available, the occurrence was included within recent occurrences. ^c For historic occurrences of migratory birds of conservation concern that could occur in the Study Area (pre-1993), see Appendix K. Sources: U.S. Fish and Wildlife Service, 2023b; Montana Natural Heritage Program, 2023; eBird 2023					

TABLE F-19

Eagle nests and Individual Observations in the Study Areas ^a

Species	Alternative A		Alternative B		Alternative C		Alternative D	
	Nests	Obs.	Nests	Obs.	Nests	Obs.	Nests	Obs.
Bald eagle	0	34	4	6	0	6	0	3
Golden eagle	0	17	0	8	0	5	0	3
Note: Obs. = observations ^a Study Area defined as a 1-mile-wide-corridor. Source: Montana Natural Heritage Program, 2023								

TABLE F-20

Recent Occurrences (1993 and later) of Special Status Waterbird Species in the Study Area ^{a,b,c}

Species	Protection Status	Alternative A	Alternative B	Alternative C	Alternative D
American bittern (<i>Botaurus lentiginosus</i>)	BLM-S	Yes	Yes	Yes	Yes
Black tern (<i>Chlidonias niger</i>)	BCC, BLM-S	Yes	Yes	No	Yes
California gull (<i>Larus californicus</i>)	BCC	Yes	No	No	No
Common tern (<i>Sterna hirundo</i>)	BLM-S	Yes	Yes	Yes	Yes
Franklin's gull (<i>Leucophaeus pipixcan</i>)	BCC, BLM-S	Yes	Yes	Yes	Yes
Lesser yellowlegs (<i>Tringa flavipes</i>)	BCC	Yes	No	No	No
Long-billed curlew (<i>Numenius americanus</i>)	BLM-S	Yes	No	No	No
Marbled godwit (<i>Limosa fedoa</i>)	BCC	No	No	No	No
Mountain plover (<i>Charadrius montanus</i>)	BCC, BLM-S, SOC	Yes	No	No	No
Piping plover (<i>Charadrius melodus</i>)	ESA-T, SOC	No	No	No	Yes
Willet (<i>Tringa semipalmata</i>)	BCC	No	No	No	Yes
Western grebe (<i>Aechmophorus occidentalis</i>)	BCC	Yes	No	No	No
PROJECT TOTAL (count)		9	4	3	6

^a Due to access roads in the Facility Location, the Study Area could lack a species found within the Facility Location if an access road reaches beyond the Study Area corridor.

^b Occurrence information is based on publicly available data and natural heritage inventory data. If no observation date information was available, the occurrence was included within recent occurrences.

^c For historic occurrences of special status waterbird species that could occur in the Study Areas (pre-1993), see Appendix K.

Note: BLM-S= Bureau of Land Management – Sensitive, BCC = Bird of Conservation Concern, ESA-T = Endangered Species Act – Threatened, SOC = Species of Concern

Sources: Montana Natural Heritage Program, 2023a; eBird, 2023; U.S. Fish and Wildlife Service, 2023b; Bureau of Land Management, 2020

FISHERIES (BIOLOGICAL RESOURCES (CIRCULAR MFSA-2, SECTION 3.7(12))

TABLE F-21					
Streams in the Study Area by Aquatic Ecological System and Community Types of Greatest Conservation Need ^a					
Aquatic Ecological System – Community Types of Greatest Conservation Need	Tier I or II AFA	Stream Lengths (miles)			
		Alternative A	Alternative B	Alternative C	Alternative D
LARGE VALLEY RIVERS – MIXED SYSTEMS					
Yellowstone River	I	6.9	0	0	0
LARGE PRAIRIE RIVERS – PRAIRIE RIVERS					
Powder River ^b	I	3.5	4.6	2.7	3.6
Tongue River	I	11.2	3.1	3.3	3.1
Unnamed Tributary	–	0.2	0.4	0.6	0.3
Subtotal	–	14.8	7.0	6.7	7.1
MEDIUM PRAIRIE RIVERS – PRAIRIE RIVERS					
Rosebud Creek	II	2.3	4.8	4.8	4.4
GREAT PLAINS PRAIRIE STREAMS – PRAIRIE STREAMS					
East Fork Armells Creek ^c	–	0	0	0	0
O’Fallon Creek	II ^d	5.3	5.3	5.3	6.6
Pumpkin Creek	II	0	8.3	7.8	0
Sandstone Creek	–	4.2	18.8	18.8	19.5
Subtotal	–	9.5	32.4	32.0	26.0
GREAT PLAINS INTERMITTENT STREAM – PRAIRIE STREAMS					
Beaver Creek	II	3.2	4.8	4.8	4.6
Cabin Creek	II	0	0	2.6	0
Other Intermittent Streams	–	400.9	410.8	335.0	427.1
Subtotal	–	404.1	415.6	342.4	431.7
PROJECT TOTAL ^e		437.8	460.8	385.8	469.2

^a The fisheries Study Area is defined as the area within 1 mile of the centerline (a 2-mile-wide corridor).

^b The Powder River supports Large Valley River fish assemblages during the spring runoff (MNHP, 2023g).

^c Classified as perennial within the Facility Location along an access road outside of the Study Area, and classified as intermittent within the Study Area. Mileage within the Study Area is included in the totals for “Other Intermittent Streams”.

^d Upper O’Fallon Creek Tier II AFA.

^e Totals may not add up due to rounding.

Note: AFA = Aquatic Focal Area

Sources: Montana Fish, Wildlife, and Parks, 2015; U.S. Geological Survey, 2023

TABLE F-22

Special Status Fish Species with Suitable Habitat and Documented Occurrences in the Study Areas of the Alternative Routes ^a

Species	Status ^b	State Rank ^c	Preferred Habitat	Associated CTGCN ^e and Waterbodies with Suitable Habitat	Alternative routes with Documented Occurrences ^d
FEDERALLY LISTED SPECIES					
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	FE, SOC	S1	Large, turbid rivers and impoundments of these rivers over sand and gravel bottoms, usually with a strong current. They use all channel types, primarily straight reaches with islands, and areas with substrates containing sand (especially bottom sand dune formations) and strong currents. Documented in the Powder River and lower 20 miles of the Tongue River (M. Backes, MFWP, pers. comm. August 31, 2023).	Mixed Systems; Prairie Rivers <ul style="list-style-type: none"> • Lower Yellowstone River • Powder River • Tongue River 	Alternative A Alternative B Alternative C Alternative D
BLM SENSITIVE AND/OR MONTANA SPECIES OF CONCERN					
Blue Sucker (<i>Cycleptus elongatus</i>)	SOC	S2, S3	Areas with swift currents areas of large rivers, feeding on insects in cobble habitat. In the spring, they migrate upriver and congregate in fast, rocky areas to spawn.	Mixed Systems; Prairie Rivers <ul style="list-style-type: none"> • Lower Yellowstone River • Powder River • Tongue River • O'Fallon Creek • Pumpkin Creek • Rosebud Creek 	Alternative A Alternative B Alternative C Alternative D
Iowa Darter (<i>Etheostoma exile</i>)	SOC, BLM	S3	Small streams and reservoirs. Prefer clear slow-flowing streams with solid bottoms, but have a wide tolerance for changes in water flow rates and can be found in reservoirs. They occur in the far eastern and northern Great Plain Prairie Streams. Documented to occur in Fallon County, but no documented occurrences in the Study Area.	Mixed Systems; Prairie Rivers; Prairie Streams	None
Northern Redbelly Dace (<i>Chrosomus eos</i>)	SOC	S3	Clear, cool, slow-flowing creeks, ponds and lakes with aquatic vegetation, including filamentous algae, and sandy or gravelly bottoms interspersed with silt. In Montana, this species is an indicator species of the Northern Glaciated Prairie Stream Ecological System and may occur in the intermittent prairie stream systems.	Mixed Systems Prairie Rivers; Prairie Streams	None
Northern Redbelly X Finescale Dace (<i>Chrosomus eos</i> x <i>Chrosomus neogaeus</i>)	SOC, BLM	S3	Habitat can be similar to that of the northern redbelly dace described above, or that of the finescale dace which includes larger lakes.	Prairie Rivers; Prairie Streams	None
Paddlefish (<i>Polyodon spathula</i>)	SOC, BLM	S2	Slow or quiet waters of large rivers or impoundments. They spawn on the gravel bars of large rivers during spring high water. Paddlefish tolerate, or perhaps seek, turbid water. They are found in the Yellowstone River and a portion of the Tongue River near their confluence.	Mixed Systems; Prairie Rivers <ul style="list-style-type: none"> • Yellowstone River • Tongue River 	Alternative A Alternative B Alternative D

TABLE F-22

Special Status Fish Species with Suitable Habitat and Documented Occurrences in the Study Areas of the Alternative Routes ^a

Species	Status ^b	State Rank ^c	Preferred Habitat	Associated CTGCN ^e and Waterbodies with Suitable Habitat	Alternative routes with Documented Occurrences ^d
Sauger (<i>Sander canadensis</i>)	SOC, BLM	S2	Large rivers and reservoirs, but is mainly a river fish, inhabiting the larger turbid rivers and the muddy shallows of lakes and reservoirs. They spawn in gravelly or rocky areas in shallow water in spring. In Montana, historical distribution included the Yellowstone River and its major tributaries downstream of the Clark Fork. Known to occur in stream reaches located within the Facility Locations Study Area of all alternative routes.	Mixed Systems; Prairie Rivers; Prairie Streams <ul style="list-style-type: none"> • Yellowstone River • Tributaries of Yellowstone River 	Alternative A Alternative B Alternative C Alternative D
Shortnose Gar (<i>Lepisosteus platostomus</i>)	SOC	S3	Large rivers, quiet pools, backwaters, and oxbow lakes.	Mixed Systems Prairie Rivers <ul style="list-style-type: none"> • Yellowstone River 	None
Sicklefin Chub (<i>Macrhybopsis meeki</i>)	SOC	S1	Large, turbid streams in the plains region of Montana. Sicklefin chub are strictly confined to the main channels of large, turbid rivers where they live in a strong current over a bottom of sand or fine gravel.	Mixed Systems Prairie Rivers <ul style="list-style-type: none"> • Lower Yellowstone River 	None
Sturgeon Chub (<i>Macrhybopsis gelida</i>)	SOC, BLM	S2S3	Typically found in the rapid, gravelly turbid waters of larger, plains rivers with moderate to strong currents over bottoms ranging from rocks and gravel to coarse sand.	Mixed Systems Prairie Rivers; Prairie Streams <ul style="list-style-type: none"> • Lower Yellowstone River • Powder River 	Alternative A Alternative B Alternative C Alternative D

^a Due to the inclusion of access roads in the Facility Location analysis, the Study Area could lack a species found within the Facility Location, if an access road reaches beyond the Study Area corridor.

^b FE = Federally endangered, BLM = BLM sensitive species, SOC = species of concern

^c State (Conservation) Ranks:

S1: At high risk because of extremely limited and/or rapidly declining population numbers, range and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

S2: At risk because of very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state.

S3: Potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.

^d Documented or predicted occurrences in the MNHP data include stream reaches where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries (Montana Natural Heritage Program, 2023a,b).

Note: CTGCN = Community Type of Greatest Conservation Need; MFWP = Montana Fish, Wildlife, and Parks; MNHP = Montana Natural Heritage Program

Sources: Brown, 1971; Pflieger, 1975; Holton, 1980; Flath, 1981; Moss et al., 1983; Tews, 1994; Bramblett, 1996; McMahon and Gardner, 2001; Holton and Johnson, 2003; MNHP, 2022; MNHP, 2023a-c; MNHP and MFWP, 2023

**CULTURAL AND HISTORICAL RESOURCES (CIRCULAR MFSA-2, SECT 3.7(13), 3.7(14))
ALTERNATIVE A**

TABLE F-23		
Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative A		
Site Number	NRHP Status	Site Type
24CR0090	Eligible	Lithic Material Concentration
24CR0462	NR Listed	Fort Keogh
24CR0463	NR Listed	Historic Site
24CR0480	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24CR0482	Eligible	Firehearths or Roasting Pits, FCR
24CR0498	Eligible	Rock Cairn(s)
24CR0499	Eligible	Firehearths or Roasting Pits, FCR
24CR0628	NR Listed	Historic Commercial Development
24CR0629	NR Listed	Historic Architecture
24CR0667	Eligible	Historic Education
24CR0668	NR Listed	William Harmon House
24CR0675	NR Listed	Mountain States Telephone and Telegraph
24CR0676	NR Listed	Olive Hotel
24CR0677	NR Listed	Historic Political/Government
24CR0679	Eligible	Tongue River Bridge
24CR0680	Eligible	Historic Vehicular/Foot Bridge
24CR0713	NR Listed	Ursuline Convent of the Sacred Heart
24CR0730	Eligible	Fraser Homestead
24CR0761	NR Listed	Locate Creek Bridge
24CR0771	Eligible	Historic Irrigation System
24CR0772	Eligible	Historic Vehicular/Foot Bridge
24CR0788	Eligible	Lithic Material Concentration
24CR0792	Eligible	Historic Vehicular/Foot Bridge
24CR0916	NR Listed	Historic Residence
24CR0920	NR Listed	Northern Pacific Railway Depot
24CR0923	NR Listed	Historic Residence
24CR1040	Eligible	Historic Political/Government
24CR1043	Eligible	Historic Road/Trail
24CR1045	Eligible	Historic District
24CR1135	NR Listed	Holy Rosary Hospital
24CR1245	Eligible	Historic Railroad
24CR1503	Eligible	Beacon tower
24CR1507	Eligible	Terminal building and Hangar #3
24CR1547	Eligible	Historic Post Office
24CR1548	Eligible	Historic Commercial Development
24CR1551	Eligible	Historic Fraternal Lodge
24CR1553	Eligible	George K. Foster Building / Foster Drug
24CR1622	Eligible	Hogback Range Unit House
24FA0011	Eligible	Lithic Material Concentration
24FA0089	Eligible	Lithic Material Concentration
24FA0090	Eligible	Lithic Material Concentration
24FA0175	Eligible	Tipi Ring
24FA0183	Eligible	Native American Stone Feature and Lithic Scatter
24FA0192	Eligible	Rock Cairn(s)
24FA0193	Eligible	Tipi Ring

TABLE F-23

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative A

Site Number	NRHP Status	Site Type
24FA0205	Eligible	Lithic Material Concentration
24FA0206	Eligible	Lithic Material Concentration
24FA0208	Eligible	Lithic Material Concentration
24FA0216	Eligible	Historic Railroad Building/Structure and Historic Railroad
24FA0217	Eligible	Historic Agriculture
24FA0231	NR Listed	Cottonwood Creek Bridge- Bridge No 320-13-0022
24FA0257	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0276	Eligible	Lithic Material Concentration
24FA0280	Eligible	Tipi Ring
24FA0282	Eligible	Lithic Material Concentration
24FA0309	Eligible	Lithic Material Concentration
24FA0310	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0371	Eligible	Lithic Material Concentration
24FA0372	Eligible	Lithic Material Concentration
24FA0382	Eligible	Historic Railroad
24FA0385	Eligible	Tipi Ring
24FA0387	Eligible	Historic Road/Trail
24FA0400	Eligible	Historic Road/Trail
24FA0601	Eligible	Tipi Ring
24FA0611	Eligible	Lithic Material Concentration
24FA0613	Eligible	Lithic Material Concentration
24FA0614	Eligible	Lithic Material Concentration
24FA0615	Eligible	Lithic Material Concentration
24FA0616	Eligible	Lithic Material Concentration
24FA0617	Eligible	Lithic Material Concentration
24FA0618	Eligible	Lithic Material Concentration
24FA0619	Eligible	Lithic Material Concentration
24FA0621	Eligible	Combo Prehistoric/Historic
24FA0622	Eligible	Lithic Material Concentration
24FA0624	Eligible	Lithic Material Concentration
24FA0625	Eligible	Tipi Ring
24FA0626	Eligible	Lithic Material Concentration
24FA0630	Eligible	Lithic Material Concentration
24FA0631	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0632	Eligible	Lithic Material Concentration
24FA0633	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0636	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0637	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0638	Eligible	Combo Prehistoric/Historic
24FA0639	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0640	Eligible	Lithic Material Concentration
24FA0641	Eligible	Lithic Material Concentration
24FA0642	Eligible	Lithic Material Concentration
24FA0643	Eligible	Lithic Material Concentration
24FA0644	Eligible	Combo Prehistoric/Historic
24FA0646	Eligible	Combo Prehistoric/Historic
24FA0647	Eligible	Tipi Ring and Rock Pile(s)
24FA0648	Eligible	Tipi Ring

TABLE F-23

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative A

Site Number	NRHP Status	Site Type
24FA0649	Eligible	Combo Prehistoric/Historic
24FA0650	Eligible	Combo Prehistoric/Historic
24FA0651	Eligible	Tipi Ring
24FA0652	Eligible	Tipi Ring
24FA0673	Eligible	Historic Residence
24FA0677	Eligible	Historic Commercial Development
24FA0703	Eligible	Lithic Material Concentration
24FA0704	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0742	Eligible	Lithic Material Concentration
24FA0975	Eligible	Historic Vehicular/Foot Bridge
24FA1032	Eligible	Tipi Ring
24RB0163	Eligible	Rock Shelter or Cave
24RB0253	Eligible	Rock Shelter or Cave and Cribbed Log Occupation Structure
24RB0254	Eligible	Kill Site/Trap
24RB0256	Eligible	Lithic Material Concentration
24RB0257	Eligible	Lithic Material Concentration
24RB0262	Eligible	Lithic Material Concentration
24RB0267	Eligible	Lithic Material Concentration
24RB0269	Eligible	Rock Shelter or Cave
24RB0399	NR Listed	Historic Site
24RB0478	Eligible	Lithic Material Concentration
24RB0887	Eligible	Historic Homestead/Farmstead and Historic Dug-Out
24RB0978	Eligible	Lithic Material Concentration
24RB0983	Eligible	Lithic Material Concentration
24RB0989	Eligible	Lithic Material Concentration
24RB1000	Eligible	Historic Irrigation System
24RB1007	Eligible	Lookout
24RB1008	Eligible	Lookout
24RB1016	NR Listed	First Presbyterian Church and MANSE
24RB1017	NR Listed	Historic Hotel/Motel
24RB1019	Eligible	Petroglyph
24RB1020	Eligible	Lithic Material Concentration
24RB1023	NR Listed	Forsyth Water Pumping Station
24RB1024	Eligible	Petroglyph
24RB1025	NR Listed	Brotherhood of Locomotive Engineers Hall
24RB1027	NR Listed	Herman and Hannah Anderson Residence
24RB1028	NR Listed	Historic Vehicular/Foot Bridge
24RB1029	NR Listed	Historic District and Historic Commercial Development
24RB1032	NR Listed	Historic District
24RB1035	Eligible	Historic Railroad
24RB1039	Eligible	Petroglyph
24RB1053	Eligible	Lithic Material Concentration
24RB1504	NR Listed	Historic Courthouse
24RB2008	Eligible	Historic Vehicular/Foot Bridge
24RB2234	Eligible	Historic Railroad
24RB2238	NR Listed	St. Philips Episcopal Church, Rosebud Community Chapel

Note: FCR = fire cracked rock; NR = National Register; and NRHP = National Register of Historic Places

ALTERNATIVE B

TABLE F-24			
Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative B			
Site Number	NRHP Status	Property Name	Site Type
24CR0090	Eligible		Lithic Material Concentration
24CR0480	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24CR0482	Eligible		Firehearths or Roasting Pits, FCR
24CR0498	Eligible		Rock Cairn(s)
24CR0499	Eligible		Firehearths or Roasting Pits, FCR
24CR0761	NR Listed		Locate Creek Bridge
24CR0771	Eligible		Historic Irrigation System
24CR0772	Eligible		Historic Vehicular/Foot Bridge
24CR1043	Eligible		Historic Road/Trail
24CR1134	Eligible		Historic Vehicular/Foot Bridge
24CR1142	Eligible		Firehearths or Roasting Pits, FCR
24CR1145	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24CR1146	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24CR1231	Eligible		Historic Dug-Out
24CR1245	Eligible		Historic Railroad
24CR1249	Eligible		Lithic Material Concentration and Historic Material Concentration
24CR1256	Eligible		Historic Inscription/Sinage
24CR1257	Eligible		Lithic Material Concentration
24FA0011	Eligible		Lithic Material Concentration
24FA0089	Eligible		Lithic Material Concentration
24FA0090	Eligible		Lithic Material Concentration
24FA0091	Eligible		Lithic Material Concentration
24FA0175	Eligible		Tipi Ring
24FA0183	Eligible		Native American Stone Feature and Lithic Scatter
24FA0192	Eligible		Rock Cairn(s)
24FA0193	Eligible		Tipi Ring
24FA0205	Eligible		Lithic Material Concentration
24FA0206	Eligible		Lithic Material Concentration
24FA0208	Eligible		Lithic Material Concentration
24FA0216	Eligible		Historic Railroad Building/Structure and Historic Railroad
24FA0217	Eligible		Historic Agriculture
24FA0231	NR Listed		Cottonwood Creek Bridge- Bridge No 320-13-0022
24FA0257	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24FA0276	Eligible		Lithic Material Concentration
24FA0280	Eligible		Tipi Ring
24FA0282	Eligible		Lithic Material Concentration
24FA0382	Eligible	Chicago, Milwaukee, and St. Paul Railroad (Fallon)	Historic Railroad
24FA0385	Eligible		Tipi Ring
24FA0387	Eligible		Historic Road/Trail

TABLE F-24

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative B

Site Number	NRHP Status	Property Name	Site Type
24FA0400	Eligible		Historic Road/Trail
24FA0611	Eligible		Lithic Material Concentration
24FA0613	Eligible		Lithic Material Concentration
24FA0614	Eligible		Lithic Material Concentration
24FA0615	Eligible		Lithic Material Concentration
24FA0616	Eligible		Lithic Material Concentration
24FA0617	Eligible		Lithic Material Concentration
24FA0618	Eligible		Lithic Material Concentration
24FA0619	Eligible		Lithic Material Concentration
24FA0621	Eligible		Combo Prehistoric/Historic
24FA0622	Eligible		Lithic Material Concentration
24FA0624	Eligible		Lithic Material Concentration
24FA0625	Eligible		Tipi Ring
24FA0626	Eligible		Lithic Material Concentration
24FA0630	Eligible		Lithic Material Concentration
24FA0631	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24FA0632	Eligible		Lithic Material Concentration
24FA0633	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24FA0636	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24FA0637	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24FA0638	Eligible		Combo Prehistoric/Historic
24FA0639	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24FA0640	Eligible		Lithic Material Concentration
24FA0641	Eligible		Lithic Material Concentration
24FA0642	Eligible		Lithic Material Concentration
24FA0643	Eligible		Lithic Material Concentration
24FA0644	Eligible		Combo Prehistoric/Historic
24FA0646	Eligible		Combo Prehistoric/Historic
24FA0647	Eligible		Tipi Ring and Rock Pile(s)
24FA0648	Eligible		Tipi Ring
24FA0649	Eligible		Combo Prehistoric/Historic
24FA0650	Eligible		Combo Prehistoric/Historic
24FA0651	Eligible		Tipi Ring
24FA0652	Eligible		Tipi Ring
24FA0673	Eligible		Historic Residence
24FA0677	Eligible		Historic Commercial Development
24FA0703	Eligible		Lithic Material Concentration
24FA0704	Eligible		Lithic Material Concentration and Firehearths or Roasting Pits
24FA0718	NR Listed		Baker Hotel
24FA0742	Eligible		Lithic Material Concentration
24FA1032	Eligible		Tipi Ring
24FA1501	NR Listed		Fallon County Jail
24RB0163	Eligible		Rock Shelter or Cave

TABLE F-24

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative B

Site Number	NRHP Status	Property Name	Site Type
24RB0253	Eligible		Rock Shelter or Cave and Cribbed Log Occupation Structure
24RB0254	Eligible		Kill Site/Trap
24RB0256	Eligible		Lithic Material Concentration
24RB0257	Eligible		Lithic Material Concentration
24RB0262	Eligible		Lithic Material Concentration
24RB0267	Eligible		Lithic Material Concentration
24RB0269	Eligible		Rock Shelter or Cave
24RB0478	Eligible		Lithic Material Concentration
24RB0887	Eligible		Historic Homestead/Farmstead and Historic Dug-Out
24RB0983	Eligible		Lithic Material Concentration
24RB0989	Eligible		Lithic Material Concentration
24RB1000	Eligible		Historic Irrigation System
24RB1007	Eligible		Lookout
24RB1008	Eligible		Lookout
24RB1019	Eligible		Petroglyph
24RB1020	Eligible		Lithic Material Concentration
24RB1024	Eligible		Petroglyph
24RB1035	Eligible		Historic Railroad
24RB1039	Eligible		Petroglyph
24RB1053	Eligible		Lithic Material Concentration
24RB1524	Eligible		Lithic Material Concentration
24RB1526	Eligible		Lithic Material Concentration
24RB2234	Eligible	Northern Pacific Railroad (Rosebud)	Historic Railroad

Note: FCR = Fire Cracked Rock; NR = National Register; and NRHP = National Register of Historic Places

ALTERNATIVE C

TABLE F-25		
Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative C		
Site Number	NRHP Status	Site Type
24CR0774	Eligible	Historic Vehicular/Foot Bridge
24CR0822	Eligible	Historic Road/Trail
24CR0825	Eligible	Historic Residence
24CR0939	Eligible	Lithic Material Concentration
24CR0956	Eligible	Lithic Material Concentration
24CR0964	Eligible	Lithic Material Concentration
24CR1095	Eligible	Combo Prehistoric/Historic
24CR1097	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24CR1098	Eligible	Lithic Material Concentration
24CR1103	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24CR1107	Eligible	Lithic Material Concentration
24CR1111	Eligible	Lithic Material Concentration
24CR1112	Eligible	Lithic Material Concentration
24CR1114	Eligible	Lithic Material Concentration
24CR1134	Eligible	Historic Vehicular/Foot Bridge
24CR1145	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24CR1146	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24CR1256	Eligible	Historic Inscription/Signage
24CR1257	Eligible	Lithic Material Concentration
24FA0011	Eligible	Lithic Material Concentration
24FA0089	Eligible	Lithic Material Concentration
24FA0090	Eligible	Lithic Material Concentration
24FA0091	Eligible	Lithic Material Concentration
24FA0175	Eligible	Tipi Ring
24FA0183	Eligible	Native American Stone Feature and Lithic Scatter
24FA0192	Eligible	Rock Cairn(s)
24FA0193	Eligible	Tipi Ring
24FA0205	Eligible	Lithic Material Concentration
24FA0206	Eligible	Lithic Material Concentration
24FA0208	Eligible	Lithic Material Concentration
24FA0216	Eligible	Historic Railroad Building/Structure and Historic Railroad
24FA0217	Eligible	Historic Agriculture
24FA0231	NR Listed	Cottonwood Creek Bridge- Bridge No 320-13-0022
24FA0257	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0276	Eligible	Lithic Material Concentration
24FA0280	Eligible	Tipi Ring
24FA0282	Eligible	Lithic Material Concentration
24FA0382	Eligible	Historic Railroad
24FA0385	Eligible	Tipi Ring
24FA0387	Eligible	Historic Road/Trail
24FA0400	Eligible	Historic Road/Trail
24FA0611	Eligible	Lithic Material Concentration
24FA0613	Eligible	Lithic Material Concentration
24FA0614	Eligible	Lithic Material Concentration
24FA0615	Eligible	Lithic Material Concentration
24FA0616	Eligible	Lithic Material Concentration

TABLE F-25

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative C

Site Number	NRHP Status	Site Type
24FA0617	Eligible	Lithic Material Concentration
24FA0618	Eligible	Lithic Material Concentration
24FA0619	Eligible	Lithic Material Concentration
24FA0621	Eligible	Combo Prehistoric/Historic
24FA0622	Eligible	Lithic Material Concentration
24FA0624	Eligible	Lithic Material Concentration
24FA0625	Eligible	Tipi Ring
24FA0626	Eligible	Lithic Material Concentration
24FA0630	Eligible	Lithic Material Concentration
24FA0631	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0632	Eligible	Lithic Material Concentration
24FA0633	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0636	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0637	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0638	Eligible	Combo Prehistoric/Historic
24FA0639	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0640	Eligible	Lithic Material Concentration
24FA0641	Eligible	Lithic Material Concentration
24FA0642	Eligible	Lithic Material Concentration
24FA0643	Eligible	Lithic Material Concentration
24FA0644	Eligible	Combo Prehistoric/Historic
24FA0646	Eligible	Combo Prehistoric/Historic
24FA0647	Eligible	Tipi Ring and Rock Pile(s)
24FA0648	Eligible	Tipi Ring
24FA0649	Eligible	Combo Prehistoric/Historic
24FA0650	Eligible	Combo Prehistoric/Historic
24FA0651	Eligible	Tipi Ring
24FA0652	Eligible	Tipi Ring
24FA0673	Eligible	Historic Residence
24FA0677	Eligible	Historic Commercial Development
24FA0703	Eligible	Lithic Material Concentration
24FA0704	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0718	NR Listed	Baker Hotel
24FA0742	Eligible	Lithic Material Concentration
24FA1032	Eligible	Tipi Ring
24FA1501	NR Listed	Fallon County Jail
24RB0163	Eligible	Rock Shelter or Cave
24RB0253	Eligible	Rock Shelter or Cave and Cribbed Log Occupation Structure
24RB0254	Eligible	Kill Site/Trap
24RB0256	Eligible	Lithic Material Concentration
24RB0257	Eligible	Lithic Material Concentration
24RB0262	Eligible	Lithic Material Concentration
24RB0267	Eligible	Lithic Material Concentration
24RB0269	Eligible	Rock Shelter or Cave
24RB0478	Eligible	Lithic Material Concentration
24RB0887	Eligible	Historic Homestead/Farmstead and Historic Dug-Out
24RB0983	Eligible	Lithic Material Concentration
24RB0989	Eligible	Lithic Material Concentration

TABLE F-25

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative C

Site Number	NRHP Status	Site Type
24RB1007	Eligible	Lookout
24RB1008	Eligible	Lookout
24RB1019	Eligible	Petroglyph
24RB1020	Eligible	Lithic Material Concentration
24RB1024	Eligible	Petroglyph
24RB1039	Eligible	Petroglyph
24RB1053	Eligible	Lithic Material Concentration
24RB1524	Eligible	Lithic Material Concentration
24RB1526	Eligible	Lithic Material Concentration
24RB2234	Eligible	Historic Railroad

Note: NR = National Register; and NRHP = National Register of Historic Places

ALTERNATIVE D

TABLE F-26		
Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative D		
Site Number	NRHP Status	Site Type
24CR0090	Eligible	Lithic Material Concentration
24CR0480	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24CR0482	Eligible	Firehearths or Roasting Pits, FCR
24CR0499	Eligible	Firehearths or Roasting Pits, FCR
24CR0771	Eligible	Historic Irrigation System
24CR0772	Eligible	Historic Vehicular/Foot Bridge
24CR0774	Eligible	Historic Vehicular/Foot Bridge
24CR1043	Eligible	Historic Road/Trail
24CR1134	Eligible	Historic Vehicular/Foot Bridge
24CR1142	Eligible	Firehearths or Roasting Pits, FCR
24CR1231	Eligible	Historic Dug-Out
24CR1245	Eligible	Historic Railroad
24CR1249	Eligible	Lithic Material Concentration and Historic Material Concentration
24CR1622	Eligible	Hogback Range Unit House
24FA0011	Eligible	Lithic Material Concentration
24FA0089	Eligible	Lithic Material Concentration
24FA0090	Eligible	Lithic Material Concentration
24FA0091	Eligible	Lithic Material Concentration
24FA0175	Eligible	Tipi Ring
24FA0183	Eligible	Native American Stone Feature and Lithic Scatter
24FA0192	Eligible	Rock Cairn(s)
24FA0193	Eligible	Tipi Ring
24FA0205	Eligible	Lithic Material Concentration
24FA0206	Eligible	Lithic Material Concentration
24FA0208	Eligible	Lithic Material Concentration
24FA0216	Eligible	Historic Railroad Building/Structure and Historic Railroad
24FA0217	Eligible	Historic Agriculture
24FA0231	NR Listed	Historic Bridge
24FA0257	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0276	Eligible	Lithic Material Concentration
24FA0280	Eligible	Tipi Ring
24FA0282	Eligible	Lithic Material Concentration
24FA0382	Eligible	Historic Railroad
24FA0385	Eligible	Tipi Ring
24FA0387	Eligible	Historic Road/Trail
24FA0400	Eligible	Historic Road/Trail
24FA0611	Eligible	Lithic Material Concentration
24FA0613	Eligible	Lithic Material Concentration
24FA0614	Eligible	Lithic Material Concentration
24FA0615	Eligible	Lithic Material Concentration
24FA0616	Eligible	Lithic Material Concentration
24FA0617	Eligible	Lithic Material Concentration
24FA0618	Eligible	Lithic Material Concentration
24FA0619	Eligible	Lithic Material Concentration
24FA0621	Eligible	Combo Prehistoric/Historic
24FA0622	Eligible	Lithic Material Concentration

TABLE F-26

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative D

Site Number	NRHP Status	Site Type
24FA0624	Eligible	Lithic Material Concentration
24FA0625	Eligible	Tipi Ring
24FA0626	Eligible	Lithic Material Concentration
24FA0630	Eligible	Lithic Material Concentration
24FA0631	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0632	Eligible	Lithic Material Concentration
24FA0633	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0636	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0637	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0638	Eligible	Combo Prehistoric/Historic
24FA0639	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0640	Eligible	Lithic Material Concentration
24FA0641	Eligible	Lithic Material Concentration
24FA0642	Eligible	Lithic Material Concentration
24FA0643	Eligible	Lithic Material Concentration
24FA0644	Eligible	Combo Prehistoric/Historic
24FA0646	Eligible	Combo Prehistoric/Historic
24FA0647	Eligible	Tipi Ring and Rock Pile(s)
24FA0648	Eligible	Tipi Ring
24FA0649	Eligible	Combo Prehistoric/Historic
24FA0650	Eligible	Combo Prehistoric/Historic
24FA0651	Eligible	Tipi Ring
24FA0652	Eligible	Tipi Ring
24FA0673	Eligible	Historic Residence
24FA0677	Eligible	Historic Commercial Development
24FA0703	Eligible	Lithic Material Concentration
24FA0704	Eligible	Lithic Material Concentration and Firehearths or Roasting Pits
24FA0718	NR Listed	Historic Hotel
24FA0742	Eligible	Lithic Material Concentration
24FA1032	Eligible	Tipi Ring
24FA1501	NR Listed	Historic Jail
24RB0163	Eligible	Rock Shelter or Cave
24RB0253	Eligible	Rock Shelter or Cave and Cribbed Log Occupation Structure
24RB0254	Eligible	Kill Site/Trap
24RB0256	Eligible	Lithic Material Concentration
24RB0257	Eligible	Lithic Material Concentration
24RB0262	Eligible	Lithic Material Concentration
24RB0267	Eligible	Lithic Material Concentration
24RB0269	Eligible	Rock Shelter or Cave
24RB0478	Eligible	Lithic Material Concentration
24RB0887	Eligible	Historic Homestead/Farmstead and Historic Dug-Out
24RB0983	Eligible	Lithic Material Concentration
24RB0989	Eligible	Lithic Material Concentration
24RB1000	Eligible	Historic Irrigation System
24RB1007	Eligible	Lookout
24RB1008	Eligible	Lookout
24RB1019	Eligible	Petroglyph
24RB1020	Eligible	Lithic Material Concentration

TABLE F-26

Previously Identified Eligible and NRHP-Listed Cultural Resources within the Study Area of Alternative D

Site Number	NRHP Status	Site Type
24RB1024	Eligible	Petroglyph
24RB1035	Eligible	Historic Railroad
24RB1039	Eligible	Petroglyph
24RB1053	Eligible	Lithic Material Concentration
24RB1524	Eligible	Lithic Material Concentration
24RB1526	Eligible	Lithic Material Concentration
24RB2234	Eligible	Historic Railroad

Note: FCR = Fire Cracked Rock; N/A = not available; and NRHP = National Register of Historic Places

VISUAL RESOURCE CONSIDERATIONS (CIRCULAR MFSA-2, SECTION 3.7(10), 3.7(11))

TABLE F-27				
Summary of Visual Resource Impacts Within Study Area of Alternative Routes				
Resource	Alternative A	Alternative B	Alternative C	Alternative D
VISUAL SENSITIVITY				
Residential Clusters				
Baker	No	Yes	Yes	Yes
Colstrip	Yes	Yes	Yes	Yes
Forsyth	Yes	No	No	No
Miles City	Yes	No	No	No
Plevna	Yes	Yes	Yes	Yes
Rosebud	Yes	No	No	No
Recreation Viewpoints				
Knowlton BLM Recreation Area	Yes	Yes	Yes	Yes
Pumpkin Creek Ranch/Tongue River Ranch	No	No	Yes	No
Strawberry Hill Recreation Area	Yes	No	No	No
Transportation Viewpoints				
Interstate 94	Yes	Yes	No	No
State Highway 7	Yes	Yes	Yes	Yes
State Highway 59	Yes	Yes	Yes	Yes
U.S. Highway 12	Yes	Yes	Yes	Yes
VRM CLASSES				
Class II	19.3%	9.1%	13.0%	9.2%
Class III	29.1%	29.0%	29.4%	25.7%
Class IV	51.6%	61.9%	57.6%	65.1%
<p>Note: Yes = Resource is within the Study Area for the alternative route. No = Resource is not within the Study Area for the alternative route.</p> <p>Source: U.S. Census, 2020a,b,c,d,e,f</p>				