Fort Peck Indian Reservation. Alternative A1A crosses the Bitter Creek ACEC. The diversion canal that supplies, and is included within, Medicine Lake NWR also would be crossed by Alternative A1A; however it would be likely the crossing of this area that would utilize HDD. See **Table 4-6** for a detailed tabulation of all lands managed by public agencies crossed by each alternative. In each instance if the route were to be chosen, preconstruction planning and mitigation measures would be discussed with the appropriate agency in order to cross the area in the best way possible. At this time no specially managed buffer areas surrounding national wilderness areas and national primitive areas have been identified.

Big Game Species (Circular MFSA-2 Section 3.7(12)(b)(xv)(xvi)(xvii))

Principal big game species that could occur along all three routes include mule deer, white-tailed deer. All three routes cross winter range for mule deer, white-tailed deer, and pronghorn. Elk winter range and summer security areas are not crossed by any of the three routes. In addition, mountain goat and bighorn sheep seasonal ranges are not crossed by the proposed alternative routes (**Attachment A, Figure 3**).

Small Game Species

Small game species that could occur along the alternative routes include upland gamebirds, waterfowl, furbearers, and small mammals. Specific species could include mourning dove, northern bobwhite, ring-necked pheasant, greater sage-grouse, sharp-tailed grouse, ruffed grouse, gray partridge, wild turkey, eastern fox squirrel, eastern gray squirrel, red squirrel, eastern cottontail, sandhill crane, and a number of migratory waterfowl. Furbearers include beaver, bobcat, red fox, gray fox, swift fox, raccoon, badger, ermine, least weasel, long-tailed weasel, and mink.

Greater Sage-Grouse/Sharp-tailed Grouse (Circular MFSA-2 Section 3.7(12)(b)(xviii))

The greater sage-grouse is considered the most sensitive small game species along all three alternative routes and is discussed further as a special status species in Section 4.3.4.3 and **Attachment H**. Sage-grouse and sharp-tailed grouse lek sites and distribution is found in **Confidential Volume 4A**. ~~The distribution of sage-grouse and sharp-tailed grouse lek sites and winter range is found in **Confidential Volume 4A**.~~ The number of leks crossed by each alternative route is discussed under each route description. According to MFWP, designated winter range for grouse is not crossed by any of the alternative routes, but surveys in Fallon County have identified important winter areas (MFWP 2009a). Data on important grouse winter ranges and distribution is currently being processed by the MFWP and will be provided as soon as it is available.

Waterfowl (Circular MFSA-2 Section 3.7(12)(b)(xix); Section 3.8 (1)(c)(v))

No state or federally managed waterfowl production areas are crossed by any of the three alternative routes. Route B crosses one USFWS Wetland Easement in Phillips County and Route A1A crosses a diversion canal that supplies, and is included within, Medicine Lake NWR. Additionally, information requests directed toward the MFWP regarding prime waterfowl habitat or waterfowl concentration areas have not identified any along any of the three alternative routes (MFWP 2008f). ~~No waterfowl production areas are crossed by any of the three alternatives.~~ In order to evaluate the amount of high waterfowl population densities and prime waterfowl locations, an analysis of waterbodies greater than 10 acres was conducted. **Tables 4-23**, **4-28**, and **4-33** in Section 4.3.5, list the locations of these sites. These locations are discussed under the appropriate route.

Nongame Species

The three routes traverse various regions, which are inhabited by a diversity of nongame species (e.g., small mammals, raptors, songbirds, amphibian, and reptiles). Nongame mammals include shrews, bats, squirrels, prairie dogs, pocket gophers, pocket mice, voles, and mice. These small mammals provide an important prey base for the region's predators including, coyote, badger, skunk, raptors (eagles, buteos, accipiters, owls), and snakes.

The majority of the songbirds inhabiting the region, particularly in woodland areas, are neotropical migrants. These are birds that breed in North America but winter in the neotropical region of Central and South America. Examples of neotropical migrants that potentially could occur in the area of the proposed route include lark bunting, kingbird, and various vireos and warbler species. Eastern kingbird, American crow, western and

eastern meadowlark, horned lark, and sparrows are common open-country inhabitants, while woodpeckers, blue jay, chickadees, wrens, vireos, warblers, and cardinals are typical summer or year-long residents of shrublands and woodlands.

Nongame birds include a variety of songbirds and raptor species, most being species associated with open, grassland habitat, although woodland species also are represented along woodland riparian corridors as well as in upland forests along the route. Raptors likely to be present in open habitats include turkey vulture, burrowing owl, golden eagle, red-tailed hawk, Swainson's hawk, northern harrier, ferruginous hawk, American kestrel, short-eared owl, and great horned owl. The northern harrier, short-eared owl, burrowing owl, and ferruginous hawk are the only ground nesters.

Surveys (Circular MFSA-2 Section 3.7(12)(b)(xxii))

An aerial survey was completed to collect raptor nest and prairie dog town occurrence information along all routes from September 22 through September 25, 2008. For raptor nests, the survey included coverage of all alternative ROWs and an area of at least 0.25 mile on each side of each proposed alignment. At major river crossings; survey coverage was expanded to 1 mile on each side of the ROW to search for bald eagle nests. September raptor nest data are presented in **Attachment I**. Additional raptor nest surveys are planned for April 2009 and will encompass 0.5 miles on each side of the centerline for each alternative route.

For prairie dog towns, the survey documented all towns crossed by the proposed routes. All aerial surveys were conducted in a helicopter with a pilot and a two-person survey team. The results of these surveys are listed under each specific route.

Aquatic Resources

Aquatic resources are defined in this study as fish and invertebrate communities that inhabit perennial streams and pond/lake environments. The description of aquatic communities focuses on important fisheries, which are defined as species with recreational or commercial value or threatened, endangered, or sensitive status (i.e., special status). This section describes recreationally or commercially important fisheries that occur at or immediately downstream of the proposed crossings. Special status aquatic species are discussed in Section 4.3.4.3. The study area for aquatic resources includes the perennial streams, rivers, and ponds/lakes that will be crossed by the proposed pipeline route. Other waterbodies are included if they are located within approximately 0.5 mile of the proposed crossing and support recreationally or commercially important game fish or special status aquatic species.

Invertebrate communities that occur in waterbodies along the proposed route include worms, immature and adult insect groups, shellfish, and other forms of aquatic life. The composition can vary depending on flowing or standing water and other physical characteristics of the waterbody. Invertebrates function in the aquatic environment through their food web dynamics and are valued as indicators of water quality. For the purpose of describing aquatic resources, it is assumed that invertebrates are present in all Project area waterbodies.

Recreationally important fish species or groups that occur within waterbodies crossed by the proposed route are listed in **Table 4-10**. **Table 4-10** also includes the associated spawning periods and habitats. Additionally, detailed information acquired from MFWPs MFISH Database can be found in Attachment P, Response to SIR-1, Section 3.8(1)(c)(iii).

The Missouri and Yellowstone rivers are the only rivers listed as having fisheries values of Class I or II by the MFWP. These rivers are crossed by Route B only. The Missouri and Yellowstone rivers will be crossed using the HDD measures. Routes A and A1A do not cross any Class I or II rivers (Circular MFSA-2, Section 3.7(12)(b)(xi)).

### 4.3.4.2 Baseline Data and Description – Route A

Wildlife Habitats and Special Interest Areas

Undeveloped wildlife habitat that will be crossed on Route A includes approximately: 17.5 miles of federal land, 89.6 miles of tribal lands, 14.3 miles of state land, 0.67 mile of emergent wetlands, 0.05 mile of forested wetlands, 0.13 mile of scrub-shrub wetlands, 88.53 miles of grassland, and 0.02 mile of forests.

**Table 4-10 Game and Commercial Fish Spawning Periods and Habitat**

| Species or Group [1] | Spawning Periods (in gray) Months [2] | | | | | | | | | | | | Habitat |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D | |
| Burbot | ■ | ■ | ■ | | | | | | | | | ■ | Eggs are scattered over sand or gravel substrates. |
| Bass | | | | | ■ | ■ | | | | | | | Shallow areas over clean gravel and sand bottoms. |
| Brown bullhead | | | | ■ | ■ | | | | | | | | Spawn in shallow areas by building nests in mud substrate. |
| Bullhead (yellow and black) | | | | | ■ | ■ | | | | | | | Usually spawn in weedy or muddy shallow areas by building nests. |
| Buffalo fish | | | | ■ | ■ | ■ | | | | | | | Spawn at depths of 4 to 10 feet over gravel or sand substrates. |
| Carp | | | | ■ | ■ | ■ | | | | | | | Adhesive eggs scattered in shallow water over vegetation, debris, logs, or rocks. |
| Catfish (flathead and blue) | | | | | | ■ | ■ | | | | | | Nest builders with habitat similar to channel catfish. |
| Channel catfish | | | | | ■ | ■ | ■ | | | | | | Prefers areas with structures such as rock ledges, undercut banks, logs, or other structure where it builds nests. |
| Crappy | | | | | ■ | ■ | | | | | | | Eggs deposited in depressions on bottom in cove or embayments. |
| Freshwater drum | | | | | ■ | ■ | | | | | | | Buoyant eggs drift in river currents during development. |
| Muskellunge | | | | | ■ | ■ | | | | | | | Spawn in tributary streams and shallow lake channels. |
| Northern pike | | | | | ■ | ■ | | | | | | | Small streams or margins of lakes over submerged vegetation. |
| Paddlefish | | | | ■ | ■ | | | | | | | | Moves into rivers and spawns over flooded gravel bars. |
| Sauger | | | | ■ | ■ | | | | | | | | Moves into tributary streams or backwaters where they spawn over rock substrates. |
| Shovelnose sturgeon | | | | | ■ | ■ | | | | | | | Spawning occurs in open water channels of large rivers over rocky or gravelly bottoms. |
| Sunfish | | | | | ■ | ■ | ■ | ■ | | | | | Nest builders in diverse substrates and shallow depths. |
| Walleye | | | | ■ | ■ | | | | | | | | Spawn in lakes and streams in shallow water over rock substrates. |
| White bass | | | | ■ | ■ | ■ | | | | | | | Egg masses deposited over sand bars, submerged vegetation, or other instream debris. |
| Yellow perch | | | | ■ | ■ | ■ | | | | | | | Shallow open water over weedy areas. |

[1] Rainbow trout is not included because the species does not spawn in streams crossed by the pipeline routes.

[2] Spawning periods are approximate and could occur in only a portion of a particular month.

Source: Eddy and Underhill 1974; Harlan et al. 1987; Skaar 2001.

*Phillips County USFWS Wetland Easement*

The proposed Route A crosses this USFWS wetland easement between Mileposts 4.19 and 5.01 (USFWS 2008a) in Phillips County. A wetland easement is "a legal agreement signed with the United States of America, through the US Fish and Wildlife Service (Service) pays the landowner to permanently protect wetlands. Wetlands covered by an easement cannot be drained, filled, leveled, or burned. When these wetlands dry up naturally, they can be farmed, grazed, or hayed. Wetlands covered by an easement are mapped and a copy of the easement and maps is sent to the landowner. No signs are placed on the property and the easement does not affect hunting or mineral rights" (USFWS 2008c).

*Fort Peck Indian Reservation*

Option A would transect 89.6 miles of the Fort Peck Indian Reservation. The USFWS supports the rights of Native Americans to be self-governing, and further supports the authority of Native American governments to manage, co-manage, or cooperatively manage fish and wildlife resources, and to protect their federally recognized authorities (USFWS 1994). Additional tribal consultation regarding fish and wildlife impacts and mitigation would then be necessary prior to the construction of this alternative route.

*Bitter Creek ACEC and WSA*

The Bitter Creek ACEC and WSA are BLM public lands in northern Valley County where special management attention is required to protect important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems, and to protect life and safety from natural hazards (BLM 2000). Route A crosses the ACEC between Mileposts 41.79 and 42.35, 42.94 and 42.95, and 44.39 and 47.96 for a total of 4.13 miles and 55.07 acres (based on a nominal construction ROW of 110 feet).

Big Game, Small Game, and Nongame (Circular MFSA-2 Section 3.7(12)(xv))

Big game species occurring along the proposed Route A are similar to those mentioned for all routes. Based on GIS analysis from the MFWP and MTNHP, **Table 4-11** lists the length and affected acreage of winter game ranges crossed by Route A.

Small game species occurring along the proposed Route A are similar to those mentioned for all routes. Based on the MFWP historic data, 8 greater sage grouse lek sites have been identified as occurring within 4 miles of Route A. Sixteen sharp-tailed grouse lek sites have been identified as occurring within 2 miles of Route A.

Nongame species occurring along the proposed Route A are similar to those mentioned for all routes. The September 2008 aerial surveys located prairie dog towns along Route A at the locations listed in **Table 4-12**. **Attachment I** lists the locations of raptor nests along Route A. A total of eight raptor stick nests were identified during the overflight. All eight were inactive at the time of survey.

Aquatic Resources

Route A will cross five perennial streams. Streams used as sources of hydrostatic testing are listed in **Table 4-26** in subsection 4.3.5.2. Detailed information acquired from MFWP's MFISH Database for these streams can be found in Attachment P. Game fish include a variety of warm water species listed in **Table 4-10**. Route A does not cross any Class I or II fisheries. A list of game fisheries crossed or downstream of Route A is found in **Table 4-13**.

#### 4.3.4.3 Baseline Data and Description – Route A1A

Wildlife Habitats and Special Interest Areas

Undeveloped wildlife habitat that will be crossed on Route A1A includes approximately: 17.4 miles of federal land, 1.0 mile of tribal lands, 35.2 miles of state land, 1.81 miles of emergent wetlands, 0.04 mile of forested wetlands, 0.65 mile of scrub-shrub wetlands, 86.63 miles of grassland, and 0.02 mile of forests.

*Bitter Creek ACEC and WSA*

The Bitter Creek ACEC and WSA are BLM public lands in northern Valley County where special management attention is required to protect important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems, or to protect life and safety from natural hazards (BLM 2000). Route A1A crosses the ACEC between Mileposts 41.79 and 42.35, 42.94 and 42.95, and 44.39 and 47.96, for a total of 4.13 miles and 55.07 acres (based on a 110-foot construction ROW).

*Medicine Lake National Wildlife Refuge*

Route A1A crosses a small portion of the Medicine Lake NWR between Mileposts 169.19 and 169.25, equaling a total of 0.06 mile and 0.8 acre. The crossing is of the diversion canal that supplies, and is included within, Medicine Lake NWR; however, it would be likely the crossing of this area that would utilize HDD.

Big Game, Small Game, and Nongame

Big game species occurring along the proposed Route A1A are similar to those mentioned for all routes. Based on GIS analysis from the MFWP and MTNHP, **Table 4-14** lists the length and affected acreage of game ranges crossed by Route A1A.

Based on the MFWP historic data, 8 greater sage grouse lek sites that have been identified as occurring within 4 miles of Route A1A. One sharp-tailed grouse lek site has been identified as occurring within 2 miles of Route A1A.

Route A1A crosses the Medicine Lake National Wildlife Refuge (NWR) diversion canal that supplies, and is included within, Medicine Lake NWR. Medicine Lake NWR was purchased for its known importance to breeding and migrating waterfowl. Most common nesting ducks include mallard, gadwall, northern pintail, northern shoveler, blue-winged teal, and lesser scaup, with a total of 14 species breeding locally. More than 300 pairs of Plains Canada geese breed in the refuge complex. Migrating waterfowl species include mostly ducks, Canada and white-fronted geese, and tundra swans, with a smaller number of snow geese (USFWS 2009a).

Nongame species occurring along the proposed Route A1A are similar to those mentioned for all routes. The September 2008 aerial surveys located prairie dog towns along Route A1A at the locations listed in **Table 4-15**. **Attachment I** lists the locations of raptor nests along Route A1A. A total of 19 raptor nests were identified during overflight. All 19 were inactive at the time of survey.

Aquatic Resources

Route A1A will cross 10 perennial streams, all proposed to be crossed using dry-ditch techniques. Additionally, streams used as sources of hydrostatic testing are listed in **Table 4-31** in subsection 4.3.5.3. Detailed information acquired from MFWP's MFISH Database for these streams can be found in Attachment P. Game fish include a variety of warm water species listed in **Table 4-10**. Route A1A does not cross any Class I or II fisheries. A list of game fisheries crossed or downstream of Route A1A is found in **Table 4-16**.

#### 4.3.4.4 Baseline Data and Description – Route B

Wildlife Habitats and Special Interest Areas

Undeveloped wildlife habitat that will be crossed on Route B includes: 0.82 mile of USFWS property/easements, 42.6 miles of federal land, no tribal lands, 19.4 miles of state land, 1.81 miles of emergent wetlands, 0.04 mile of forested wetlands, 0.65 mile of scrub-shrub wetlands, 171.65 miles of grassland, and 0.38 mile of forests.

*Phillips County USFWS Wetland Easement*

Route B crosses this USFWS wetland easement between Mileposts 4.19 and 5.01 equaling 0.82 mile of disturbance (USFWS 2008a) in Phillips County. A wetland easement is described by the USFWS as "a legal agreement signed with the United States of America, through the U.S. Fish and Wildlife Service (Service)" that

pays landowners to permanently protect wetlands. Wetlands covered by an easement cannot be drained, filled, leveled, or burned. When these wetlands dry up naturally, they can be farmed, grazed, or hayed. Wetlands covered by an easement are mapped and a copy of the easement and maps is sent to the landowner. No signs are placed on the property and the easement will not affect hunting or mineral rights" (USFWS 2008c).

**Table 4-14 Big Game Winter Ranges Crossed by Route A1A**

| Game Type | Milepost Locations | | Total Length Crossed (miles) | Acreage Affected During Construction |
|---|---|---|---|---|
| | Beginning Milepost | Ending Milepost | | |
| White-tailed deer winter range | 75.10 | 82.18 | 7.1 | 94.4 |
| | 87.20 | 90.21 | 3.1 | 40.1 |
| | 151.53 | 161.73 | 10.2 | 136 |
| | 169.41 | 173.39 | 3.9 | 53.1 |
| | 175.40 | 183.11 | 7.7 | 102.8 |
| | | **Total** | **31.9** | **426.4** |
| Mule deer winter range | 8.95 | 27.36 | 18.4 | 245.5 |
| | 30.47 | 51.52 | 21.1 | 280.7 |
| | 148.46 | 153.63 | 5.2 | 68.9 |
| | | **Total** | **44.6** | **595.1** |
| Antelope winter range | 11.31 | 12.32 | 1.1 | 13.5 |
| | 12.60 | 13.76 | 1.2 | 15.5 |
| | 14.00 | 20.43 | 6.4 | 85.7 |
| | 20.47 | 26.19 | 5.7 | 76.3 |
| | 38.36 | 50.52 | 12.2 | 162.1 |
| | | **Total** | **26.5** | **353.1** |

Source: MFWP 2008a (http://nris.mt.gov/gis/); acreage based on a nominal construction ROW of 110 feet.

**Table 4-15 Route A1A – Black-tailed Prairie Dog Towns Identified during the September 2008 Aerial Surveys**

| Approximate Milepost | Activity Status | Town Description/Comments |
|---|---|---|
| 57.8 to 63.0 | Active | Small town (10 to 20 burrows), low density |
| 74.2 to 81.3 | Active | Small town (10 to 20 burrows), low density, no individuals observed |
| 83.9 to 87.0 | Active | Large town, high density, near wet drainage |
| 88.8 to 92.0 | Active | Large town, moderate density |
| 92.9 to 101.2 | Active | Large town, high density |
| 106.7 | Active | Small town, low density |
| 109.8 to 111.7 | Active | Large town, high density |
| 114.2 to 115.8 | Active | Large town, moderate density |
| 120.1 to 120.7 | Active | Moderate town, high density |
| 133.6 to 134.6 | Active | Moderate town, moderate density |
| 138.9 to 139.8 | Active | Large town, high density |
| 173.2 to 172.9 | Active | Moderate size and density |
| 193.2 | Active | Small town, low density |
| 204.5 | Active | Moderate size and density |

**Table 4-16 Game Fisheries in Waterbodies Crossed or Downstream of Route A1A**

| County | Waterbody Name | Fishery Class[1] | Number of Crossings |
|---|---|---|---|
| Phillips | Dunham Coulee | Non-salmonid fishery | 1 |
| Phillips | East Fork Whitewater Creek | Non-salmonid fishery | 1 |
| Phillips | Frenchman Creek | Non-salmonid fishery | 1 |
| Valley | Jordan Coulee | Non-salmonid fishery | 1 |
| Valley | Big Coal Bank Coulee | Non-salmonid fishery | 1 |
| Valley | Rock Creek | Non-salmonid fishery | 1 |
| Valley | Collins Creek | Non-salmonid fishery | 2 |
| Valley | East Fork Collins Creek | Non-salmonid fishery | 1 |
| Valley | Burnett Creek | Non-salmonid fishery | 1 |
| Valley | Willow Creek | Non-salmonid fishery | 1 |
| Valley | Chisholm Creek | Non-salmonid fishery | 1 |
| Valley | Eagles Nest Coulee | Non-salmonid fishery | 1 |
| Valley | Canyon Creek | Non-salmonid fishery | 1 |
| Valley | Buggy Creek | Non-salmonid fishery | 1 |
| Valley | West Fork Porcupine Creek | Non-salmonid fishery | 1 |
| Valley | Middle Fork Porcupine Creek | Non-salmonid fishery | 1 |
| Valley | Snow Coulee | Non-salmonid fishery | 1 |
| Valley | East Fork Snow Coulee | Non-salmonid fishery | 1 |
| Daniels | Hell Creek | Marginal salmonid fishery | 7 |
| Daniels | Shipstead Coulee | Marginal salmonid fishery | 1 |
| Daniels | West Fork Poplar River | Marginal salmonid fishery | 3 |
| Daniels | Police Creek | Marginal salmonid fishery | 1 |
| Daniels | Cabarett Coulee | Marginal salmonid fishery | 1 |
| Daniels | Poplar River | Marginal salmonid fishery | 1 |
| Daniels | Line Coulee | Marginal salmonid fishery | 1 |
| Daniels | Smoke Creek | Non-salmonid fishery | 1 |
| Sheridan | Wolf Creek | Non-salmonid fishery | 1 |
| Sheridan | Crazy Horse Creek | Non-salmonid fishery | 1 |
| Sheridan | Otter Creek | Non-salmonid fishery | 1 |
| Sheridan | Clarence Coulee | Non-salmonid fishery | 1 |
| Sheridan | Big Muddy Creek | Non-salmonid fishery | 1 |

**Table 4-16 Game Fisheries in Waterbodies Crossed or Downstream of Route A1A**

| County | Waterbody Name | Fishery Class[1] | Number of Crossings |
|---|---|---|---|
| Sheridan | Reserve Creek | Non-salmonid fishery | 1 |
| Sheridan | Neiser Creek | Non-salmonid fishery | 1 |
| Sheridan | Lake Creek | Non-salmonid fishery | 1 |
| Sheridan | Lost Creek | Non-salmonid fishery | 1 |
| Roosevelt | West Shotgun Creek | Non-salmonid fishery | 1 |
| Roosevelt | East Shotgun Creek | Non-salmonid fishery | 1 |
| Roosevelt | Snake Creek | Non-salmonid fishery | 1 |

[1] Non-salmonid fishery – Waters that do not provide habitat for trout and salmon species. Non-salmonid species include sturgeons, suckers, minnows, etc. Blue Ribbon – Class I: Recreational fishery of outstanding value. Red Ribbon fishery – Class II: Recreational fishery of high value.

Big Game, Small Game, and Nongame

Big game species occurring along Route B are similar to those mentioned for all routes. Based on GIS analysis from the MFWP and the MTNHP, **Table 4-17** lists the length and affected acreage of game ranges crossed by Route B.

Small game species occurring along Route B are similar to those mentioned for all routes. Based on the MFWP historic data, 24 greater sage grouse lek sites that have been identified as occurring within 4 miles of Route B. No historic sharp-tailed grouse lek sites have been identified within 2 miles of Route B.

Nongame species occurring along Route B are similar to those mentioned for all routes. Aerial surveys for raptor nests and prairie dog towns were conducted between September 22 and 25, 2008. One inactive prairie dog town was observed at the time of survey along Route B. **Attachment I** lists the locations of raptor nests along Route B. A total of 47 raptor nests were identified during the overflight. Of the 47 nests, 2 were active and 45 were inactive at the time of survey. One of the active nests was identified as a red-tailed hawk nest.

Aquatic Resources

Route B will cross 13 perennial streams in Montana. These include three larger rivers proposed for HDD crossing methods: the Milk River, the Missouri River, and the Yellowstone River. The Missouri River east of Fort Peck Reservoir to the border of Richland County is classified as a Class II, Red Ribbon Fishery and the Yellowstone River through Prairie County is classified as a Class I, Blue Ribbon Fishery. Game fish include a variety of warm water species such as burbot, walleye, crappie, channel catfish, pumpkinseed, sauger, green sunfish, bluegill, northern pike, sturgeon, and paddlefish (BLM 1995).

The remaining 10 streams are all proposed to be crossed using dry-ditch techniques. Additionally, streams used as sources of hydrostatic testing are listed in **Table 4-36** in subsection 4.3.5.4. Detailed information acquired from MFWP's MFISH Database for these streams can be found in Attachment P. A list of game fisheries crossed or downstream of the proposed Route B is found in **Table 4-18**.

### 4.3.4.5 Impact Assessment

Terrestrial Wildlife

*Issues*

- Habitat loss or alteration and incremental habitat fragmentation;
- Loss of breeding success from exposure to construction and operational noise and from higher levels of human activity;
- Limited direct mortalities from Project construction and operation; and
- The potential loss of individuals from exposures to accidental crude oil releases.

*Construction*

Wildlife Habitat

Potential impacts to terrestrial wildlife species from the Project can be classified as short-term, long-term, and permanent. Short-term impacts consist of activities associated with Project construction and changes in wildlife habitats lasting less than 5 years. This would include impacts to species dependent on herbaceous habitats. Long-term impacts would consist of changes to wildlife habitats lasting 5 years or more and would include species dependent on habitats with woody species components. Permanent impacts would result from construction of aboveground facilities that convert natural habitat to an industrial site. The severity of both short- and long-term impacts would depend on factors such as the sensitivity of the species impacted, seasonal use patterns, type and timing of construction activities, and physical parameters (e.g., topography, cover, forage, and climate).

Less mobile or burrowing species may be lost to construction vehicles and equipment. Other potential impacts include habitat loss or alteration, habitat fragmentation, and animal displacement. Individuals may be permanently displaced and perish due to increased competition or other effects of being forced into sub-optimal habitat. Indirect impacts from increased noise and additional human presence also could lead to displacement and lowered fitness. However, the habitat adjacent to the construction zone would support displaced animals due to the small scale amount of disturbance compared to the surrounding available habitat.

Habitat fragmentation is frequently a concern when clearing ROWs. In general, fragmentation results in an altered wildlife community as species more adaptable to edge habitats establish themselves, while species requiring undisturbed habitats are subject to more negative effects. These effects would result in overall changes in habitat quality, habitat loss, increased animal displacement, reductions in local wildlife and migratory bird numbers, and changes in species composition. The severity of these effects on migratory birds depends on factors such as sensitivity of the species, seasonal use, type and timing of construction activities, and physical parameters (e.g., topography, cover, forage, and climate). The effects of fragmentation on native wildlife populations would be relatively small since the majority of the Project would cross relatively open habitat types (e.g., shrubland, grassland, and cultivated land).

Due to the linear nature of the Project over a large geographic area (approximately 282 linear miles of new pipe), the area impacted will represent a small percent of available wildlife habitat on a regional basis. The effects of short- and long-term habitat loss on native wildlife populations will be relatively small since the majority of habitat disturbance will be restored to the pre-disturbance condition. Agricultural lands will continue to be used for pre-construction uses while rangeland/grassland habitats will be reclaimed to primarily herbaceous communities using appropriate seed mixes prescribed by local, state, and federal agencies. Loss of shrub communities will be long-term (5 to 20 years or more) within reclaimed areas of the construction ROW since these communities will become reestablished through the natural reinvasion of woody species. Loss of woodland vegetation will be permanent since trees will not be allowed to reestablish within 15 feet of either

side of the pipeline centerline. Habitat losses also will be long-term at permanent aboveground pipeline facility locations such as pump stations and access roads.

Construction of Route B will result in the short-term disturbance and long-term habitat modification of: 0.82 mile of the Phillips County USFWS wetland easement, 19.4 miles of state lands, and 42.6 miles of federal lands. Long-term conversion of wooded habitats to herbaceous communities will result in an increase in habitat fragmentation in these areas but habitat conversion also could increase habitat diversity, depending on the extent of habitats affected and the extent and distribution of undisturbed habitats remaining in the state wildlife areas. Construction during the fall hunting seasons will create conflicts with hunter use of these areas.

Big Game Species

Construction impacts to primary big game species (white-tailed deer, mule deer, and antelope) will include the short-term loss of potential forage and will result in a temporary increase in habitat fragmentation within the proposed surface disturbance areas. These losses of vegetation will represent only a small percentage of the overall available habitat within the broader Project region. The loss of shrubland vegetation would be long-term (greater than 5 years and, in some cases, more than 20 years). In the interim, herbaceous species will become established within 3 to 5 years, depending on future weather conditions and grazing management practices that would affect reclamation success in the Project region. In most instances, suitable habitat adjacent to the disturbed areas would be available for wildlife species until grasses and woody vegetation were reestablished within the disturbance areas.

Indirect short-term impacts will result from increased noise levels and human presence during surface disturbance activities. Big game animals (especially antelope and mule deer) would decrease their use within 0.5 mile of surface disturbance activities due to increased noise levels (Ward et al. 1980; Ward 1976). This displacement would be short term and animals would return to the disturbance area following construction activities.

Small Game Species

Potential impacts to small game from the Project will result in the temporary loss of habitat and short-term habitat fragmentation until vegetation is reestablished. Indirect impacts could include the temporary displacement of small game from the disturbance areas as a result of increased noise and human presence. Although habitats adjacent to the Project and other disturbance areas may support some displaced animals, species that are at or near carrying capacity could suffer some increased mortalities due to displacement. Displacement or loss of small game animals from disturbance areas will be short-term because of their generally high reproductive potentials and the fact that animals will return to the disturbance areas following completion of construction and reclamation activities.

Potential direct impacts to small game species could include nest or burrow abandonment, loss of eggs or young where construction occurs during the breeding season. Impacts to high waterfowl population densities near the crossing of the diversion canal in Medicine Lake NWR will be short-term during construction due to the utilization of the HDD crossing method. Of greatest concern is the potential for loss of lekking grounds and other greater sage-grouse and sharp-tailed grouse habitat (e.g., nesting habitat).

Although the Project would not result in a permanent loss of habitat along the pipeline ROW, the regeneration of sagebrush would likely be slow. A 30-year interval represents the approximate recovery period for a stand of Wyoming big sagebrush. A 20-year interval represents the approximate recovery time for a stand of mountain sagebrush (Connelly et al. 2000). The potential impacts on sage-grouse habitat would be minimized by locating the proposed ROW within previously disturbed areas (i.e., adjacent to existing pipelines and/or roads) to the extent possible. Given the abundant suitable habitat in the general area, it is not likely that the minor, yet long-term, loss of habitat along the pipeline ROW would affect sage-grouse populations in the vicinity of the Project.

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## 4.3.5 Water Resources

This section includes identified water resources that are crossed by or affected by the alternate routes developed for the Project. General conditions that are common to all alternative routes are first discussed. Following the general discussion, conditions unique to each individual alternative route are discussed. After the conditions, impact assessments are discussed in the same format, with general consequences followed by unique consequences for individual alternative routes.

### 4.3.5.1 Baseline Data and Description – All Routes

Surface Water (Circular MFSA-2, Section 3.7(12)(b)(vi))

Surface water resources that occur along Route B are located in the Missouri River water resource region, as identified by its major river systems (Seaber et al. 1994). Primary drainages along all alternatives are depicted in **Attachment A**, **Mapbook 3**.

Waterbody crossings were identified utilizing GIS analysis of the USGS National Hydrographic Dataset (NHD). The results were checked against USGS 1:24,000 topographic quadrangle maps and any necessary corrections or additions to waterbody names were made. The NHD classifies waterbodies according to the hydrologic characteristics of each stream reach or waterbody. The features classified as “Artificial Path” reflect a waterbody that is too wide to be represented by a single line feature. In the case of this classification, each instance was analyzed on USGS maps and was either assigned the classification of perennial stream/river or reservoir. This was done under the assumption that streams large enough to receive the “Artificial Path” designation are in fact perennial in nature and that the vast majority of impounded waterbodies in this area are man-made reservoirs. Detailed tabulations of the stream crossings associated with each of the alternative routes are included Sections 4.3.5.2, 4.3.5.3, 4.3.5.4, and **Attachment J**.

Major waterbodies within 10 stream miles were identified in a two-part process. GIS analysis of the NHD was utilized to identify all feature types of lake/pond or reservoir that were greater than 10 acres in surface area and within 10 miles of the centerline. Each of these features was then investigated using desktop analysis to determine the hydrologic connectivity and up- or down-stream location. Those features that were hydrologically connected and located downstream were included in **Tables 4-23**, **4-28**, and **4-33** (subsection 4.3.5.2).

The National Park Service (NPS), National Center for Recreation and Conservation’s Nationwide Rivers Inventory was consulted regarding Wild and Scenic Rivers designation. No river corridors in the Wild and Scenic Rivers system or those that may be eligible for inclusion in the system are crossed by any of the alternative routes (NPS 2008).

Water Quality

The Clean Water Act (CWA), Section 303(c), requires each state to review, establish, and revise water quality standards for all surface waters within the state. To comply with this requirement, Montana has developed its own beneficial use classification system to describe state-designated use(s). Regulatory programs for water quality standards include default narrative standards, non-degradation provisions, a Total Maximum Daily Load (TMDL) regulatory process for impaired waters, and associated minimum water quality requirements for the designated uses of listed surface waterbodies within the state.

topsoils with the subsoil, thereby reducing soil productivity. Rutting is most likely to occur on moist or wet fine textured soils, but also may occur on dry sandy soils due to low soil strength.

Where stony or rocky soils are crossed, revegetation recovery rates may be slow. Route A1A would impact the most substantial percentage of stony or rocky soils, approximately 40.0 percent. Comparatively Route A and Route B would impact about 26.0 and 13.1 percent, respectively, of stony or rocky soils. Similarly, in areas of shallow bedrock (relative to the trench excavation depth), excavation may result in rock fragments remaining on the surface or within the trench backfill at levels that will limit the success of restoration efforts. Where the pipeline route crosses soils with lithic bedrock blasting or rock saws may be required for trenching. Route A and A1A do not cross any soils that are shallow to lithic bedrock. Only 1.6 percent of Route B is shallow to lithic bedrock.

Droughty soils would be prone to wind erosion during construction and would be more difficult to successfully stabilize and revegetate following construction. Less than 15 percent of droughty soils would be crossed by all routes. Similarly, scattered areas of low reclamation potential soils, such as soils that are saline, sodic, or strongly alkaline are known to occur in the Project region. Saline and/or sodic soils often have drainage limitations and may undergo compaction impacts similar to the hydric or compaction-prone soils. In addition, the success of stabilization and restoration efforts in these areas may be limited unless additional treatments and practices are employed to offset the adverse physical and chemical characteristics of the soils. Route B crosses approximately 63.5 percent of low reclamation potential soils compared to 35.5 percent and 28.2 percent of Routes A and A1A, respectively.

Cretaceous shales weather to form soils high in smectitic clay minerals typically referred to as Bentonite clays. These soils typically have high shrink-swell potentials and also are prone to erosion by water when disturbed. Please see **Attachment L**, Smectitic Soils Associated with Cretaceous Shales, which provides a summary of smectitic soils crossed in Montana. Soils such as the Sunburst series occur in Valley, Phillips, and McCone counties. The Sunburst series has a very high shrink-swell potential due to a high percentage of smectite clay minerals. The proposed route will cross numerous other smectitic soils such as Neldore, Scobey, Gerdrum, Creed, and Bascovy series. Badlands also may be associated with cretaceous shales and may be highly erodible and difficult to reclaim when disturbed. Please refer to Section 4.3.6.1 for further discussion on slope instability associated with cretaceous shales and swelling clays.

The same types of impacts to soils occur as a result of road construction and upgrading, but to a lesser degree. Where the topography is relatively flat and grading occurs, it would be limited to the upper subsurface soil horizons. Where cut and fill slopes occur, the soil profiles would be mixed with a corresponding loss of soil structure. South and west facing slopes would be warmer and drier than east and north facing slopes, and thus more challenging to reclaim. Wind erosion is likely to increase on bare soils. Soil compaction would result in a corresponding loss of infiltration, permeability, and soil aeration. Runoff and soil erosion may increase as a result of compaction, specifically where steep slopes and severely erodible soils are crossed. Where road surfacing is applied, erosion would be reduced. Soil productivity would be reduced if topsoil is eroded or mixed with subsoil due to rutting or grading. These impacts would occur for the duration of the project and until successful reclamation is achieved. **Table 4-48a** provides information on soil characteristics for access roads associated with the various routes. Please see **Appendix N** for further information on access roads.

**Table 4-48a Soil Characteristics for Access Roads (miles)**

| Route | Low Revegetation Potential | Severe Wind Erosion Potential | Severe Water Erosion Potential | Severe Mass Movement Potential |
|---|---|---|---|---|
| A | 1.67 | 0.00 | 4.29 | 0.53 |
| A1A | 0.35 | 0.00 | 6.93 | 0.53 |
| B | 0.54 | 2.58 | 12.05 | 0.37 |

## Reclamation of Access Roads

The objective of reclamation is to return disturbed areas as near as practicable to pre-construction use and capability. This involves the treatment of soil as necessary to preserve approximate pre-construction capability, and the stabilization of the work surface in a manner consistent with the initial land use. All temporary Project access roads will be used and maintained for construction use only. After construction is complete, Keystone will reclaim temporary roads as near as practicable to pre-construction conditions unless the land owner requests that they be left un-reclaimed.

Pre-existing access roads that are expanded for construction could be reduced to pre-construction width after construction is finalized. If requested, portions of the road not originally used for vehicle travel will be reclaimed. To achieve this, any geotech material installed for road pack will be removed, and cut slopes, fill slopes, and borrow ditches will be restored to pre-construction contours, covered with topsoil, and re-vegetated wherever possible. This will restore habitat, forage, and visual resources in those areas, and would reduce soil erosion and maintenance costs.

To improve reclamation success, methods such as ripping, scarifying, topsoil replacement, construction of waterbars, pitting, mulching, redistributing woody debris, and barricading could also be employed on a site-specific basis. After the surface contour is restored and the soil prepared, seed mixtures would be applied as specified the landowner or land management agency. If waterbars are used, they will be removed and seeded following successful revegetation.

Keystone plans to minimize or mitigate potential impacts to soils by implementing the soil protection measures identified in the CMRP (**Attachment C**). The measures include procedures for segregating and replacing topsoil, trench backfilling, relieving areas compacted by heavy equipment, removing surface rock fragments, and implementing water and wind erosion control practices. In addition, Keystone will work closely with landowners and soil conservation agencies to identify and implement recommended soil conservation practices in specific areas where they are necessary. Damaged irrigation and tile drainage systems will be repaired in accordance with the CMRP.

To accommodate potential discoveries of contaminated soils, Keystone will develop unanticipated contaminated soil discovery procedures in consultation with relevant agencies. These procedures will be added to the CMRP. If hydrocarbon contaminated soils are encountered during trench excavation, the state agency responsible for emergency response and site remediation will be contacted immediately. A remediation plan of action will be developed in consultation with that agency. Depending on the level of contamination found, affected soil may be replaced in the trench or removed to an approved landfill for disposal.

Operation

Very small scale, isolated surface disturbance impacts resulting in accelerated erosion, soil compaction, spills, and related reductions in the productivity of desirable vegetation or crops could result from pipeline maintenance traffic and incidental repairs. Impacts related to excavation and topsoil handling are not likely to

occur. If they do occur, they will be limited to small areas where certain pipeline maintenance activities take place or where reclamation is unsuccessful. During operation, these types of impacts will be addressed with the affected landowner and a mutually agreeable resolution reached.

Keystone will employ multiple safeguards to prevent a pipeline release. The chance of a spill occurring is very low and if a spill occurred, the volume is likely to be relatively small. In the unlikely event of a pipeline release, Keystone would initiate its ERP and emergency response teams would contain and cleanup the spill. To minimize impacts to soils, appropriate remedial measures will be implemented to meet federal and state standards designed to ensure protection of human health and environmental quality. Additional information on potential impacts to soils resulting from a crude oil spill is provided in the Risk Assessment (**Attachment D**).

### 4.3.7.3 Summary of Route-Specific Soils Impacts

Route-specific impacts for soils are summarized in **Table 4-49**. Identified impacts will be substantially mitigated as discussed within this application and further outlined in the CMRP for all Routes. Based strictly on the relative lengths of the routes within the State of Montana and not taking into consideration the overall effect through Montana, South Dakota, and Nebraska, Route B has the greatest impacts. However, when the full Steele City Segment impacts are considered, frequently the additional length of Routes A and A1A would result in greater impacts.

**Table 4-49 Summary of Route-Specific Soils Impacts**

| Resource | Route Alternatives | | |
|---|---|---|---|
| | Route A | Route A1A | Route B |
| **Miles of Pipe** | | | |
| Steele City Segment | 919.7 | 951.3 | 850.7 |
| Portion in Montana | 180.7 | 205.5 | 282.7 |
| **Soils** | | | |
| Prime farmland | Route A crosses 46.9 miles of prime farmland. | Route A1A crosses 56.4 miles of prime farmland. | Route B crosses 68.8 miles of prime farmland. |
| Sensitive soils | Route A crosses 75.8 miles of smectitic soils. | Route A1A crosses 54.8 miles of smectitic soils. | Route B crosses 114.0 miles of smectitic soils. |

References

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## 4.3.9 Cultural Resources

### 4.3.9.1 Prehistoric and Historic Overview of the Study Area (MFSA-2 Section 3.4, 10a)

Eastern Montana contains a rich and varied cultural history which can be categorized into four prehistoric periods and the later historic period. Of the prehistoric periods, these four divisions can be further broken down into a multitude of human complexes associated with different food procurement strategies and technological advances. While very valid for a professional archaeological perspective, further analysis of the five periods of time is unwarranted for the purpose of overview and will be omitted from this document.

Prehistory in regards to human occupation in Montana begins with the Paleoindian Period, which ranges from 12,000 Before Present and continues until 8,000 Before Present. During this time span, humans residing on the Plains led a highly migratory lifestyle. This was in great part to the necessity of these populations to follow and exploit late Pleistocene animals and harvest associated plant life.

Of these populations the most well recognized Paleoindian group for this period is referred to as the Clovis complex. Clovis is categorized by a distinct, basally fluted projectile point; these points, along with associated material, are the earliest unequivocal evidence of a Paleoindian complex in North America. Clovis projectiles have been best known from areas such as the Colby mammoth kill site in Wyoming. Other complexes include, but are not limited to, Goshen, Folsom, Agate Basin, Hell Gap, Alberta, and Cody. All previously mentioned Paleoindian complexes mark technological or style changes which can be followed throughout time.

Directly following the Paleoindian Period is the Archaic Period. This period ranges from 8,000 Before Present to 1,500 Before Present and is marked by a shift from stemmed lanceolate projectiles to the use of large side notched forms. This indicates a drastic change in technology, where the emphasis in the Archaic Period changes from that of utilizing hand thrown spears toward the use of a propelled dart or atlatl. Not only is there a severe technological shift but a drastic climate change as well. This paleoclimatic change in turn triggered differing subsistence strategies, which may have emphasized an increased dependence on floral resources throughout the Plains.

The invention of the bow and arrow reflects a technological innovation which marks the Late Prehistoric Period that ranged from 1,500 Before Present to 250 Before Present. During this time human populations increased dramatically across the region which is evident from an increase in radiocarbon dating localities. Subsistence strategies carried along the same routes as the two earlier periods in the form of migratory hunting strategies and limited horticulture. The late prehistoric period also offers a diverse palate of rock art examples. This art ranges from fertility representations to grandiose depictions of bison hunts strewn across rock shelter walls.

The Protohistoric Period (250 to 130 Before Present), which is poorly represented in material remains in eastern Montana is categorized by major population migrations as well as significant changes involved with material culture. Native populations acquired the horse and increasing numbers of firearms and respectively began to utilize both, perhaps no other introduction was as significant a catalyst to the mobile ethnohistoric cultures of the Plains. Trade goods became very common during this period as did the introduction of metal tools, glass beads, and textiles.

Historical context in relation to this area is well documented, ranging from early expansion and the fur trade to Euro American settlement in the form of Homesteads and the expanse of agriculture. Railroads and collaborative highway efforts all shaped the area, as did the interactions between the native populations and the expanding Euro American groups. These interactions directly resulted in multiple treaties between the US government and various tribal entities, which in a way, now shape the manner in which some 12,000 years of history must now be addressed.

### 4.3.9.2 Native American Consultation and SHPO Data Requests

Tribal engagement has been initiated with 72 tribal members from 16 tribes for the entirety of the Project. These tribes were recognized as having a potential past or present affiliation with the Project area. Seven of the 16 Tribes are from Montana and only 3 have responded, see **Table 4-51**. Formal consultation with the tribes will be the responsibility of the DOS.

**Table 4-51 Tribal Contact List in Montana**

| Tribe | Date of Contact | Status |
|---|---|---|
| Blackfeet Nation | May 27, 2008 | Written reply as of July 24, 2008. Consultation desired. |
| Fort Peck Tribes | May 27, 2008 | Verbal reply as of July 24, 2008. Consultation desired. |
| Northern Cheyenne Tribe | May 27, 2008 | Written reply as of July 24, 2008. Consultation desired. |
| Salish and Kootenai Tribes | May 27, 2008 | No reply. |
| Little Shell | May 27, 2008 | No reply. |
| Crow | May 27, 2008 | No reply. |
| Chippewa Cree | May 27, 2008 | No reply. |

Efforts to identify places of traditional or religious importance to Native American tribes will continue throughout the environmental review and construction phases of the Project. The consultation process, once initiated, will include asking interested tribes to participate in consultation when a traditional cultural property (TCP) may be affected by the proposed Project. Any TCP that may be affected by the Project will be treated in accordance with the National Historical Preservation Act (NHPA), as amended, and its implementing regulations, and other applicable federal statutes and/or tribal laws and policies, as appropriate. No surface disturbance will occur within or immediately adjacent to the boundary of a TCP prior to completion of all consultation required by law. Any data recovery or mitigation plan will be reviewed and approved by the lead federal agency and appropriate SHPO. Tribal representatives will be asked to participate in the development of any such data recovery or mitigation plan in accordance with federal mandates.

~~Data requests have also been made of the Montana SHPO Office with regard to the three routes. File/record searches were requested and received for the areas crossed by each Route so that it could be determined what types of sites and previous cultural inventories have been conducted in these areas. The results of these file searches are summarized in **Table 4-52**.~~

Data requests have been made of the Montana SHPO Office with regard to the three routes and the associated access roads. File/record searches were requested and received for the areas crossed by each Route and the associated access roads to determine what types of sites and previous cultural inventories have been conducted in these areas. The results of these file searches are summarized in **Table 4-52**and **Table 4-52a.**

**Table 4-52 Class I File/Records Search Results (Pipeline)**

| Route | # Prehistoric Sites | # Historic Sites | # Unknown Sites |
|---|---|---|---|
| Route A | 13, 1 Eligible | 68, 9 Eligible | 148 |
| Route A1A[1] | 30, 1 Eligible | 20, 6 Eligible | 22 |
| Route B | 148, 0 Eligible | 62, 13 Eligible | 6 |

[1] Unique portion of Route A1A.

**Table 4-52a Class 1 Files/Records Search Results (Access Roads)**

| Route | # Prehistoric Sites | # Historic sites | # Unknown Sites |
|---|---|---|---|
| Route B | 5, 0 Eligible | 49, 20 Eligible | 62 |
| Route A | 9, 0 Eligible | 34, 2 Eligible | 81 |
| Route A1A | 9, 0 Eligible | 64, 7 Eligible | 88 |

All historic sites consist of historic farming/ranching activities and associated behavior (i.e., trash piles or corral structures). The overwhelming majority of sites throughout this region reflect a deep history associated with rural agriculture.

**Section 4.3.9.2a – Access Roads Routes for A, A1A, and B**

**Route A**

An additional files/records search initiated in respect to Route A produced a total of 124 sites. A summary is provided below (see Confidential Attachment M – Cultural Resources Information Systems Report [CRIS] Option A).

- 34 historic sites;
- 9 prehistoric sites;
- 81 unknown or no indication of age sites

Two historic sites are listed as eligible for the NRHP; two are listed as ineligible and the remaining 30 are considered undetermined. All prehistoric sites are listed as undetermined with the exception of one, which is categorized as ineligible. Two sites of unknown age as listed as ineligible and the remaining 79 are undetermined.

**Route A1A**

A final files/records search was performed for Route A1A. A total of 161 sites were previously recorded. A summary is provided below (see Confidential Attachment M – CRIS Option A).

- 64 historic;
- 9 prehistoric

- 88 unknown or no indication of age sites

Of the 64 historic sites, 3 are ineligible and 7 are eligible for listing on the NRHP; the remaining sites are undetermined. Two prehistoric sites are categorized as ineligible, and all 88 sites of unknown age are listed as undetermined by the Montana SHPO.

**Route B**

A Class 1 files/records search was performed in regards to access roads for Route B. This search yielded a total of 116 sites. A summary is provided below (see Confidential Attachment M –CRIS Option A).

- 49 historic sites;
- 5 prehistoric sites;
- 62 unknown or no indication of age sites.

Of the 49 historic sites 20 are listed as eligible for listing in the NRHP, and the remaining are listed as undetermined. All sites affiliated with prehistory or listed as being of unknown age are listed as undetermined by the Montana SHPO.

### 4.3.11.2 Impact Assessment (MFSA-2, Section 3.7(1)(d&e))

Projects Listed in Montana Tentative Construction Program for 2008 to 2012

In the Project area there is one transportation project that has been outlined in the Montana DOT Tentative Construction Program for 2008 to 2012 that may occur during the time of the Steele City Phase of Construction planned for 2011 to 2012 (Montana DOT 2008). Routes A and A1A are not expected to cross any Montana DOT construction projects. Route B may cross a bridge replacement project that is located near Highway 504 in Prairie County. This project is scheduled to occur in 2012.

Consultation with Montana Department of Transportation (MFSA-2, Section 3.7(9)(e))

Montana DOT was consulted regarding highway crossings and encroachment on highway ROWs. Through consultation with the Glendive, Montana, DOT office, the Manual on Uniform Traffic Control Devices was referenced as a suitable guideline. This is the only guideline the Project needs to reference for traffic control (Montana DOT 2008a). Consultation also was conducted with program and policy analysis for Montana DOT. In this consultation, the Project was encouraged to obtain all necessary road crossing and utility permits prior to construction (Montana DOT 2008b).

The Project CMRP states construction across paved roads and highways will be in accordance with the requirements of the road crossing permits and approvals obtained by Keystone. In general, all major paved roads and primary gravel roads will be crossed by boring beneath the road.

### 4.3.11.3 Access Roads (Circular MFSA-2, Section 3.7(7))

The location of access roads for each of the routes was determined by using U.S. Census Bureau (USCB) TIGER data and/or aerial interpretation. Existing (established) roads will be used for ROW access to the maximum extent practicable. Please see **Attachment A**, **Mapbook 1** for the location of all access roads for each route alternative. The majority of the access roads that were identified within the Project study area are used for agriculture and/or livestock purposes, and consists of dirt or graveled roads. Since many of these roads are private, and not maintained; they may or may not require improvements. The majority of these roads will only be used during construction, but a small number could potentially be used for maintenance and monitoring during operation of the pipeline. The tables in **Attachment N** provide the general location (Milepost where the road intersects the ROW), ownership, and length (miles) of each access road for each route alternative. A summary of the ownership (distance crossed for all access roads per route) is shown below in **Table 4-67**.

**Table 4-67 Summary of Ownership Crossed by Access Road for Construction**

| Ownership Type | Route A | Route A1A | Route B |
|---|---|---|---|
| Federal miles | 14.93 | 14.98 | 23.06 |
| State miles | 6.96 | 7.23 | 2.94 |
| Tribal miles | 17.79 | 0.01 | 0.00 |
| Private miles | 25.72 | 59.25 | 85.50 |
| **Total** | **65.4** | **81.47** | **111.5** |

Routes A, A1A, and B

Access roads that were identified for Route A would cross approximately 15 miles of federal land, 7 miles of state land, 18 miles of tribal land, and 11 miles of private property. A total of 36 access roads have been identified for Route A. ~~Although two roads cross the Bitter Creek ACEC, it was confirmed with the BLM Malta Field Office that it would be possible to utilize certain existing roads in this area with the understanding that there would be certain restrictions attached to the use of the roads by the BLM.~~ Two roads are adjacent to the Bitter Creek ACEC; however according to the BLM Malta Field Office it is possible to utilize existing roads in this area with the understanding that the BLM may restrict certain uses.

Access roads that were identified for Route A1A would cross approximately 14 miles of federal land, 7 miles of state land, 1 mile of Tribal land, and 16 miles of private property. A total of 49 roads have been identified for Route A1A.

Access roads that were identified for Route B would cross approximately 23 miles of federal land, 3 miles of state land, and 86 miles of private property. Alternative B does not cross any Tribal lands. A total of 52 roads have been identified for Route B.

#### 4.3.11.4 Summary of Route-Specific Transportation Impacts

Route-specific impacts for transportation are summarized in **Table 4-68**. Identified impacts will be substantially mitigated as discussed within this application and further outlined in the CMRP for all Routes. Based strictly on the relative lengths of the routes within the State of Montana and not taking into consideration the overall effect through Montana, South Dakota, and Nebraska, Route B has the greatest impacts. However, when the full Steele City Segment impacts are considered, frequently the additional length of Routes A and A1A would result in greater impacts.

**Table 4-68 Summary of Route-Specific Transportation Impacts**

| Resource | Route Alternatives | | |
|---|---|---|---|
| | **Route A** | **Route A1A** | **Route B** |
| **Miles of Pipe** | | | |
| Steele City Segment | 919.7 | 951.3 | 850.7 |
| Portion in Montana | 180.7 | 205.5 | 282.7 |
| **Transportation** | | | |
| Airports | No public airports impacted. | Same as Route A. | Same as Route A. |
| Roadways and Railways | Route A would cross US Highway 2, Montana State Highways 13, 24, and 16, and the BNSF railway. | Route A1A would cross Montana State Highways 13, 16, 24 and the BNSF railway. | Route B would cross Interstate Highway 94, US Highways 2 and 12; Montana State Highways 13, 24, 117, 200, and 247. Montana State Highway 13 is considered a scenic byway by the BLM. The BNSF spur from Glendive, Montana, to Circle, Montana, which is crossed in out-of-service (BNSF 2006). |

**Table 4-68 Summary of Route-Specific Transportation Impacts**

| Resource | Route Alternatives | | |
|---|---|---|---|
| | **Route A** | **Route A1A** | **Route B** |
| **Miles of Pipe** | | | |
| Steele City Segment | 919.7 | 951.3 | 850.7 |
| Portion in Montana | 180.7 | 205.5 | 282.7 |
| Access roads | Route A would cross approximately 15 miles of federal land, 7 miles of state land, 18 miles of tribal land, and 11 miles of private property. A total of 36 roads have been identified for Route A. | Route A1A would cross approximately 14 miles of federal land, 7 miles of state land, 1 mile of Tribal land, and 16 miles of private property. A total of 49 roads have been identified for Route A1A. | Route B would cross approximately 23 miles of federal land, 3 miles of state land, and 86 miles of private property. Route B does not cross any Tribal lands. A total of 52 roads have been identified for Route B. |

References

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_____. 2008c. Federal and State Tentative Construction Projects 2008-2012. Map created January 2008. Website: http://www.mdt.mt.gov/travinfo/docs/ tcp_montana_map.pdf. (Accessed August 26, 2008.)

## 4.3.12 Socioeconomics and Environmental Justice

### 4.3.12.1 Baseline Data and Description of Routes – All Routes

A list of communities that may be affected by the the three routes and their respective Year 2000 population statistics are shown in **Table 4-69**. This list identifies all communities within 0.5 to 2 miles of the routes in Montana (Circular MFSA-2, Section 3.4 (6)).

Population, Employment, and Income (Circular MFSA-2, Section 3.4 (6)(7)(c,e,h))

*Population and Demographics*

Counties affected by both Route A and Route A1A also had declining populations from 1990 to 2000. Phillips County had the most significant decline for Route A, while Sheridan County recorded the most significant decline for Route A1A at ~~-~~negative~~24.2~~-13.3 percent. Sheridan County had the highest ~~medium~~ median age along Route A1A, while the highest median age along Route A was Valley County. Sheridan County also has the highest percentage of the population over 65 years old along Route A1A. Valley County holds that distinction for Route A. Along both Routes A and A1A, Roosevelt County had the lowest median age and the lowest percentage of the population over 65 years old.

Route B traverses predominantly rural and sparsely populated areas, with population densities ranging from 0.7 to 3.8 people per square mile for the majority of the route. Populations in the affected counties have declined from 1990 to 2000. Prairie County recorded the largest decline at 13.3 percent. The least significant decline was Dawson County at 4.7 percent. The City of Glendive lies within the boundaries of Dawson County. With a population of 4,729 in 2000, Glendive is the largest city within a county affected by Route B in Montana. The highest median age in counties affected by Route B was in Prairie County. Likewise, Prairie County also had the highest percentage of the population over 65 years old. Phillips County recorded the lowest median age as well as the lowest percentage of the population over 65 years old.

The State of Montana maintains a positive projected population growth rate through the year 2030; however, most of the counties crossed by the proposed project are likely to experience a continued decrease in population growth. From 2010 to 2020, Valley, Sheridan, McCone, and Fallon Counties are projected to see the largest decline in population. By 2030, it is anticipated that growth rates for most of the counties along Project routes will approach negative 4 percent. The only counties outside of this trend are Roosevelt and Dawson. While Dawson County is not projected to have a positive growth rate, by 2030 it is anticipated to have a growth rate that is nearly zero. By 2020, Roosevelt County is projected to have a positive growth rate which continues through 2030. Due to the short-term nature of the project, there would be no meaningful impact to the projected population trends if the project was not constructed.

**Table 4-69 Affected Communities Along the Alternative Routes**

| State/Community | County | Relative Proximity to Project (miles) | Population (2000)[1] |
|---|---|---|---|
| **Route A** | | | |
| Nashua | Valley | 2 | 325 |
| Bainville | Roosevelt | 2 | 153 |
| **Route A1A** | | | |
| Nashua | Valley | 2 | 325 |
| Reserve | Sheridan | 0.5 | 37 |
| Medicine Lake | Sheridan | 2 | 269 |
| Froid | Roosevelt | 2 | 195 |
| **Route B** | | | |
| Nashua | Valley | 2 | 325 |
| Circle | McCone | 2 | 644 |
| Baker | Fallon | 2 | 1,695 |

[1] USCB 2000b.

**Table 4-70** summarizes ~~the current~~ population ~~as well as population trends~~ and demographics~~, in the counties~~ while Table 4-70a details the expected population trends in the counties crossed by the proposed routes.

**Table 4-70 Population and Demographics of Affected Counties Along the Keystone XL Pipeline Project**

| State/County | Population[1] | | % Change in Population | Population Density (per square mile)[1] | % over 18 Years of Age | % over 65 Years of Age | Median Age | Population Center |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 2000 | 1990-2000 | 2000 | 2000 | 2000 | 2000 | |
| **Route A** | | | | | | | | |
| Phillips | 5,163 | 4,601 | -10.9 | 0.9 | 72.7 | 17.6 | 40.8 | Malta |
| Valley | 8,239 | 7,765 | -5.8 | 1.6 | 74.9 | 19 | 41.7 | Glasgow |
| Roosevelt | 10,999 | 10,620~~10,496~~ | ~~-4.6~~ -3.4 | 4.5 | 65.4 | 11.6 | 32.3 | Wolf Point |
| **Route A-1-A** | | | | | | | | |
| Phillips | 5,163 | 4,601 | -10.9 | 0.9 | 72.7 | 17.6 | 40.8 | Malta |
| Valley | 8,239 | ~~7,765~~7,675 | ~~-5.8~~ -6.8 | 1.6 | 74.9 | 19 | 41.7 | Glasgow |
| Daniels | 2,266 | 2,017 | -11.0 | 1.4 | 77.9 | 23.5 | 47 | Scobey |
| Sheridan | 4,732 | ~~3,447~~4,105 | ~~-27.2~~ -13.3 | 2.4 | 77.1 | 23.6 | 45.1 | Plentywood |
| Roosevelt | 10,999 | ~~10,496~~10,620 | ~~-4.6~~ -3.4 | 4.5 | 65.4 | 11.6 | 32.3 | Wolf Point |

**Table 4-70 Population and Demographics of Affected Counties Along the Keystone XL Pipeline Project**

| State/County | Population[1] | | % Change in Population | Population Density (per square mile)[1] | % over 18 Years of Age | % over 65 Years of Age | Median Age | Population Center |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 2000 | 1990-2000 | 2000 | 2000 | 2000 | 2000 | |
| **Route B** | | | | | | | | |
| Phillips | 5,163 | 4,601 | -10.9 | 0.9 | 72.7 | 17.6 | 40.8 | Malta |
| Valley | 8,239 | ~~7,765~~7,675 | ~~-5.8~~ 6.8 | 1.6 | 74.9 | 19 | 41.7 | Glasgow |
| McCone | 2,276 | 1,977 | -13.1 | 0.7 | 75.2 | 18.9 | 42.4 | Circle |
| Dawson | 9,505 | 9,059 | -4.7 | 3.8 | 76.9 | 17.7 | 41 | Glendive |
| Prairie | 1,383 | 1,199 | -13.3 | 0.7 | 81.3 | 24.1 | 48.9 | Terry |
| Fallon | 3,103 | 2,837 | -8.6 | 1.8 | 74.5 | 17.9 | 41.1 | Baker |

[1]USCB 2000b.

*Employment and Income (Circular MFSA-2, Section 3.4 (7)(c,e)))*

Employment, local industry, and income trends in the counties crossed by the routes are summarized in **Table 4-71**.

All of the affected counties have per capita personal incomes that are lower than the state average. Phillips County has the lowest per capita personal income of the six affected Montana counties along Route B, while Valley County had the highest. Fallon County was the only affected county that had a median household income higher than the Montana state average. McCone County had the lowest median household income.

Major industries, by employment, in the counties along Route B are consistently agriculture, government, and retail trade. Health care and social assistance also is a major industry in Dawson County. Counties with larger population centers, such as Dawson and Valley counties, have the largest labor forces, while the least populated counties, such as McCone and Prairie, have the smallest labor forces, both under 1,000 labor force participants. The unemployment rates for the affected counties were all below the state average of 3.8 percent. Phillips and Prairie counties both had the highest unemployment rates at 3.6 percent as of August 2008.

Major industries in counties affected by Routes A and A1A are agriculture, government, and retail trade, as well as, in Roosevelt County, health care and social assistance. Roosevelt and Valley counties recorded the largest labor forces, while Daniels County, at 771 labor force participants, recorded the smallest. Roosevelt County recorded the lowest per capita personal income for both Route A and Route A1A. Roosevelt County also had the lowest median household income for both counties, as well as the highest unemployment rate, at 3.6 percentage points above the Montana state average.

The amount of skilled and semi-skilled labor in eastern Montana, and their corresponding average median wage is shown in **Table 4-72**. Counties within the eastern Montana region, employ 55 percent more skilled labor than they do semi-skilled labor. Additionally, skilled laborers earn an average median wage that is 71.5 percent greater than the average median wage of semi-skilled laborers.

**Table 4-70a Population Trends of Potentially Affected Counties Along the Keystone XL Pipeline Project in Montana**

| County | Population[1] | | % Change | Population | % Change | Population | % Change | Population | % Change |
|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2007 | 2000-2007 | 2010 | 2000-2010 | 2020 | 2010-2020 | 2030 | 2020-2030 |
| | 902,195 | 957,861 | 6.2 | 985,930 | 9.3 | 1,078,460 | 9.4 | 1,182,440 | 9.6 |
| **Route A** | | | | | | | | | |
| Phillips | 4,601 | 3,948 | -14.2 | 3,830 | -16.8 | 3,490 | -8.9 | 3,350 | -4.0 |
| Valley | 7,675 | 6,899 | -10.1 | 6,590 | -14.1 | 5,910 | -10.3 | 5,650 | -4.4 |
| Roosevelt | 10,620 | 10,148 | -4.4 | 10,110 | -4.8 | 10,130 | 0.2 | 10,410 | 2.8 |
| **Route A-1-A** | | | | | | | | | |
| Phillips | 4,601 | 3,948 | -14.2 | 3,830 | -16.8 | 3,490 | -8.9 | 3,350 | -4.0 |
| Valley | 7,675 | 6,899 | -10.1 | 6,590 | -14.1 | 5,910 | -10.3 | 5,650 | -4.4 |
| Daniels | 2,017 | 1,650 | -18.2 | 1,560 | -22.7 | 1,430 | -8.3 | 1,370 | -4.2 |
| Sheridan | 4,105 | 3,373 | -17.8 | 3,260 | -20.6 | 2,910 | -10.7 | 2,810 | -3.4 |
| Roosevelt | 10,620 | 10,148 | -4.4 | 10,110 | -4.8 | 10,130 | 0.2 | 10,410 | 2.8 |
| **Route B** | | | | | | | | | |
| Phillips | 4,601 | 3,948 | -14.2 | 3,830 | -16.8 | 3,490 | -8.9 | 3,350 | -4.0 |
| Valley | 7,675 | 6,899 | -10.1 | 6,590 | -14.1 | 5,910 | -10.3 | 5,650 | -4.4 |
| McCone | 1,977 | 1,724 | -12.8 | 1,660 | -16.0 | 1,500 | -9.6 | 1,440 | -4.0 |
| Dawson | 9,059 | 8,558 | -5.5 | 8,350 | -7.8 | 7,900 | -5.4 | 7,840 | -0.8 |
| Prairie | 1,199 | 1,044 | -12.9 | 1,010 | -15.8 | 900 | -10.9 | 850 | -5.6 |
| Fallon | 2,837 | 2,696 | -5.0 | 2,610 | -8.0 | 2,370 | -9.2 | 2,320 | -2.1 |

In general, the availability of public services and their associated funding are functions of the size and population of the county and the number of larger communities in the county. There are multiple law enforcement providers, including the respective state patrols, county sheriffs, and local police departments. In many instances, mutual aid/cooperative agreements among agencies allow members of one agency to provide support or backup to other agencies in emergency situations.

A network of fire departments and districts provide fire protection and suppression services across the region. Many of the fire districts across the region are staffed by volunteers and are housed in stations located in the larger communities.

For each county affected there is at least one acute care facility either within the county crossed or in a neighboring county, providing emergency medical care and in several cases also serving as the base for local emergency medical response and transport services.

### 4.3.12.4 Fiscal Benefits (Circular MFSA-2, Section 3.4 (7)(h))

Employing a cost approach, states generally assess the value of pipelines to facilitate consistent valuation over all the counties crossed within the state. The resultant value is assigned to affected counties and taxing jurisdictions and property taxes are assessed accordingly. The effective property tax rates are then calculated using state property tax levies for pipelines, county property tax levies on pipelines, or a combination of the two. **Table 4-76** lists the various property tax mill levy values as well as the effective tax rates for each county. Many of the County Commissioners along the potential Project routes were optimistic regarding the positive fiscal impact that he project would provide. A more detailed discussion regarding correspondence with the County Commissioners is given in Section 5.3.1.

**Table 4-76 Property Mill Levies and Tax Rates for the Project**

| State/County | Property Tax |
|---|---|
| **Route A** | |
| Phillips | $5,652,324 |
| Valley | $11,952,553 |
| Roosevelt | $17,167,302 |
| **Total Route A** | $34,772,179 |
| **Route A1A** | |
| Phillips | $5,723,342 |
| Valley | $10,317,130 |
| Daniels | $11,716,901 |
| Sheridan | $8,938,948 |
| Roosevelt | $5,689,121 |
| **Total Route A1A** | $42,385,442 |
| **Route B** | |
| Phillips | $6,373,781 |
| Valley | $12,788,963 |
| McCone | $15,849,656 |
| Dawson | $11,039,339 |
| Prairie | $5,434,242 |
| Fallon | $9,387,828 |
| **Total Route B** | $60,873,809 |

Source: TransCanada Pipeline.

Taxes levied by various state, county, or local taxing jurisdictions may include taxes on gross receipts from the sales of goods and services and corporate income taxes. Tax receipts would increase based on spending by construction personnel. Keystone estimates that construction payroll for Routes A, A1A, and B, would be approximately $149 million, $124 million, and $205 million, respectively. A percentage of construction payroll would be spent locally on food, lodging, and recreation. Federal agencies also assess fees for use of public lands for activities such as pipeline and transmission line ROWs. These taxes and fees vary by region and have not been identified.

#### 4.3.12.5 Environmental Justice (Circular MFSA-2, Section 3.4 (7)(d))

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 Federal Register 7629) requires that impacts on minority or low-income populations be taken into account when preparing environmental and socioeconomic analyses of projects or programs that are proposed, funded, or licensed by federal agencies. The Environmental Justice Guidance under NEPA prepared by the CEQ Guidance (1997) is commonly used in implementing Order 12898 in preparing NEPA documents. The State of Montana does not have a separate Environmental Justice Policy beyond the NEPA requirements.

The purpose of the Order is to avoid the disproportionate placement of any adverse environmental, economic, social, or health impacts from federal actions and policies on minority populations, low-income populations, and Indian tribes and to allow all portions of the population an opportunity to participate in the development of, compliance with, and enforcement of federal laws, regulations, and policies affecting human health of the environment regardless of race, color, national origin, or income. The provisions of the Order apply to programs involving Native Americans and Hispanic communities. These requirements will be addressed by: 1) ensuring broad distribution of public information on the Project through public scoping meetings; and 2) conducting government-to-government consultation with Native American groups either residing in or with historical ties to the area. Details regarding public scoping meeting dates and locations can be found in Section 5.3.

**Tables 4-77** and **4-78** provide 2000 USCB statistics on race, ethnicity, and income status in affected counties and communities. Affected counties are those counties potentially crossed, affected communities in the proximity of the routes include those communities crossed by the routes (within 0.5 mile) as well as communities located within 2 miles of the routes. The sections below discuss the minority populations and low income populations potentially affected.

Minority Populations

The Council on Environmental Quality (CEQ) Guidance defines the term “minority population” to include people who identify themselves during the census as Black or African American, Asian or Pacific Islander, Native American or Alaskan Native, or Hispanic. Hispanic origin refers to ethnicity and language, not race, and may include people whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American. For the purpose of this evaluation, all people who identified themselves as Hispanic are included as a minority population.

In accordance with the CEQ Guidance, minority populations should be identified where either: 1) the minority population in an affected area (e.g., a county or community) exceeds 50 percent; or 2) the minority population percentage of the affected area is meaningfully greater (1.5 times) than the minority population percentage in the general population of the surrounding area (e.g., the state, county, or other appropriate unit of geographical analysis) as shown in **Figure 4-1**. The surrounding area used for comparison of affected counties/communities were the state populations.

Based upon review of the 2000 USCB data, there are minority populations located in a few counties crossed and several communities in the proximity of the proposed routes. As described below, in some cases, there are minority populations occurring in portions of the counties crossed by the proposed routes that are “meaningfully greater” than their corresponding minority populations in the general population.

*Demands on Local Infrastructure (Circular MFSA-2, Section 3.7(1)(3) and (5))*

Construction of the Project in Montana is proposed to be completed in four spreads (see **Table 4-79**). Keystone anticipates that it will require approximately 6 months to complete each spread. Work on the Project in Montana is proposed to commence in 2011 and to be completed by the end of 2012. Approximately 500 to 600 construction personnel (Keystone employees, contractor employees, construction inspection staff, and environmental inspection staff) are expected to be associated with each spread for a total workforce of approximately 2,000 to 2,900 construction personnel. Additionally, construction of pump stations and delivery facilities will require an additional 20 to 30 workers per station for a total of approximately 1,280 to 1,580 workers at the peak, since all pump stations will not be constructed simultaneously. Construction of pump stations and delivery stations is to commence in 2011 and be completed by the end of 2012.

**Table 4-79 Construction Spreads Associated with the Project**

| Spread Number | Location According to Map | Approximate Distance within Construction Spread (miles) |
|---|---|---|
| Spread 1 | Phillips and Valley counties | 81.18 |
| Spread 2 | McCone and Dawson counties | 82.02 |
| Spread 3 | Dawson, Prairie, and Fallon counties | 83.73 |
| Spread 4 | Fallon County | 35.00 |

Keystone proposes to hire temporary construction staff from the local population where possible. It is estimated that approximately 10 to 15 percent of the total construction workforce could be hired locally, with the remaining portion (85 to 90 percent or more) consisting of non-local personnel. Keystone estimates that long-term operation of the pipeline will require a total of approximately four to eight permanent employees in Montana.

The construction period will be relatively short in any given area and most non-local workers will not be accompanied by their families during their work tenure. Consequently, it is expected that most workers will use temporary housing, such as hotels/motels, recreational vehicle parks, and campgrounds. Some workers are likely to rent furnished apartments and homes, due to the constrained availability of other accommodations, though this is generally less preferable because landlords and property management companies prefer extended term commitments. Most of the temporary workers will seek housing in the more populated, service-oriented towns located within a reasonable commuting distance to the work site. As the more convenient options fill, workers will seek alternatives, driving farther, looking at smaller communities, even using campgrounds in nearby state parks, which typically have limits on the length of occupancy. Furthermore, some individuals may desire to relocate as the active construction area in each spread moves along the pipeline route. The net effect of these factors is that the temporary housing demand will be dynamic.

In the more rural areas it will be more difficult for local housing markets to fill these temporary housing needs due to the more limited availability of temporary housing in close proximity to construction work sites. Construction workers in these areas are likely to drive farther to find housing in nearby small towns or rely more heavily on recreational vehicle parks and campgrounds. Conversely, in the portions of the route through more populated areas, the local housing markets will be much more likely to absorb the temporary housing needs of construction workers as they will be more likely to find hotels/motels in towns and cities in close proximity to construction work sites.

Because of the remote areas in Montana, Keystone considered the potential need to set up construction camps. In-depth discussions were held with several pipeline construction contractors regarding the use of construction camps. Feedback from the pipeline contractors was that their personnel would not stay in the construction camps, and that lodging such as motels and recreational parks would be preferred. Based on this

information, as well as the Housing/Lodging Inventory, it was determined that construction camps will not be established.

Impacts to primary and secondary schools are projected to be minimal. It is projected that very few, if any, construction workers would bring school-aged children to the area.

Other construction-related impacts on local services may include increased demand for permits for vehicle load and width limits and local police assistance during construction at road crossings to facilitate traffic flow (for more information on roads see Section 4.3.11). In more rural sections of the proposed route, response times to highway or construction-related accidents may be lengthy, given communication, dispatch, and travel time considerations. In these areas, it may be necessary to provide on-site first responder services; however, Keystone will work with the local law enforcement, fire departments, and emergency medical services to determine the best course of action and coordinate for effective emergency response. Plans associated with these issues will be addressed in the ERP once the final design has been completed. With at least one medical facility in each potentially affected county, it is anticipated that the supply of health services for both public and Project use will be adequate. The degree of impact will vary from community to community, depending on the number of non-local workers and accompanying family members that temporarily reside in each community, the duration of their stay, and the size of the community. Although these factors are too indeterminate and variable to accurately predict the magnitude of impact, the effects will be short-term and, therefore, are not expected to be significant.

*Short-term Fiscal Benefits*

Taxes that may apply, other than property taxes levied by various state, county, or local taxing jurisdictions, include taxes on gross receipts from the sales of goods and services. It is anticipated that along Route A1A, $10 to $12 million would be spent on local material purchases during construction. This number increases to $12 to $14 million for Route A, and $18 to $22 million for Route B. These local expenditures would contribute directly to the tax base. These taxes and fees vary by region or locality and will be received only during the construction period (approximately 6 months). An income tax benefit will also be realized to the state of Montana. Keystone estimates that approximately 10-15 percent of the total workforce will be local hires. If approximately 12.5 percent of the total workforce in Montana on Route A1A (of a total workforce of 1,470) are local hires, Montana will gain additional income tax revenue from the income of roughly 184 local construction personnel. This number increases for Route A to 223 workers based on 1,780 total construction personnel, and for Route B to 306 workers based on 2,450 total construction personnel.

Operation (Circular MFSA-2, Section 3.7 (5))

*Demands on Local Infrastructure*

The limited number of permanent employees associated with the Project will result in negligible long-term impacts on public services.

*Long-term Fiscal Benefits*

In the operation phase, the pipeline will increase the tax base in the states, counties, and communities crossed. Keystone has estimated a total of $34,772,179 and $42,385,442 in property taxes will be paid to counties along Route A and Route A1a, respectively. Additionally, Keystone has estimated that a total of approximately $60,873,809 million will be paid in property taxes during the first year of pipeline operation for Route B.

Keystone will employ multiple safeguards to prevent a pipeline release. The chance of a spill occurring is very low and if a spill occurred, the volume is likely to be relatively small. In the unlikely event of a pipeline release, Keystone would initiate its ERP and emergency response teams would contain and clean up the spill. To minimize impacts to the public, appropriate remedial measures will be implemented to meet federal and state standards designed to ensure protection of human health and environmental quality. Additional information on

potential impacts to public health and safety resulting from a crude oil spill is provided in the Risk Assessment (**Attachment D**).

Environmental Justice

Risk analyses need to be conducted for all locations identified as having significant minority populations and low income populations.

**Table 4-87 Comparison of the Most Important Impacts for the Alternative Facility Locations in Montana (Circular MFSA-2, Section 3.9(1)(a) and (b))**

| Route Alternatives | | | | Degree to Which Most Important Adverse Impacts can be Mitigated |
|---|---|---|---|---|
| **Resource** | **Route A** | **Route A1A** | **Route B** | |
| **Land Use** | | | | |
| Tribal lands | Route A crosses 89.6 miles of tribal lands.<br><br>Because of the extensive statutory procedural requirements associated with the granting of ROW on tribal lands, selection of Route A would affect the project schedule. | Route A1A crosses 1.0 mile of tribal lands.<br><br>Because of the extensive statutory procedural requirements associated with the granting of ROW on tribal lands, selection of Route A would jeopardize the project schedule. | Route B does not cross tribal lands. | Please see Attachment P for further discussion on potential impacts that do not require mitigation. |
| Developed land | Route A crosses approximately 2.74 miles, primarily associated with existing ROW and minor components of industrial and residential use types. | Route A1A crosses approximately 2.86 miles, primarily associated with existing ROW and minor components of commercial, industrial, and residential use types. | Route B crosses approximately 3.29 miles, primarily associated with existing ROW and minor components of commercial, industrial, residential, and special use types. | The measures in the CMRP will mitigate the impacts identified. |
| Recreation and special interest areas | Recreation and special use areas crossed by Route A include the Bitter Creek ACEC, BLM WSA, and Fort Peck Indian Reservation. It is likely the BLM would heavily condition routing through an ACEC and WSA. Selection of Route A would affect the Project cost and schedule. | Recreation and special use areas crossed by Route A1A include the Bitter Creek ACEC, BLM WSA, and Medicine Lake NWR. It is likely the BLM would heavily condition routing through an ACEC and WSA. The USFWS has a policy that precludes new ROWs through NWRs. Selection of Route A1A would affect the Project cost and schedule. | Recreation and special use areas crossed by Route B include the Phillips County USFWS Wetland Easement and Lewis and Clark National Historic Trail. | For Route B, both crossings of the Lewis and Clark Trail can be mitigated through the use of HDD methods.<br>The NWR ditch would be crossed by HDD, therefore no surface impacts within the USFWS managed lands would occur.<br><br>Please see Attachment P for further discussion on potential impacts that do not require mitigation. |

**Table 4-87 Comparison of the Most Important Impacts for the Alternative Facility Locations in Montana (Circular MFSA-2, Section 3.9(1)(a) and (b))**

| Route Alternatives | | | | Degree to Which Most Important Adverse Impacts can be Mitigated |
|---|---|---|---|---|
| **Resource** | **Route A** | **Route A1A** | **Route B** | |
| **Wildlife and Fisheries** | | | | |
| Greater sage grouse and sharp-tailed grouse | Route A crosses 8 known greater sage-grouse leks and/or their associated buffer zones. | Route A1A crosses 8 known greater sage-grouse leks and/or their associated buffer zones. | Route B crosses 24 known greater sage-grouse leks and/or their associated buffer zones. | Impacts can be mitigated through negotiated construction windows and buffer zones, as well as adherence to the CMRP to restore habitat. |
| Aquatic resources | Route A does not cross any Class I or II fisheries. | Route A1A does not cross any Class I or II fisheries. | Route B crosses one Class I fishery at the Yellowstone River and one Class II fishery at the Missouri River. | Both of these rivers will be directionally drilled. There will be no impact to these resources. |
| **Special Status Species** | | | | |
| Special status species | A total of 59 special status wildlife species could potentially occur within suitable habitat along Route A. Of the 59, three (black-footed ferret, whooping crane, and the piping plover) are federally listed under the ESA; 37 are identified as BLM species of concern; and 22 are Montana species of concern.<br>Surveys would ultimately determine species presence and development of mitigation to avoid impacts. | A total of 47 special status wildlife species could potentially occur within suitable habitat along Route A1A. Of the 47, three (black-footed ferret, whooping crane, and the piping plover) are federally listed under the ESA; 12 are identified as BLM species of concern; and 22 are Montana species of concern.<br>Surveys would ultimately determine species presence and development of mitigation to avoid impacts. | A total of 65 special status wildlife species could potentially occur within suitable habitat along Route B. Of the 65, five (black-footed ferret, whooping crane, interior least tern, piping plover, and the pallid sturgeon) are federally listed under the ESA; 51 are identified as BLM species of concern; and 14 are Montana species of concern.<br>Surveys would ultimately determine species presence and development of mitigation to avoid impacts. | Impacts can be mitigated through negotiated construction windows and buffer zones, as well as adherence to the CMRP to restore habitat. |