Final Environmental Assessment
Cheyenne-Miracle Mile
and
Ault-Cheyenne Transmission Line Rebuild Project

DOE/EA -1456

U.S. Department of Energy
Western Area Power Administration
Rocky Mountain Region
Loveland, Colorado

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List of Acronyms

ACSR	Aluminum conductor steel reinforced
AM	amplitude modulated
APCD	Air Pollution Control Division
AQD	Air Quality Division
ARH-AU	Archer-Ault
AU-CH	Ault-Cheyenne
BLM	Bureau of Land Management
BMP	Best Management Practice
BOR	Bureau of Reclamation
CAA	Clean Air Act
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and Environment
CFR	Code of Federal Regulations
CHNP	Colorado Natural Heritage Program
CH-MM	Cheyenne-Miracle Mile
CO	Carbon Monoxide
CWA	Clean Water Act
DAU	Data Analysis Unit
dBA	Decibels
dBuV/m	decibels above one microvolt per meter
DOE	Department of Energy
EA	Environmental Assessment
EMF	Electric and Magnetic Field
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Area
FM	frequency modulated
FWS	Fish and Wildlife Service
GLO	General Land Office
HJ-MM	Happy Jack-Miracle Mile
Hz	Hertz
kcmil	thousand circular mils (conductor size designation)
KOP	Key Observation Point
kV	Kilovolt
kV/m	kilovolts per meter
mA	Maximum induced current
mG	milligauss
MM	Modified Mercalli Intensity
MP	Milepost
MVA	megavoltampere (line capacity)
MVAR	Megavoltampere reactive (line capacity)
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act

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NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OAHP	Office of Archaeology and Historic Preservation
PM	Particulate Matter
PMZ	Primary Management Zone
ppb	parts per billion
PSD	Prevention of Significant Deterioration
RMP	Resource Management Plan
ROW	Right-of-Way
SCS	Soil Conservation Service
SDWA	Safe Drinking Water Act
SIPS	State Implementation Plans
SPCC	Spill, Control, Containment, and Countermeasures Plan
TEP&C	Threatened, Endangered, Proposed, and Candidate
TOT3	Transmission path between southeastern Wyoming and northeastern Colorado
TVI	television interference
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
V	Volt
V/m	volts per meter
VRM	Visual Resources Management
WDEQ	Wyoming Department of Environment Quality
WGFD	Wyoming Game and Fish
WNDD	Wyoming Natural Diversity Database
WSA	Wilderness Study Area
WUS	Waters of the US
WYCRO	Wyoming Cultural Records Office

Summary

Proposed Project

Western Area Power Administration (Western) is proposing to upgrade the existing Cheyenne-Miracle Mile (CH-MM) and Ault-Cheyenne (AU-CH) 115 kilovolt (115-kV) transmission lines to 230-kV. The proposed project consists of rebuilding these transmission lines and making modifications to Western's existing Miracle Mile, Cheyenne and Ault Substations to accommodate the 230-kV circuits. A new Snowy Range Substation would also be build near Laramie, Wyoming.

The existing CH-MM 115-kV transmission line is 146 miles in length, and crosses Carbon, Albany, and Laramie Counties in Wyoming. The Cheyenne-Ault 115-kV transmission line is 35 miles in length and crosses portions of Laramie County, Wyoming and Weld County, Colorado. Western proposes to upgrade the existing transmission lines by removing the existing 115-kV H-frame structures and replacing them with new 230-kV H-frame structures and single pole steel structures. Western also proposes to widen the existing right-of-way (ROW), where necessary to allow adequate electrical clearances. The proposed project entails the following specific actions:

- <u>Cheyenne-Miracle Mile Transmission Line Rebuild (146 miles).</u>
  - No structural changes would be made to the existing transmission line for the first 6.6 miles south of the Miracle Mile Substation. This portion of the CH-MM line was reconstructed with lattice steel 230-kV structures in 1992. The existing 954 ACSR conductor, currently operated at 115-kV voltage is sufficient for future 230-kV operation.
  - Approximately 140 miles of the existing CH-MM 115-kV transmission line, including transmission structures, conductors and hardware would be dismantled and removed. The existing line would be dismantled from approximately 6.6 miles south of the Miracle Mile Substation to the Cheyenne Substation in Wyoming.
  - Approximately 1017 new 230-kV wood H-frame structures would be installed along 134.8 miles of Western's ROW, from approximately 6.6 miles south of Miracle Mile Substation to the vicinity of the Happy Jack Substation, approximately 5.0 miles from the Cheyenne Substation.
  - Approximately 26 double circuit 115-kV/230-kV single pole steel structures would be installed for 5.0 miles through the City of Cheyenne, from the vicinity of the Happy Jack Substation to the Cheyenne Substation. Along this stretch of the proposed project, Western would remove both the existing CH-MM and HJ-MM H-frame structures. The new double circuit single pole steel structure would support both the proposed CH-MM 230-kV circuit and the existing HJ-MM 115-kV circuit. No widening of the existing ROW would be required along this stretch of the project.

- Western would widen the existing CH-MM ROW for approximately 134.8 miles, from 6.6 miles south of the Miracle Mile Substation to the Happy Jack Substation, 5.0 miles west of the Cheyenne Substation. The ROW would be expanded to accommodate electrical clearances for the proposed 230-kV transmission line. ROW expansion requirements would vary, depending on the width of the existing ROW and whether the existing ROW overlaps with the HJ-MM transmission line ROW.

- No major new access roads would be constructed. Existing access roads would be used and improved where required to control erosion. Some spur roads within the ROW would be constructed where necessary to access new structure sites.

- <u>Ault-Cheyenne Transmission Line Rebuild (35 miles)</u>

  - The existing AU-CH 115-kV transmission line, including wood H-frame transmission structures, conductors and hardware would be dismantled and removed for approximately 32 miles, from the Cheyenne Substation to approximately 3 miles north of the Ault Substation.

  - Approximately 166 double circuit 115-kV/230-kV single pole steel structures would be installed along 32 miles of the AU-CH transmission line ROW. The new double circuit single pole steel structures would support both the proposed AU-CH 230-kV circuit and the existing115-kV circuit.

  - From approximately three miles north of the Ault Substation (MP 32.1 to MP 35), Western would locate the proposed 230-kV AU-CH transmission line on Western's existing Archer-Ault lattice structures. Along this segment, approximately 24 new wood H-frame structures would be constructed, east of the existing ROW, in order to relocate an existing 115-kV circuit currently occupying one position on the lattice structures.

  - Western would widen the existing AU-CH ROW for approximately 30 miles, from 5.2 miles south of the Cheyenne Substation to the Ault Substation. The ROW would be expanded to accommodate electrical clearances for the proposed 230-kV transmission line. ROW expansion requirements would vary, depending on the width of the existing ROW and transmission facilities proposed. No expansion of the ROW is proposed for 5.2 miles south of the Cheyenne Substation

  - No major new access roads would be constructed. Existing access roads would be used and may be improved if necessary to control erosion. Spur roads would be constructed within the ROW where necessary to access new structure sites.

- <u>Proposed Snowy Range Substation and Modifications to the Miracle Mile, Cheyenne and Ault Substations</u>

  Western is proposing to construct a new 'Snowy Range Substation' near Laramie, Wyoming, to sectionalize the Cheyenne-Miracle Mile and Cheyenne-Happy Jack-Miracle Mile 115-kV transmission lines and to make several upgrades to the existing Miracle Mile, Cheyenne and Ault substations:

- The proposed Snowy Range Substation would be a 115/230-kV sectionalizing substation, approximately 16 acres in size. Western is acquiring approximately 32 acres for the new substation site and transmission line approaches into the substation. The substation equipment would consist of a three breaker 230-kV ring bus, one 200 MVA, 115/230-kV transformer and a six-bay 115-kV main and transfer bus. Construction of the_115-kV facilities would occur in 2007 followed by construction of 230-kV facilities in 2009.

- Western would modify the existing Miracle Mile, Cheyenne, and Ault Substations. All substation changes would be within the existing fenced substation facilities. The Miracle Mile Substation additions would include two 230-kV line bays and one 200 MVA, 115/230-kV transformer. The Cheyenne Substation additions would consist of a three-breaker 230-kV ring bus and one 200 MVA, 115/230-kV transformer. The Ault Substation would be modified to add one 230-kV line bay.

Purpose and Need

The purpose of the CH-MM and AU-CH Transmission Line Rebuild Project is to ensure Western's ability to provide reliable and cost efficient electric power and to provide additional transfer capacity to Western's highly loaded TOT3 operations boundary. The TOT3 boundary consists of six line sections along the border between Northeast Colorado and Southeast Wyoming: Sidney-Sterling 115-kV, Cheyenne-Rockport 115-kV, Archer-Ault 230-kV, Sidney-North Yuma 230-kV, Laramie River-Ault 345-kV and Laramie River-Story 345-kV transmission lines. The Cheyenne-Rockport 115-kV line section is part of the AU-CH 115-kV Line.

At the present time, all available capacity in the CH-MM line is being used in long-term firm transmission or on a short-term basis. Forty megawatts is reserved for wind generation use, and prospective wind generation customers have made several inquires for additional line capacity.

Except for six miles of double circuit lattice steel 230-kV construction from Miracle Mile that was constructed in 1992, the CH-MM 115-kV transmission line was constructed in 1939 with predominantly cedar wood H-frame structures and 250 kcmil hollow copper conductor. The line currently has a thermal rating of 109 MVA. The AU-CH 115-kV line was also built in 1938-1939. Many of the wood H-frame structures used in the original construction of the transmission lines are still in use today, and are approaching, or have exceeded the end of their useful service life. As a consequence, the existing transmission lines are beginning to require increased amounts of maintenance to ensure worker safety and line reliability.

Alternatives Considered and Eliminated

Western conducted a number of system planning studies from January 2003 through March 2004 to consider various replacement options for these lines. The system studies considered replacements at both 115-kV and 230-kV voltages, using a variety of structure designs. The 230-kV voltage was chosen since a 75 MW benefit to TOT3 would occur if both the CH-MM and AU-CH lines are upgraded to 230-kV.

Alternatives considered and eliminated for the CH-MM rebuild included reconductoring the existing 115-kV line, constructing a new 115-kV line on wood H-frame or light duty steel H-frame structures, and constructing a new 115/230-kV line on lattice steel or single pole structures.

An alternative to the AU-CH rebuild that was considered was constructing a new 115-kV line on wood H-frame or light duty steel structures. All of these system design and voltage alternatives were eliminated since they do not meet Western's purpose and need, with the exception of the single pole steel or the lattice steel alternative. None of these alternatives would provide the benefit of increasing the TOT3 transfer capability by an additional 75 MW. Single pole steel and lattice steel structures were eliminated based on costs.

Scope of Environmental Assessment

This Environmental Assessment (EA) has been prepared in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA) and Department of Energy (DOE) guidance. This EA identifies and analyzes the consequences of the proposed project and the no action alternative on the human and natural environment. The proposed project incorporates Western's standard construction practices and mitigation measures to avoid and minimize impacts to the extent feasible. In addition, Western has developed a number of project-specific measures to address impact issues for the project. The EA analyzes the proposed project and the implementation of these measures. In addition, two transmission line routing alternatives are evaluated. Alternatives were identified to minimize impacts to land uses, visual resources, wetlands and soils. These alternatives include:

- <u>CH-MM Alternative Route 1</u>
  - CH-MM Alternative Route 1 is approximately 16.2 miles long, located north and west of Laramie, Wyoming, and is divided into two parts, A and B. The alternative would diverge from the proposed project as follows:
  - MP 40 to MP 91 – This segment includes the swap of the CH-MM and HJ-MM line sections near the Medicine Bow Tap (MP 47), to continue connection of the Medicine Bow Tap to the remaining HJ-MM 115-kV line. The existing HJ-MM line section is rerouted onto the original CH-MM ROW and the new CH-MM 230-kV line is rerouted onto the HJ-MM ROW.
  - MP 91 to MP 100 – This segment includes CH-MM Alternative Route 1, Part A and B. Part A is identified as the 230-kV wood H-frame structure rebuild north of Laramie from MP 91 to MP 100 on existing HJ-MM ROW. The remainder of CH-MM Alternative Route 1, Part B is the swap of the CH-MM and HJ-MM lines near MP 91 to construct the new 230-kV line on the HJ-MM ROW and to rebuild a portion of the HJ-MM line on the original CH-MM line section from MP 91 to the Laramie Substation. This portion of the line construction on the original CH-MM line section would consist of 115-kV single circuit wood H-frame, except from approximately MP 97 to MP 99 where single pole steel structure construction would occur.

CH-MM Alternative Route 1 allows Western to use the existing ROW of the HJ-MM 115-kV line section under Part A for the CH-MM transmission line rebuild, rather than incur the cost of new ROW in parallel with the existing line. The ROW would be widened. Rebuilding Part B from Snowy Range Substation to the west line split, allows Western to remove the existing line and to rebuild the new portion of the 115-kV HJ-MM transmission line, again using an existing ROW. The ROW would be widened. Pursuing CH-MM Alternative Route 1 allows Western to minimize transmission line outages during the construction of the line swaps at Medicine Bow Tap and at the West Split. Further, once the swaps have occurred, Western has the ability to deenergize nearly 100 miles of line from the Miracle Mile Substation to the Snowy Range substation to systematically remove and rebuild the transmission line on the existing ROW. No significant impact would result from CH-MM Alternative Route 1.

- <u>AU-CH Alternative Route 2</u>

  – AU-CH Alternative Route 2 consists of localized realignments of the proposed project between MPs 17 and 32.5, where Western's AU-CH and ARH-AU transmission lines are intermittently located east and west of rural homes and buildings, respectively. Under this alternative, the AU-CH line would be located adjacent and parallel to the existing ARH-AU transmission line.

Summary of Findings

The EA evaluates the short-term and long-term impacts that may result from the construction and operation of the proposed project and alternatives. The results of the resource evaluations are compared on Table S-1 (at the end of this section), and include the following findings:

<u>Air Quality</u> – The proposed project and alternatives would have very minor, local, short-term effects on air quality, limited primarily to short-term emissions from construction vehicles and fugitive dust generated by construction activity. The project would have no effect on climate. The project and alternatives would be in compliance with National Ambient Air Quality Standards and the State Implementation plans for both Wyoming and Colorado. There are no federal or state permitting requirements for this source type.

<u>Geology, Soils and Paleontology</u> – There are no known geologic hazards (i.e. areas prone to liquefaction, active wind blown sand or landslides) within the project area, although numerous steep slopes are present in the northern part of the CH-MM ROW. The project area also crosses several fossil-bearing formations along the CH-MM route including the Cloverly (Jurassic), Sundance (Jurassic) and Morrison (Jurassic) Hanna (Paleocene). The proposed project and alternatives would result in surficial soil disturbances at localized areas within Western's ROW. Short-term impacts on soils would result where project construction activities cause the loss of vegetation cover. Along the proposed project transmission line ROWs, these areas would be limited to structure sites, and where Western's existing access road is improved with minor re-grading and where spur roads are build. No blasting would be required for structure hole excavations, which would typically be 6 to 10 feet deep. Soils disturbances would also occur at the new Snowy Range Substation site. Impacts to soils would be less than significant for the proposed project and alternatives due to the relatively minor amounts of surficial disturbances that would occur. In total, the proposed project or alternatives would result in the short-term disturbances of approximately 501 or 525 acres, respectively, for the transmission line rebuilds and 32 acres at the new Snowy Range Substation site. Long-term soil disturbance would be 0.9 acres for CH-MM, 0.1 acres for AU-CH, and 16 acres for the Snowy Range Substation. Western would implement a number of standard measures to control erosion and facilitate the re-growth of native vegetation in disturbed areas.

<u>Water Resources</u> – The project area is within the North Platte and South Platte River watersheds. The proposed project crosses 232 surface waters, with the largest surface waters being the Medicine Bow and Laramie Rivers in Wyoming. Water quality within the project area ranges from good to poor, and surface water use is primarily for agriculture, livestock and wildlife ponds. The proposed project and alternatives would have minor, and less than significant impacts on surface waters and water quality since all surface waters would be spanned, and no surface water use is proposed. Western would also implement standard construction measures to ensure that the potential for accidental discharges or contamination are minimized during the construction of the project and during routine maintenance activities. Standard construction measures, including erosion control measures, would also be implemented to reduce the potential for sedimentation and water quality impacts.

The impacts of the alternatives would be similar to the proposed project. CH-MM Alternative Route 1, Part A would cross seven surface water bodies. CH-MM Alternative Route 1, Part B would also cross 7 surface water bodies. No surface waters are crossed by AU-CH Alternative Route 2.

Floodplains and Wetlands – The proposed project would cross or intersect floodplains at 16 locations on the CH-MM transmission line ROW and at two locations on the AU-CH transmission line ROW. The largest floodplains are at the Little Laramie River/Brown's Creek confluence northwest of Laramie and at the Rock Creek/Three Mile Creek/Coal Bank Creek confluence southwest of Rock River. The proposed project would also intersect or cross an estimated 54 potential wetlands. No floodplains or wetlands occur at or adjacent to the Snowy Range Substation, with the closest water way being approximately 0.5 mile away. The impacts of the proposed project would be low, and less than significant where floodplains and wetlands would be spanned. The floodplains and wetlands crossed at the Rock Creek/Three Mile Creek/Coal Bank Creek and the Little Laramie River cannot be spanned, however, because of the width, thus some direct disturbance in these wetlands and floodplains would occur. Disturbances would be limited to the installation of up to two structures (approx. 0.3 acre during construction). Long-term disturbance would be limited to the footprint of up to two structures (less than 0.001 acre). Western would obtain necessary permits from the U.S. Army Corps of Engineers and would implement a number of standard construction practices and mitigation measures to minimize erosion and sedimentation. Western would also implement a Spill Response Plan to control and clean up any accidental spills.

The alternatives would have similar potential impacts to wetlands and floodplains. CH-MM Alternative Route 1, Part A would cross one floodplain at the Laramie River, where two structures would also be required in the floodplain due to its width at this location. For Part B of CH-MM Alternative Route 1 (the rebuild of the HJ-MM 115-kV transmission line on the existing CH-MM 115-kV transmission line ROW), the floodplain at the Laramie River would also be crossed. AU-CH Alternative Route 2 does not cross any floodplains or wetlands and thus would not impact these resources.

Vegetation – The proposed project and alternatives would result in the short-term disturbance of 501 or 525 acres, respectively, of predominantly native vegetation along the transmission line ROWs. An additional 32 acres would be disturbed temporarily at the new Snowy Range Substation. Predominant vegetation types affected include mixed grass prairie, short grass prairie, Wyoming big sagebrush steppe and dry land and irrigated cropland. The vast majority of area affected during construction would be reclaimed following construction. Approximately 1.0 acre would be disturbed long-term within the ROWs for the proposed project or alternatives, and an additional 16 acres would be disturbed long-term at the new substation. Impacts to vegetation would not be significant due to the relatively small amount of area disturbed long-term and the short-term nature of construction disturbances. Western would also use standard construction practices to minimize the introduction and/or spread of invasive species or weeds.

Wildlife – The project area supports habitat for a number of wildlife species, including big game (pronghorn, elk), smaller mammals, raptors, upland game birds (greater sage-grouse, Columbian sharp-tailed grouse), other birds (passerines, waterfowl, shorebirds, waders) and fisheries. The proposed project would have the potential to impact critical winter range of pronghorn or elk, as well as result in the direct mortality of small, less mobile mammals within the corridor, or disturb active raptor nests. The potential for these types of impacts occurring would be minimized below a level of significance with Western's standard construction practices and mitigation measures. Construction would not occur between November 15th and April 30th, unless an exception is granted by BLM, and Western would conduct raptor nest inventories prior to construction to implement appropriate mitigation to prevent the project from disrupting active nests. Western would also implement standard construction and design mitigation practices to eliminate the potential for raptor electrocution. Risks of collision would be similar to the existing conditions, since the existing transmission facilities have been a part of the landscape since the 1930's. The impacts of the alternatives would be the same or similar to those of the proposed project.

Special Status and Sensitive Species – The following federally threatened, endangered, proposed and candidate species (TEP&C) and their critical habitats are known to occur within the proposed project area: Preble's meadow jumping mouse (threatened, recently recommended for de-listing), bald eagle (threatened), Colorado butterflyplant (threatened), and Ute ladies tresses (threatened). Western would minimize the potential to impact these species through pre-construction surveys and a variety of avoidance measures. Avoidance and mitigation measures for TEP&C species are incorporated in Western's standard construction and mitigation measures. The downstream Platte River species could be affected if water is used for dust control during construction of the Snowy Range Substation, but mitigation would not be required because the U.S. Forest Service and the USFWS have provided funds to the Fish and Wildlife Foundation account for the purposes of offsetting the adverse effect of Federal agency actions resulting in minor water depletions, such as the CH-MM and AU-CH project. The impacts of the alternatives would be the same as the proposed project.

Cultural Resources – Class I and Class III cultural resource surveys have been conducted for the proposed project and alternatives. Significant cultural resources are defined as those listed on, or eligible for listing on, the National Register of Historic Places (NRHP). Fifteen eligible or recommended as eligible sites were recorded on the CH-MM transmission line ROW and 5 eligible or recommended as eligible sites were recorded on the AU-CH transmission line ROW. Western's Standard Construction and Mitigation Practices would be implemented to minimize the impacts on cultural resources, which include avoiding direct impacts to sites where feasible through careful pole placements, removing existing structures by cutting structures at ground surface, and avoidance of sites during construction. If avoidance of all eligible sites is not feasible, a mitigation plan would be implemented prior to construction. Impacts from the alternatives would be the same or similar to those of the proposed project. Three significant sites lie along CH-MM Alternative Route 1, Part A, however, the segments of these eligible resources within the project area are considered non-contributing portions.

Land Use, Socioeconomics, Community Resources, and Transportation – The land use of the project area is predominantly open space land area, with Western's existing transmission lines and ROWs being established land uses since the 1930's. Large ranches, rangeland, dryland farming and irrigated fields are the predominant uses within and adjacent to the project ROWs. Developed park and recreation areas are limited in the project area to the vicinity of the Miracle-Mile Substation, where recreation use occurs at the Seminoe State Park and Reservoir. The Bennett Mountains Wilderness Study Area (WSA) is also located immediately adjacent to the ROW near Seminoe State Park and Reservoir. Developed community areas are also adjacent to the CH-MM ROW where the transmission line crosses through portions of Laramie, Wyoming and Cheyenne, Wyoming, and where the AU-CH ROW similarly crosses through parts of

Cheyenne, Wyoming and developing residential communities in Southern Wyoming. Two interstate highways (I-80 and I-25) and six US and State highways serve the area, including US 287/30 andUS85).

The proposed project and alternatives would result in minor, short-term impacts to quality of recreational experiences at the state park, reservoir and WSA due to the intermittent and temporary presence of construction crews, equipment, and related noise, dust, and visual effects. Long-term, land use impacts would be very minor, since the proposed project and alternatives replace existing transmission lines along the same ROW. Overall, the proposed project would likely result in fewer structures being located on private properties and public lands due to the greater span length of the 230-kV structures. Due to the open space character of much of the project area, increased land use restrictions, potentially resulting from the wider ROW are unlikely to affect existing or planned land uses.

Through the developed community area of Cheyenne, Western is not proposing to widen the ROW. Consequently, land use impacts and ROW restrictions would not change over the existing conditions. However in the Laramie area, the ROW would increase from 50 to 105 feet wherever there is 230-kV H-Frame construction, for the proposed project and/or Alternative Route 1, Part A. This would extend from MP 91 to MP 100 for the proposed project and from the west split to Snowy Range Substation at MP 9, along the stretch of the existing HJ-MM ROW for Alternative Route 1, Part A. For Alternative Route 1, Part B, the ROW for the 115-kV construction (wood H-frame and single pole steel) would also increase from 50 feet to 70 feet in Laramie. This would occur from MP 91 to MP 100 at the Snowy Range Substation.These increases in ROW width in the more developed area around Laramie would not change existing land uses or interfere with current land use activities.

The proposed project would also result in less frequent maintenance activities being necessary during the life of the project. Consequently, the proposed project and/or alternatives would have long-term beneficial effects to land uses that may be sensitive to noise or dust impacts from periodic maintenance activities.

The CH-MM Alternative Route 1, Parts A and B would not change the existing land uses. Part B would have a slightly beneficial impact on land uses between MP 97 and MP 99 where the HJ-MM 115-kV transmission line would be rerouted along the existing CH-MM ROW. Within this area, the wood H-frame structures would be replaced by single circuit single pole steel structures. The increased span of the single pole steel structures would reduce the number of structures located within this agricultural and industrial area, which could positively impact land uses. Replacement of the wood H-frames in this area would also reduce the potential impact on wetlands, since the single pole steel structures would likely require less maintenance.

The AU-CH Alternative Route 2 would result in reduced long-term impact to land uses compared to the proposed project. The AU-CH Alternative Route 2 would reduce on-going land use impacts to several landowners and irrigated agricultural fields, by co-locating Western’s existing ROWs adjacent to one another. Land use impacts of the proposed Snowy Range Substation site is similar and minor, since the site is an open space with no known proposed uses.

The proposed project and alternatives would have no long-term adverse impacts to socioeconomic conditions, community resources, or transportation systems. Short-term impacts would be beneficial economic activity in the project area.

Visual Resources – Visual resources in the project area include the Seminoe State Park and Reservoir, Bennett Mountain Wilderness Study Area in Wyoming; major travel routes in Wyoming and Colorado, including I-25, I-80, US 287/30, US 85, a number of Wyoming and Colorado State routes and residential areas and communities of Wyoming including portions of the incorporated communities of Laramie and Cheyenne, and unincorporated residential areas and recently developing subdivisions in southern Wyoming.

Visual impacts would occur during the short-term construction phase of the project, due to the presence of construction equipment, crews, and related dust. Long-term visual changes would result from the presence of the new transmission structures, hardware and conductors. Along the majority of the proposed project, Western would replace existing 115-kV wood H-frame structures, hardware and conductors with slightly taller and heavier structures and hardware that would be very similar in line, form, color and texture to the 115-kV facilities that would be removed. Consequently, the perceived visual changes would be very weak. Visual changes would also be minor and only slightly adverse along the vast majority of the project area, since there are few viewers along much of the project area..

The visual changes brought about by the proposed project would be more noticeable where Western is proposing to install the 115-kV/230-kV single pole steel structures through urbanizing areas of southern Wyoming. West of the Cheyenne Substation, the visual impacts of the project would range from slightly adverse to beneficial depending on viewer perception. In this area, Western would replace both the CH-MM and HJ-MM 115-kV H-frame structures with one set of single pole steel structures. Overall, beneficial visual impacts would result since there would be fewer structures and the single pole steel design is visually more compatible with urban design features. The proposed project would be more visually noticeable, however, since it would be approximately twice as tall as the 115-kV H-frame structures that would be replaced. South of the Cheyenne Substation, Western would also install the taller single pole steel structures through developing residential areas of southern Wyoming. Overall, the visual impacts to area residents, resulting from the increased height of these structures would be adverse, but less than significant. While the structure heights would be noticeably taller than the 115-kV wood H-frame structures, the spacing of the 230-kV structures would be greater, thus resulting in a reduction in the total number of structures seen.

The types of visual changes associated with CH-MM Alternative Route 1 would be similar in degree to the proposed project. The CH-MM Alternative Route 1, Part A, would result in slightly adverse long-term visual impacts, since the new 230-kV wood H-frame structures would be approximately 70 feet tall compared to the existing HJ-MM 115-kV structures, which have average heights of 52 feet. Overall, Part A of CH-MM Alternative Route 1 would result in weak visual contrasts in structure design and height compared to the existing setting.

CH-MM Alternative Route 1, Part B would cause long-term visual changes to the existing visual environment between MPs 97 and 99. From MP 91 to 97, the new 115-kV structures would be the same in design, height and material as the existing 115-kV structures which would be removed. The new structures would be wood H-frame in design and have typical heights of 52 feet. Consequently, no long-term visual effects would occur along this segment of the alternative. From MP 97 to 99, new single pole steel 115-kV structures would replace the existing H-frame wood structures. The proposed single pole steel structures would be approximately 82 feet tall, compared to the existing H-frames that have a typical height of 52 feet. This change in height would occur in industrial and agricultural areas west of Laramie primarily. Visual impacts from the increased height of the single pole steel structures would be mitigated or offset by both the single pole design and the reduction in the total number of structures. Consequently, on balance, this alternative would result in similar or less visual effects than currently occur from the existing 115-kV structures and lines.

The AU-CH Alternative Route 2 would result in similar minor and less than significant visual impacts as described for the proposed project and would improve the visual conditions for the residences affected by the alternative reroutes.

Table S-1. Summary Comparison of Impacts - Proposed CH-MM and AU-CH Transmission Rebuild Projects and Alternatives

Issues	**CH-MM Transmission Line Rebuild**			**AU-CH Transmission Line Rebuild**		**No Action**
	Proposed Rebuild Project	**CH-MM Alternative Route 1**	**Proposed Snowy Range Substation**	**Proposed Rebuild Project**	**AU-CH Alternative Route 2**	
Climate and Air Quality	Slightly adverse effects. Short-term increases in particulates and vehicle emissions. Long–term beneficial reduction in emissions.	Same	Slightly adverse. Short-term increases in particulates and vehicle emissions.	Same as CH-MM	Same	Not significant. Long-term increase in vehicle emissions due to more frequent maintenance activities
Geology, Soils and Paleontology	Slightly adverse to beneficial effects. Short-term soil disturbance. Short-term and long-term inadvertent loss of fossil deposits. Potential beneficial discovery of new fossils. Long-term beneficial reduction in soil disturbance from decreased maintenance activity.	Same	Slightly adverse. Short-term soil disturbance No identifiable paleontological impact.	Same as CH-MM	Same	Not significant. Increase in soil erosion from more frequent maintenance activities.
Water Resources	Slightly Adverse. Indirect potential short-term impacts to 195 surface water bodies from construction related activities including increased sedimentation and potential for spills. Long-term beneficial reduction in soil disturbance from decreased maintenance activity.	Same. Slightly adverse. An additional 7 surface water bodies would be crossed with Alternative Route 1, Parts A and B. Greater potential for surface water run-off. However, impacts are not considered significant with implementation of mitigation measures.	Slightly adverse. Potential for short-term increases in sedimentation and potential for spills.	Slightly Adverse. Indirect potential short-term impacts to 37 surface water bodies from construction related activities including increased sedimentation and potential for spills. Long-term beneficial reduction in soil disturbance from decreased maintenance activity.	Same impacts as proposed Project. Alt. Rt. 2 does not cross any surface water bodies, nor does the corresponding section of the proposed project.	No identifiable impacts.

Table S-1. Summary Comparison of Impacts - Proposed CH-MM and AU-CH Transmission Rebuild Projects and Alternatives

Issues	CH-MM Transmission Line Rebuild			AU-CH Transmission Line Rebuild		No Action
	Proposed Rebuild Project	**CH-MM Alternative Route 1**	**Proposed Snowy Range Substation**	**Proposed Rebuild Project**	**AU-CH Alternative Route 2**	
Floodplains and Wetlands	Adverse, less than significant. All wetlands and floodplains would be spanned, except direct disturbance to floodplains from location of 2 structures would result, similar to the existing conditions. Indirect potential short-term impacts to wetlands and floodplains from construction related sedimentation and spills. No significant impacts. Long-term beneficial reduction in soil disturbance from decreased maintenance activity.	Similar long-term impacts. Alternative Route 1 would require 2 additional structures in floodplains, as compared to the proposed project. Short-term impacts would be slightly greater. An additional 0.3 acres short-term disturbance.	No identifiable impacts.	No direct impacts. Indirect potential short-term impacts to wetlands and floodplains from construction related sedimentation and spills. No significant impacts. Long-term beneficial reduction in soil disturbance from decreased maintenance activity.	No direct or indirect impacts. Impacts would be the same as the corresponding section of the Proposed AU-CH Project.	No identifiable impacts
Vegetation	Potential adverse impacts, due to vegetation loss and potential for spread of invasive (weed) species. Short-term vegetation disturbance of 414 acres from construction related activity. Long-term disturbance of 0.9 acre. Minor long-term beneficial effects would result from reduction in vegetation disturbance from decreased maintenance activity.	Short-term vegetation disturbance of 438 acres versus 414 for proposed project. Similar long-term impacts (0.9 acres) to proposed project. Similar impacts as corresponding section of proposed project. Riparian vegetation disturbance slightly greater (approx. 0.3 acre).	Slightly Adverse. Long-term loss of 16 acres of short-grass prairie vegetation. Potential for weed invasion.	Potential adverse impacts, due to vegetation loss and potential for spread of invasive (weed) species. Short-term vegetation disturbance of 87 acres from construction related activity. Long-term disturbance of 0.1 acre.	Same	No identifiable impacts

Table S-1. Summary Comparison of Impacts - Proposed CH-MM and AU-CH Transmission Rebuild Projects and Alternatives

Issues	CH-MM Transmission Line Rebuild			AU-CH Transmission Line Rebuild		No Action
	Proposed Rebuild Project	**CH-MM Alternative Route 1**	**Proposed Snowy Range Substation**	**Proposed Rebuild Project**	**AU-CH Alternative Route 2**	
Wildlife	Slightly adverse, less than significant impact. Potential short-term mortality of wildlife, and other species during construction. Impacts to pronghorn and elk minimized by no construction in crucial winter range Nov. 15 to April 30. Potential long-term impacts to raptors (111 raptor nests known to occur within 0.5 mi of ROW), upland game birds (22 greater sage-grouse leks known to occur within 2 mi of ROW), and other birds minimized with Westerns Standard Construction and Mitigation Practices	Similar, except slightly greater potential to impact water birds along Laramie River. No habitat for greater sage-grouse or leks occur on Alt. Route 1.	Slightly adverse impacts. Potential short-term mortality of wildlife from collision with construction related vehicles.	Same types of impacts as CH-MM.	Same	No identifiable impacts
Special Status and Sensitive Species	Potential adverse impacts to special status and sensitive wildlife and plant species are related to construction activities. Listed Species in project area include Preble's meadow jumping mouse, bald eagle, Colorado butterflyplant, Ute ladies'-tresses Impacts to BLM-sensitive and WNDD-tracked species may occur. Long-term potential mortality from power line collision for some species	Similar to proposed project. Slightly more potential Ute-ladies'-tresses habitat affected, but project is still not likely to adversely affect Ute ladies'-tresses.	Likely to adversely affect downstream Platte River species if water is used for soil compaction during substation construction. Once the amount of water to be used has been determined and prior to substation construction, Western would consult with the USFWS on effects to Platte River species.	Same as CH-MM except no designated Preble's meadow jumping mouse critical habitat occurs along ROW only along streams.	Same	No identifiable impacts
Cultural Resources	Long-term potential to adversely impact 12 recommended as eligible sites from construction activities. No significant impact.	Three eligible sites could potentially be affected, but no adverse or significant impacts anticipated.	No identifiable impacts	Long-term potential to adversely impact 5 eligible or recommended as eligible sites from construction activity. No significant impact.	No identifiable impacts.	Adverse effect on historic sites from continued and frequent maintenance activity. No significant impact.

Table S-1. Summary Comparison of Impacts - Proposed CH-MM and AU-CH Transmission Rebuild Projects and Alternatives

Issues	CH-MM Transmission Line Rebuild			AU-CH Transmission Line Rebuild		No Action
	Proposed Rebuild Project	**CH-MM Alternative Route 1**	**Proposed Snowy Range Substation**	**Proposed Rebuild Project**	**AU-CH Alternative Route 2**	
Land Use	Slightly Adverse, short-term dust, noise, and nuisance impacts to land uses from construction activity. Long-term slightly adverse impacts from wider ROW and easement restrictions. Beneficial impact from reduced maintenance activity and reduction in number of structures.	Similar short-term impacts as proposed project. Slightly higher short-term land disturbance (438 vs. 414 acres). Slightly beneficial impacts to agricultural activities with reduction in number of structures along Part B of Alt. 1.	No identifiable impacts.	Slightly Adverse, short-term dust, noise, and nuisance impacts to land uses from construction activity. Long-term adverse impacts from widen ROW and easement restrictions through residential subdivisions south of Cheyenne.	Same types of impacts as proposed project. Beneficial impacts to agricultural land uses due to ROW realignments.	Adverse impacts to land owners and land uses from maintenance activities would continue.
Socioeconomics	Short-term beneficial impacts including increased economic activity in local jurisdictions from construction workforce, contractor, and Western expenditures.	Same	Similar to proposed project; higher income generation with larger workforce.	Same as CH-MM	Same	No new economic activity in region from new construction activity.
Transportation	Short-term increase in construction traffic on major and minor thoroughfares. Short-term traffic delay potential. Noise, dust, and nuisance in residential and commercial subdivisions from construction traffic.	Same	Same	Same as CH-MM	Same	Potential for increased maintenance traffic on local roadways.
Visual	Slightly adverse to adverse visual impacts resulting from larger scale H-frame structures or taller single pole steel structures in visually sensitive park, recreation, residential areas and near major travel routes. Potentially affected areas include Bennett Mountain WSA, Seminoe State Park, residential areas near Laramie and Cheyenne Wyoming, and views to highways and roads at crossings and parallel locations.	Similar to proposed project. Slightly improved conditions along Alt. 1 Part B with increased span of single pole steel structures, i.e. fewer structures in some locations, less visual impact. Visual contrast weak to moderate.	Slightly adverse landscape and visual impacts. Few sensitive viewers present.	Adverse long-term visual impacts to residential subdivisions south of Cheyenne.	Slightly adverse visual impacts. Impacts would be less than with corresponding section of proposed project due to ROW realignments.	No impact.

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1.0 Introduction

The National Environmental Policy Act of 1969 (NEPA) and Council on Environmental Quality (CEQ) implementing regulations (40 CFR 1500-1508) establish procedures that ensure environmental information is available to decision makers, regulatory agencies, and the public before federal actions are implemented. The Western Area Power Administration (Western) is the lead federal agency for preparing the Environmental Assessment (EA) for the Cheyenne-Miracle Mile (CH-MM) and Ault-Cheyenne (AU-CH) Transmission Line Rebuild Project (proposed project). This EA follows the procedures established by the U.S. Department of Energy (DOE) to implement NEPA found at 10 CFR part 1021. Because this project would affect public lands under the jurisdiction of the Bureau of Land Management (BLM), the BLM Rawlins Field Office is a cooperating agency in the NEPA review. BLM is the federal agency responsible for granting rights-of-way (ROW) across public land.

This EA identifies and analyzes the consequences of the proposed project on the human and natural environment and suggests mitigation strategies for adverse impacts. The EA analyzes several alternatives, including the no-action alternative to the proposed project. The EA is not a decision document, but rather an information document, written in plain language to inform the public and decision makers regarding the environmental effects of the proposed project and alternatives. Western will use this EA to decide whether to prepare an Environmental Impact Statement or to issue a Finding of No Significant Impact. Scientific studies used to support this EA are incorporated by reference and summarized in the document.

1.1 Background

Western's Rocky Mountain Customer Service Region proposes to upgrade the existing 146-mile long CH-MM 115-kilovolt (kV) Transmission Line in Carbon, Albany, and Laramie Counties Wyoming; and the existing 35-mile long AU-CH 115-kV transmission line in Laramie County Wyoming and Weld County, Colorado. The CH-MM Transmission Line Rebuild predominantly crosses federal, state, and private lands under the jurisdictions of the BLM, Medicine Bow Divide Resource Area, Rawlins Field Office; Bureau of Reclamation (BOR), Carbon, Albany, and Laramie counties, Wyoming; the Cities of Laramie and Cheyenne, and the State of Wyoming. The proposed rebuild would be located along Western's existing ROWs for the CH-MM 115-kV transmission line. The AU-CH Transmission Line Rebuild predominantly crosses private lands, including lands under the jurisdictions of the City of Cheyenne, Wyoming, Laramie County, Wyoming, and Weld County Colorado; and would similarly follow Western's existing ROW.

Except for six miles of single circuit lattice steel 230-kV construction from Miracle Mile that was constructed in 1992, the CH-MM 115-kV transmission line was constructed in 1939 with predominantly cedar wood H-frame structures and 250 kcmil hollow copper conductor. The line currently has a thermal rating of 109 MVA. The AU-CH 115-kV line was built in the late 1930's, also with predominantly cedar wood H-frame structures and 250 kcmil hollow copper conductor, and currently has a thermal rating of 109 MVA.

Many of the wood H-frame structures used in the original construction of the transmission lines are still in use today, and are approaching, or have exceeded the end of their useful service life. As a consequence, the existing transmission lines are beginning to require increased amounts of maintenance to ensure worker safety and line reliability. The CH-MM line has also been subject to several outages a year. Although most outages are of short durations, these outages affect customers along the line, especially sensitive loads in the Laramie, Wyoming area. Given the age and condition of the line, the likelihood of an outage causing severe damage to the lines and causing permanent faults is greater, due to lightning or snow and ice loading.

At the present time, all available capacity in the CH-MM line is being used in long-term firm transmission or on a short-term basis. Forty megawatts is reserved for wind generation use, and prospective wind generation customers have made several inquires for additional line capacity.

The Cheyenne-Rockport 115-kV line section of the AU-CH 115-kV line is an element of the TOT3 operations boundary. The TOT3 operations boundary consists of six line sections along the border between Northeast Colorado and Southeast Wyoming: Sidney-Sterling 115-kV, Cheyenne-Rockport 115-kV, Archer-Ault 230-kV, Sidney-North Yuma 230-kV, Laramie River-Ault 345-kV and Laramie River-Story 345-kV transmission lines. TOT3 is a highly loaded operations boundary, which capacity cannot be increased without improvement of a TOT3 element or improvement of other system facilities that have impact on a TOT3 element.

1.2 Purpose and Need

Western's mission is to market and transmit reliable, cost-based electric power to its customers. This commitment extends to providing quality service at the lowest possible cost. Sound business practice requires Western to maintain its transmission lines and the associated facilities that provide customers with appropriate transmission service and reliability.

The purpose of the CH-MM and AU-CH Transmission Line Rebuild Project is to ensure Western's ability to provide reliable and cost efficient electric power and to provide additional capacity to the highly loaded TOT3 operations boundary.

Western conducted a number of system planning studies from January 2003 through March 2004 to consider various replacement options for these lines. The system studies considered replacements at both 115-kV and 230-kV voltages, using a variety of structure designs. The 230-kV voltage was chosen since a 75 MW benefit to TOT3 would occur if both the CH-MM and AU-CH lines are upgraded to 230-kV.

Public Scoping

Public and regulatory agency involvement in analyzing the proposed transmission line upgrade is important to ensure that relevant environmental impacts are analyzed. Western notified stakeholders of the project and solicited information on their concerns through scoping letters, dated December 9, 2002, and August 18, 2004. The parties contacted included federal, tribal, state and local governments, and other interested organizations and stakeholders (see Appendix D). Western received direct responses from the following agencies: Department of the Army, Corps of Engineers (December 14, 2002), U.S. Fish and Wildlife Service (USFWS)(November 6, 2002), State of Wyoming, Office of Federal Land Policy (January 9, 2003), Wyoming Department of Transportation (December 27, 2002), Wyoming Game and Fish Department (January 7, 2003), Wyoming Department of State Parks and Cultural Resources (December 16, 2002), Wyoming Office of State Lands and Investments (January 7, 2003). Western also consulted with the USFWS in writing and informally. All correspondence from state and federal agencies is available.

2.0 Alternatives Including the Proposed Project

This EA discloses the affected environment and the environmental consequences of the proposed project and alternatives to determine if significant environmental effects would occur. Section 2.0 describes Western's proposed project, and other alternatives considered during scoping and the alternative development process. Alternatives discussed in this section include design and voltage alternatives that have been considered and eliminated from the EA analysis, as well as transmission routing alternatives and the No Action Alternative that are evaluated in the EA.

2.1 Description of the Proposed Project

2.1.1 General Description

Western owns, operates and maintains the CH-MM115-kV transmission line and the AU-CH115-kV transmission line. The CH-MM transmission line is approximately 146 miles long and extends between the Miracle Mile Substation, located near Seminoe and Kortes Dams in south-central Wyoming and the Cheyenne Substation, in Cheyenne, Wyoming. The AU-CH transmission line is approximately 35 miles long, and extends between the Cheyenne Substation and the Ault Substation in northern Colorado. The locations of the CH-MM and AU-CH transmission lines are shown on Figure 2.1-1. The CH-MM line crosses portions of Carbon, Albany and Laramie Counties, Wyoming, and the AU-CH transmission line passes through portions of Laramie County, Wyoming and Weld County, Colorado.

Western is proposing to rebuild the existing CH-MM and AU-CH 115-kV transmission lines as 230-kV transmission lines. Except for 6.6 miles of lattice steel 230-kV construction that was completed in 1992, the construction of the CH-MM 115-kV line was completed in 1939. The existing original copper conductor and wood H-frame structures have exceeded their expected service life and Western anticipates that cost effective maintenance of the line would not be possible after the next 8 to 10 years. Western's proposed project for the CH-MM rebuild project entails replacing the original transmission line and structures with new 230-kV structures, including both wood H-frame structures and single pole steel structures. The original copper conductor would be replaced with new aluminum "1272 ACSR" conductor. Western is proposing to install approximately 1017 230-kV wood H-frame structures along 134.8 miles of the CH-MM transmission line, from approximately 6.6 miles east of Miracle Mile Substation to Cheyenne, Wyoming. Installation of approximately 26 double circuit single pole steel structures is proposed along approximately 5.0 miles, through the City of Cheyenne to the Cheyenne Substation. As part of the proposed project, Western would also remove the existing 115-kV structures and conductor.

The AU-CH 115-kV line was also built in 1938-1939. Many of the wood H-frame structures used in the original construction of the transmission lines are still in use today, and are approaching, or have exceeded the end of their useful service life. As a consequence, the existing transmission lines are beginning to require increased amounts of maintenance to ensure worker safety and line reliability. Western is proposing to rebuild the AU-CH transmission line with 230-kV/115-kV double circuit single pole steel structures for approximately 32 miles, from the Cheyenne Substation to approximately 3 miles north of the Ault Substation. From this point, Western would utilize the existing Archer-Ault (ARH-AU) 230-kV lattice structures and conductors to the Ault Substation. As part of the AU-CH rebuild, Western would construct approximately 3 miles of new 115-kV transmission line, to the east of the Archer-Ault lattice structures. The 115-kV transmission line would be installed on wood H-frame structures. In total, Western anticipates constructing approximately 166 single pole steel double-circuit 230-kV structures and approximately 24 wood H-frame 115-kV structures for the proposed AU-CH rebuild.

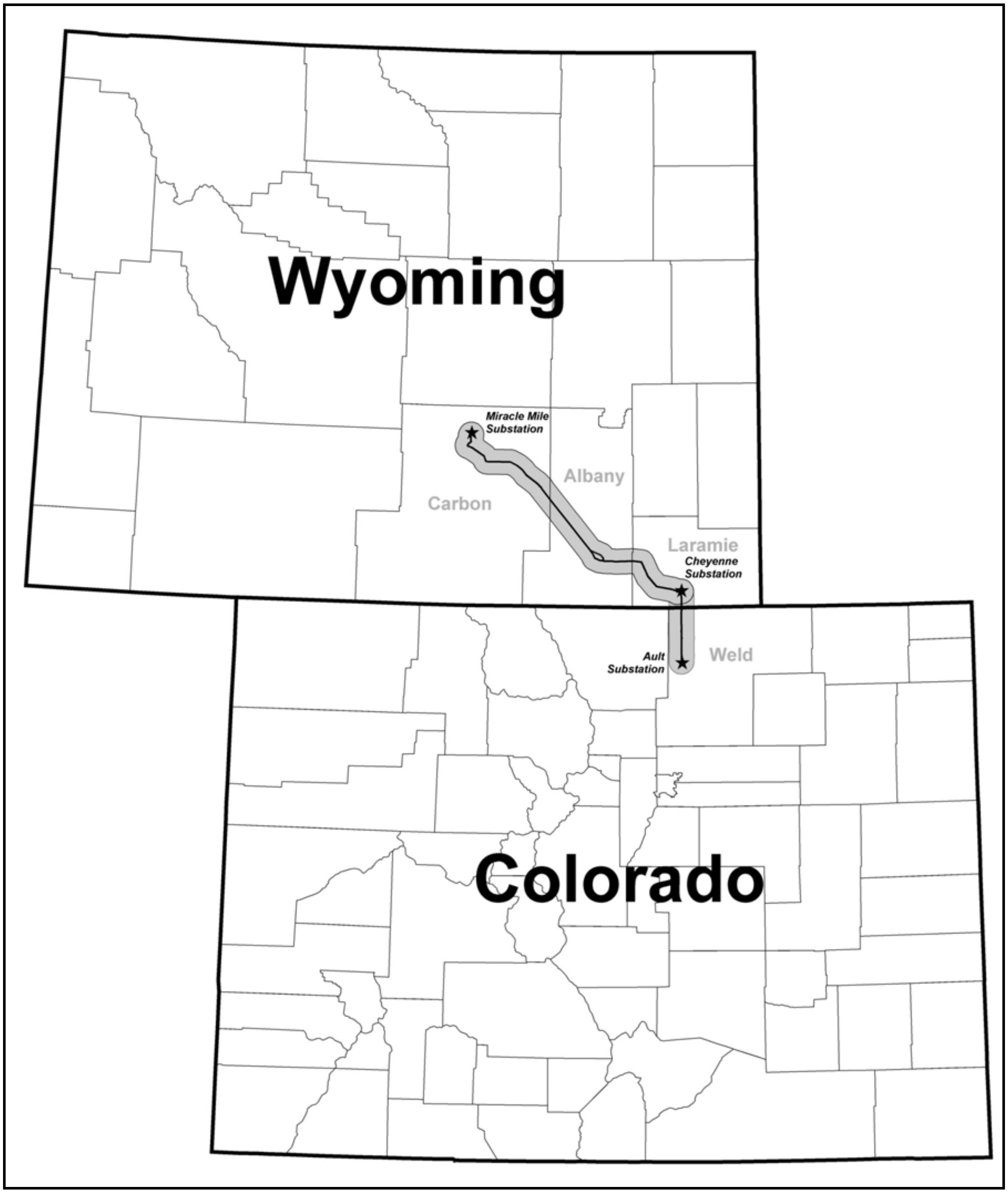

Figure 2.1-1 Locations of the CH-MM and AU-CH Transmission Lines

Western acquired ROWs for the CH-MM and AU-CH transmission lines when the lines were built in 1939 and 1938-1939, respectively. Western's ROWs for 115-kV transmission lines are typically 70- to 75-feet wide on average. The existing ROWs would be widened, as necessary, to provide adequate electrical clearances for the proposed 230-kV and 230/115-kV transmission lines. Western would acquire expanded easements in accordance with applicable laws and regulations governing federal acquisition of property rights.

Western currently maintains access roads along the CH-MM and AU-CH 115-kV transmission line ROWs. These existing access roads would be used for constructing and maintaining the rebuilt CH-MM and AU-CH transmission lines. No new access roads are proposed. Minor improvements to existing roads and some new spur roads to specific structure sites may be required in rough terrain areas along the CH-MM transmission line.

The proposed project would also include a new substation in the Laramie area that would sectionalize the CH-MM and HJ-MM lines. The existing lines have been tapped a number of times over the years to serve rural loads in south central Wyoming, including the entire power requirements for the City of Laramie. The new sectionalizing substation would provide improved reliability to customers, by decreasing line exposure during outage situations. The proposed Snowy Range Substation would be a 115/230-kV sectionalizing substation, approximately 16 acres in size. Western is acquiring approximately 32 acres for the new substation site and the transmission line approaches into the substation. Construction of the 115-kV facilities would occur in 2007 followed by construction of 230-kV facilities in 2009. Western would also make modifications to the existing Miracle Mile, Cheyenne, and Ault Substations. All substation modifications would be within the existing fenced substation facilities.

2.1.2 Description of the Proposed Project By Transmission Line and Sections

The proposed CH-MM and AU-CH transmission lines are described below by section. Sections are defined as portions of the proposed transmission lines that would have the same structure design and ROW characteristics. Figure 2.1-2 shows the general location of each transmission section and Table 2.1-1 summarizes the proposed system design and ROW requirements. Appendix A of the EA contains detailed maps of the proposed project location, including the mileposts (MPs) referenced below. Typical cross-sections of the existing and proposed transmission designs and ROWs are contained in Appendix A, Figures A-1 through A-8.

CH-MM Transmission Line Rebuild

CH-MM Section 1 – Miracle Mile Substation to Milepost 6.6 – From the Miracle Mile Substation to MP 6.6 (structure 6/6), Western is proposing to use the existing lattice steel structures and transmission line conductor that was constructed in 1992 for the CH-MM 115-kV system. This section of the transmission line originates at the Miracle Mile Substation, and routes north and east of the Seminoe State Park in Carbon County, Wyoming. The CH-MM transmission line is the circuit to the west side of the existing HJ-MM line. When this segment of line was rebuilt in 1992, it was rebuilt with 230-kV, 954 ACSR conductor. Along Section 1, the proposed project would consist of uprating the CH-MM 115-kV line to 230-kV. Western's existing ROW is approximately 100 to 120 feet in width, and is adequate for the proposed 230-kV uprate. No construction or new facilities are proposed for Section 1 *(see Appendix Exhibit A-1 and Figure A-1).*

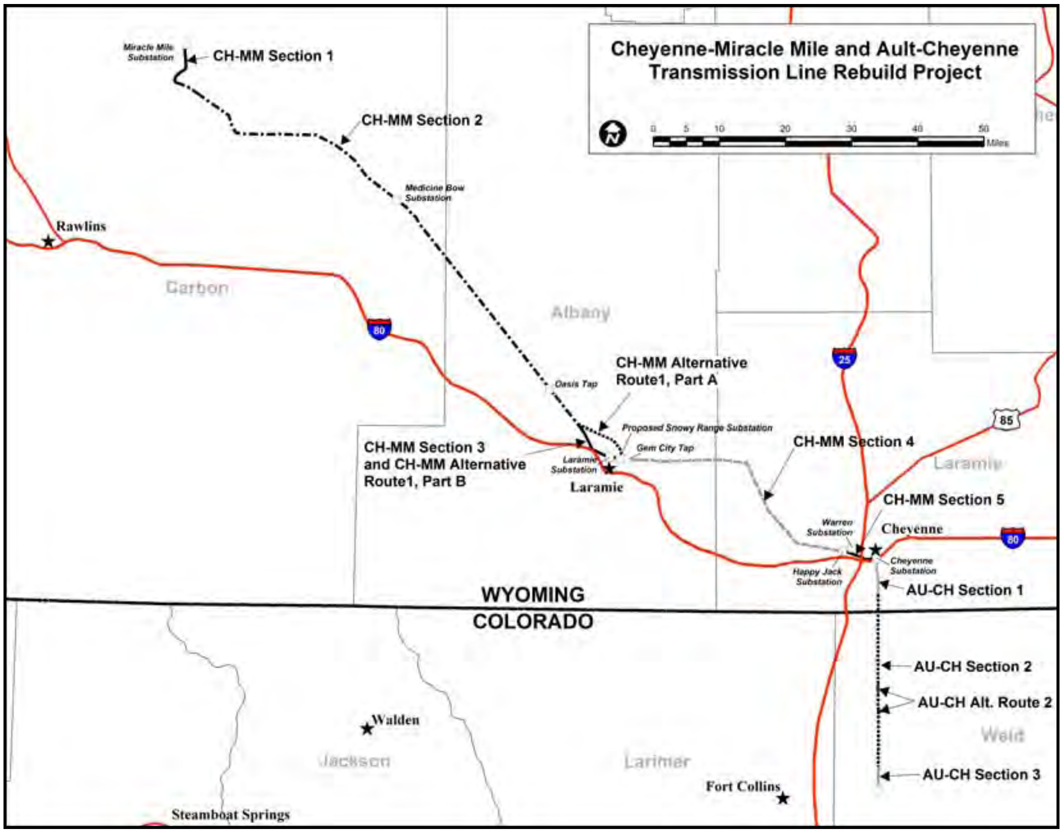

Figure 2.1-2 General Location of Each Transmission Section

Table 2.1-1. Typical Transmission Design – New Structures, Cheyenne-Miracle Mile and Ault-Cheyenne Rebuild Project

Description	**Proposed 230-kV Transmission Structures**	
	H-Frame Structures (CH-MM)	**Double Circuit Single Pole Steel Structures (CH-MM and AU-CH)**
Right-of-Way Width	105 feet	105 feet
Span between Structures (average)	700-800 feet	1,000 feet
Span between Structures (maximum)	1050 feet	1,200 feet
Number of Structures p/mile (average)	7.5	5.2
Height of Structures (average)	70 feet	115 feet
Height of Structures (typical range)	65-83 feet	85-135 feet
Structure base area (square feet)	37.5 sq. feet	20 sq. feet
Land disturbed by construction at each structure base (maximum square feet)	6,500 heavy disturbance 16,000 light disturbance	6,500 heavy disturbance 16,000 light disturbance
Miles of line per conductor stringing site	2-3 miles	2-3 miles
Land disturbed at each stringing site	1 acre 105 feet x 105 feet	1 acre 105 feet x 105 feet
Conductor type and size (circular mils)	ACSR (1,272,000)	ACSR (1,272,000)
Circuit Configuration	Horizontal	Vertical
Minimum ground clearance beneath conductors	25 feet	25 feet

Source: Western Area Power Administration

CH-MM Section 2 – Milepost 6.6 to Milepost 91.0 – Section 2 is approximately 84.4 miles in length, and crosses portions of Carbon and Albany Counties in south central Wyoming. Along Section 2, the CH-MM 115-kV transmission line parallels Western's HJ-MM 115-kV transmission line to the west and south. Western is proposing to replace the CH-MM existing 115-kV wood H-frame structures with new 230-kV wood H-frame structures. Western's existing ROW for the CH-MM line varies in width and overlaps portions of the HJ-MM ROW to the north and east. The CH-MM ROW would be increased to 105 feet *(see Appendix Exhibit A-2 and Figure A-2).*

CH-MM Section 3 – Milepost 91 to Milepost 100 – Section 3 begins at MP 91 , where Western's CH-MM and HJ-MM transmission lines diverge northwest of Laramie, Wyoming in Albany County. Section 3 is approximately 9 miles long, and terminates at the site of the proposed Snowy Range Substation (near MP 100) north of Laramie, Wyoming. Similar to Section 2, Western is proposing to replace the CH-MM 115-kV transmission line and wood H-frame structures with new 230-kV wood H-frame structures and transmission lines. Western's existing ROW is typically 70 to 75 feet wide and varies along the alignment. Western would expand the ROW width to 105 feet *(see Appendix Exhibit A-3 and Figure A-3).*

CH-MM Section 4 – Milepost 100 to Milepost 140 – Section 4 is east of the Snowy Range Substation and extends from the proposed Snowy Range substation site to MP 140, near Happy Jack Substation, 5.0 miles from the Cheyenne Substation. The existing Happy Jack Substation is approximately located at MP 140. Section 4 is approximately 40 miles long and passes through portions of Albany and Laramie Counties. Along this part of the proposed project, the CH-MM 115-kV transmission line routes north of, and parallel to, the HJ-MM 115-kV line. Both 115-kV lines are supported on separate wood H-frame 115-kV structures. Western is proposing to replace the CH-MM 115-kV wood H-frame structures with 230-kV H-frame structures. Western's ROWs for the CH-MM vary, and average 70 to 75 feet in width. Western's combined ROWs for the CH-MM and HJ-MM lines are approximately 140 to 150 feet wide. Western's existing CH-MM ROW would be widened to approximately 105 feet. *(see Appendix Exhibit A-4 and Figure A-4).*

CH-MM Section 5 – Milepost 140 to Milepost 146.4, Cheyenne Substation – Section 5 is approximately 5.0 miles in length and extends from MP 140, in the vicinity of the Happy Jack Substation to the Cheyenne Substation. Section 5 traverses portions of unincorporated Laramie County, and the City of Cheyenne. Along this part of the proposed project, the CH-MM 115-kV transmission line routes north of, and parallel to, the HJ-MM 115-kV line. Both 115-kV lines are constructed on separate 115-kV wood H-frame structures. Western's ROW for the CH-MM varies, averaging 70 to 75 feet in width. Western's combined ROWs for the CH-MM and HJ-MM lines are approximately 140 to 150 feet wide. Along Section 5, Western is proposing to replace both the CH-MM and HJ-MM 115-kV wood H-frame structures with new double circuit 230/115-kV single pole steel structures. The CH-MM 230-kV circuit would be located on the north side of the structures and is planned to terminate in the Cheyenne Substation and connect with the AU-CH 230-kV line. The HJ-MM 115-kV circuit is located on the south side and would remain terminated in the Cheyenne Substation. The proposed project would require a ROW, approximately 105 feet in width. No additional ROWs would be necessary along this section, since the combined ROWs for the CH-MM and HJ-MM transmission lines would be adequate for the proposed double circuit 230/115-kV transmission lines *(see Appendix Exhibit A-5 and Figure A-5).*

AU-CH Transmission Line Rebuild

AU-CH Section 1 – Cheyenne Substation to Milepost 5.2 – From the Cheyenne Substation to approximately MP 5.2, Western presently owns and operates the AU-CH 115-kV transmission line. This section crosses portions of Laramie County, Wyoming and Weld County, Colorado. Western is proposing to rebuild the existing AU-CH 115-kV line that is currently supported on wood H-frame structures, with new double circuit 230/115-kV single pole steel structures. Western's existing ROWs would be expanded to approximately 105 feet to provide for adequate electrical clearances. The AU-CH 115-kV circuit would be located on the east side and the 230-kV circuit would be located on the west side *(see Appendix Exhibit A-6 and Figure A-6).*

AU-CH Section 2 – Milepost 5.2 to Milepost 32.0 – AU-CH Section 2 is approximately 27 miles in length, and located in Weld County, Colorado. Along AU-CH Section 2, the existing AU-CH 115-kV transmission line is located west of, and parallel to, Western's existing Archer-Ault (ARH-AU) 230-kV line. The ROW for the AU-CH transmission line averages 75 feet, and is located adjacent to the ARH-AU for most of this distance. Along AU-CH Section 2, Western is proposing to replace the AU-CH 115-kV wood pole structures with new double circuit 230/115-kV single pole steel structures. Western would widen the existing AU-CH ROW to approximately 105 feet *(see Appendix Exhibit A-7 and Figure A-7).*

AU-CH Section 3 - Milepost 32.1 to Milepost 35, Ault Substation – AU-CH Section 3 is approximately 3 miles long and terminates at the Ault Substation. This section is located in Weld County, Colorado. In this section, Western currently operates the AU-CH 115-kV and the ARH-AU 230-kV lines on double circuit lattice steel structures. The 115-kV circuit is located on the west side and the 230-kV circuit is located on the east side. Western's existing ROWs average 100 feet for the double circuit lattice structures. Along AU-CH Section 3, Western is proposing to uprate the existing 115-kV circuit on the ARH-AU lattice steel structures to 230-kV. Western is also proposing to relocate the existing 115-kV line to new wood H-frame structures, east of the existing lattice structures. Western would obtain ROWs approximately 105 feet in width east of the existing lattice structures for the new 115-kV section of line. In combination with the ARH-AU 230-kV line, Western's ROWs width would be approximately 205 feet along AU-CH Section 3 *(see Appendix Exhibit A-8 and Figure A-8).*

2.1.3 Description of Proposed Transmission Facilities

Proposed Transmission Structure Designs

Western is proposing to rebuild the transmission facilities with 230-kV wood H-frame structures and double circuit single pole steel structures. Figure 2.1-3 depicts the 230-kV wood H-Frame structure, and Figure 2.1-4 illustrates the proposed double circuit single pole steel structure. Design characteristics of the proposed transmission structures are summarized on Table 2.1-1.

230-kV Wood H-Frame Structures – Wood H-frame structures would be installed along 134.8 miles of the CH-MM transmission line. The 230-kV H-frame structures would average 70 feet in height, and be approximately 18 feet taller than the existing 115-kV wood pole structures that they would replace. The width of the new H-frame structures would also be greater, with typical widths being 22 feet, compared to 12 feet for the existing H-frame structures. Normal span lengths between the proposed H-frame structures would be similar to the existing structures, averaging 700 to 800 feet apart.

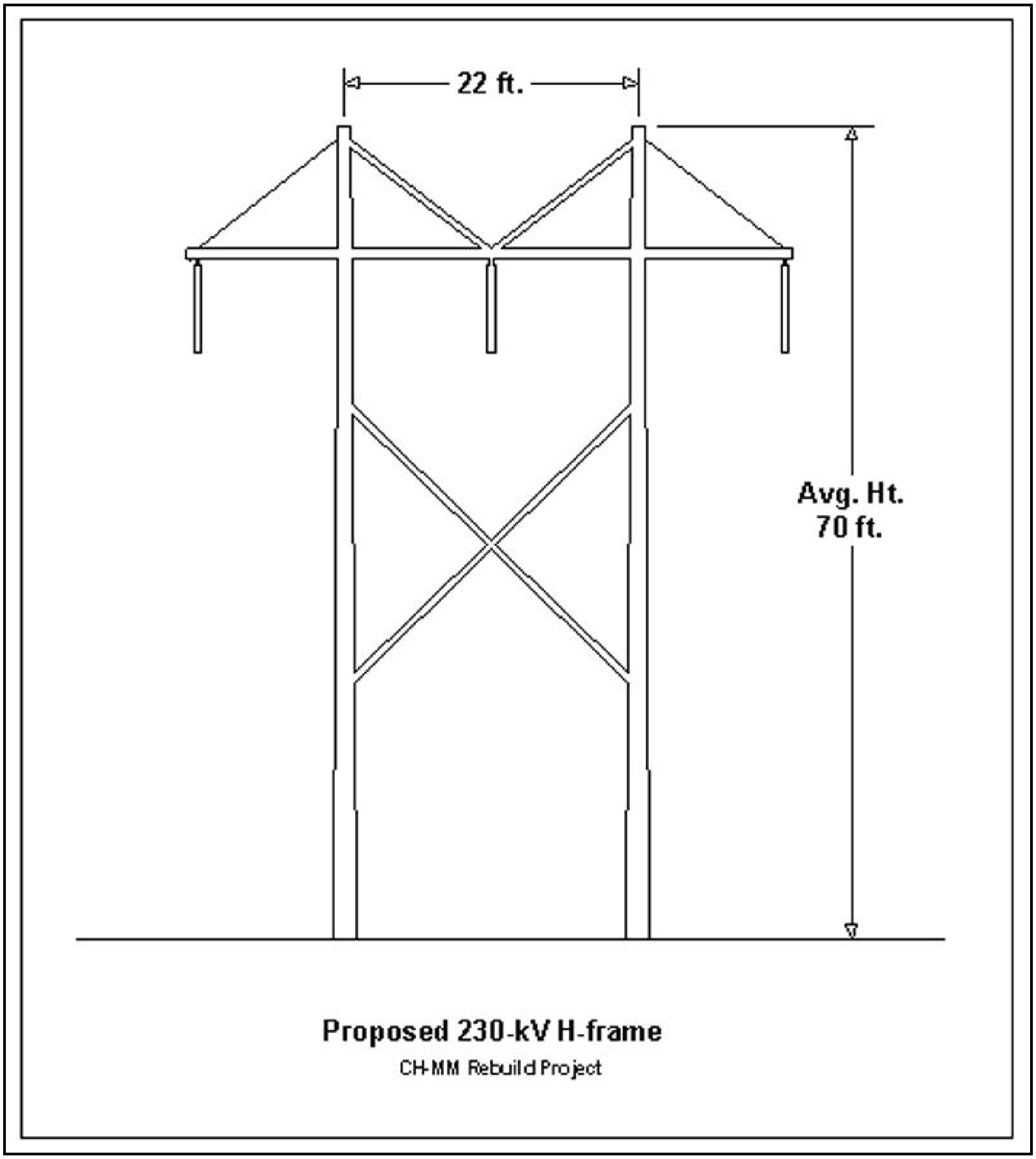

Figure 2.1-3 The 230-kV Wood H-Frame Structure

230-kV Double Circuit Single Pole Steel Structures – Western is proposing to install double circuit single pole steel structures along 5.0 miles of the CH-MM line and along 32 miles of the AU-CH line. The single pole steel structures would be approximately 115 feet in height, compared to 52 feet for the average height of the existing H-frame structures. The normal span length between the single pole steel structures would be 1000 feet, compared to 700 to 800 feet for the existing 115-kV wood H-frame structures. At the crossing of I-80, the single pole steel structures may need to be taller to provide adequate clearances over the interstate. Maximum heights for the proposed project at this crossing are estimated to be approximately 120 feet.

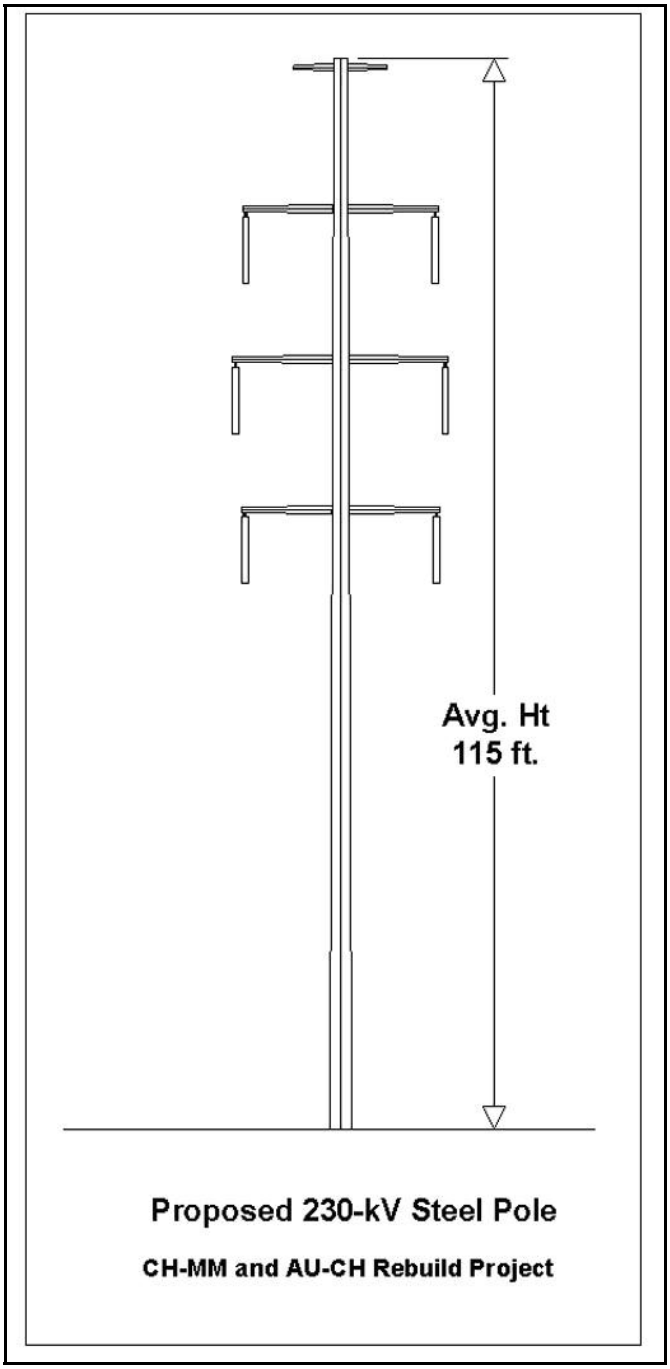

Figure 2.1-4 Proposed Double Circuit Single Pole Steel Structure

2.1.4 Proposed Right-of-Way Modifications

Upgrading the CH-MM and AU-CH transmission lines would occur along existing Western alignments. Western's existing ROWs across federal, state and privately owned lands vary, with typical ROWs being 70 to 75 feet in width. The National Electric Safety Code (NESC) sets standards for electrical clearances for safety purposes. Western proposes to widen the existing

CH-MM and AU-CH 115-kV ROWs to 105 feet in order to meet NESC electrical clearances for the proposed 230-kV transmission systems.

Additional ROWs would be required along most of the rebuild projects. Additional ROWs would not be necessary; however, along the following areas of the CH-MM rebuild project, where the easements are adequate for the proposed project: 1) the first 6.6 miles of the CH-MM transmission line (CH-MM Section 1), where the existing line and lattice structures would be uprated and no new construction would occur; and 2) from MP 140 to 146.4 (CH-MM Section 5) where Western's existing combined ROWs for the CH-MM and HJ-MM are adequate for the proposed double-circuit 230/115-kV single pole steel structures through the City of Cheyenne.

Western would acquire all additional ROWs necessary to meet NESC standards. Expanded and new easements would be acquired in accordance with applicable laws and regulations governing federal acquisition of property rights. These laws allow the payment of just compensation to landowners for the rights acquired and every effort would be made to acquire these rights by direct purchase.

2.1.5 Access Roads

Access to the proposed transmission structure sites and construction areas would occur along Western's existing roads and/or by overland construction methods. Western currently maintains access roads to the CH-MM and AU-CH transmission lines. These existing roads would be used to construct and maintain the proposed CH-MM and AU-CH Rebuild Project. Additional spur roads may be needed to access some new structure sites where vegetation and/or terrain conditions limit or restrict the movement of construction equipment and vehicles. These types of new access roads would be minor and needed only in areas characterized by rough terrain in the western part of the CH-MM project area. After construction is completed, access roads would be used on an occasional and periodic basis to access the transmission lines for routine and emergency maintenance activities.

2.1.6 Proposed Substation Facilities and Modifications

Proposed Snowy Range Substation

Western would construct a new Snowy Range Substation north of the town of Laramie near MP 100 of the CH-MM transmission line. The proposed Snowy Range Substation would be located east of 9th Street and west of N. 30th Street in Laramie. Western is acquiring 32 acres for the substation and transmission line approaches. The substation facility would be approximately 16 acres in size and is required for voltage and sectionalizing support. The substation equipment would consist of a three breaker 230-kV ring bus, one 200 MVA, 115/230-kV transformer and a six-bay 115-kV main and transfer bus. Construction of the 115-kV facilities would occur in 2007 followed by construction of 230-kV facilities in 2009. Figure 2.1-5 shows the location of the Snowy Range Substation.

Miracle Mile, Cheyenne and Ault Substation Modifications

Minor modifications would also be made to the existing Miracle Mile, Cheyenne and Ault Substations to support the proposed 230-kV transmission voltage. All substation changes would be within the existing fenced substation facilities. The Miracle Mile Substation additions would include two 230-kV line bays and one 200 MVA, 115/230-kV transformer. The Cheyenne

Substation additions would consist of a three-breaker 230-kV ring bus and one 200 MVA, 115/230-kV transformer. The Ault Substation would be modified to add one 230-kV line bay.

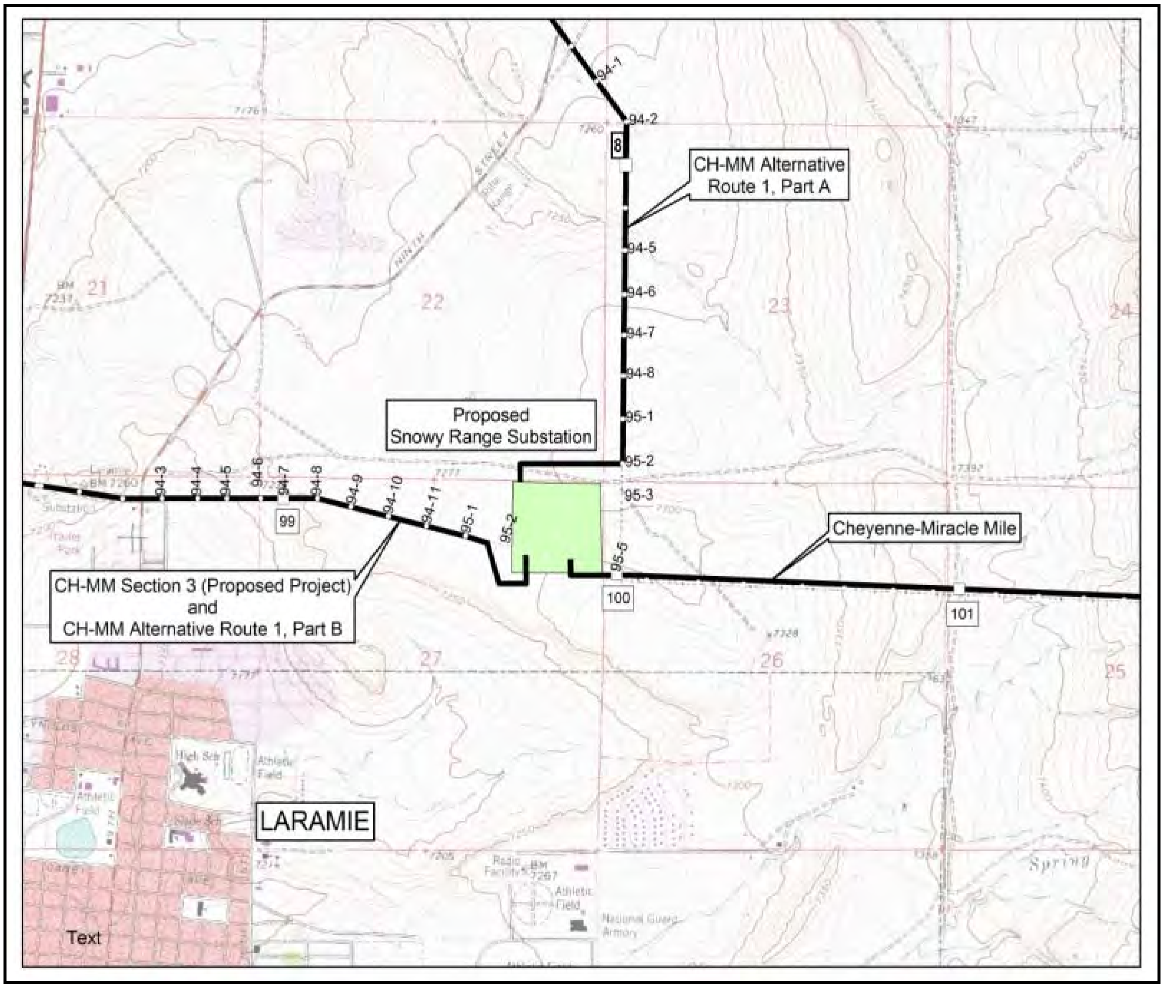

Figure 2.1-5 Location of the Snowy Range Substation

2.1.7 Construction Practices

Construction Schedule

Western plans to construct the CH-MM and AU-CH rebuild project over a three-year period, commencing in 2006. Figure 2.1-6 is the proposed in-service schedule. Construction would precede operational dates by one year. In summary, the following general construction completion periods are planned:

2007: Snowy Range Substation (115-kV facilities);
CH-MM transmission line, between Miracle Mile Substation and Snowy Range Substation;

2008: CH-MM transmission line between Snowy Range Substation and Cheyenne Substation;

2009: Modifications to Miracle Mile Substation;
Modifications to Cheyenne Substation;
Modifications to Ault Substation;
Modifications to Snowy Range Substation (230-kV facilities);
AU-CH transmission line

Transmission Construction

Construction activities for the proposed transmission systems and ground disturbances that would be associated with project construction activities are summarized in Table 2.1-2. During the 2006-2009 timeframe, Western anticipates that two to five crews, of 5 to 6 persons in size, would complete construction along the ROWs. Sequential activities for project construction would entail site clearing and grading, hauling, pole excavation and replacement, framing, conductor stringing and tensioning, and pole disposal/cleanup.

Table 2.1-2. Summary of Short-Term and Long-Term Surface Disturbance from 230-kV Transmission Line Construction

Project Component	Quantity (Number of Structures)	Short-Term Disturbance (Acres)	Long-Term Disturbance (Acres)
Cheyenne-Miracle Mile Rebuild Project			
H-frame structures	1017	152 acres	0.9 acre
Single pole structure sites	26	3.9 acres	0.02 acre
Conductor stringing sites	56	56 acres	N/A
Staging Areas	9	5 acres per each site (45)	N/A
Removal of Existing H-frame structures	1050	157	N/A
New Access Roads	N/A	N/A	N/A
Total		**414**	**0.9**
Ault-Cheyenne Rebuild Project			
H-frame structure sites	24	3.6 acres	0.02 acre
Single pole structure sites	166	24.7 acres	0.08 acre
Conductor stringing sites	13	13 acres	N/A
Staging Areas	2	5 acres each site (10)	N/A
Removal of Existing H-frame structures	240	36	N/A
New Access Roads	N/A	N/A	N/A
Total		**87**	**0.1**
Project Total		**501**	**1.02**

Notes: N/A: Not Applicable
Source: Western Area Power Administration

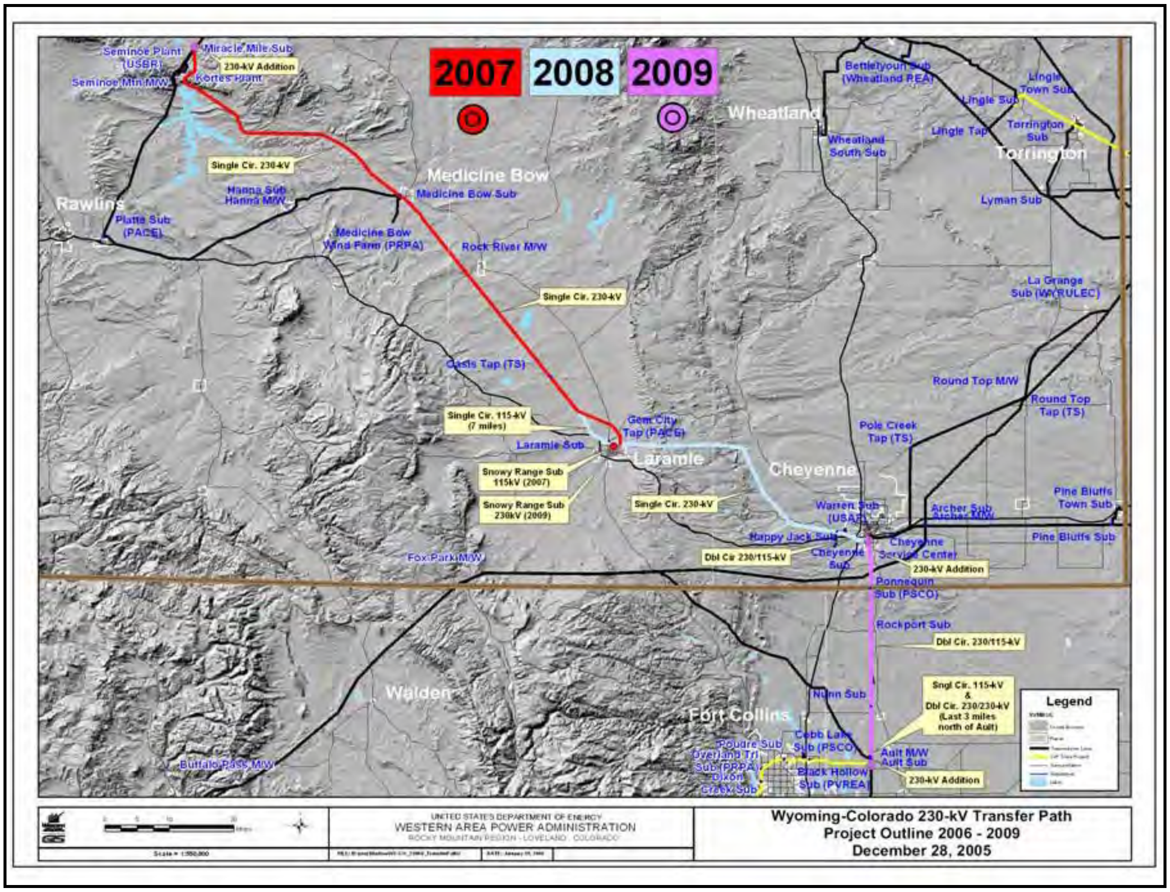

Figure 2.1-6 Proposed In-Service Schedule

Site Clearing and Grading – Standard construction procedures for transmission lines require the movement of vehicles and equipment within the ROW. All trees that may grow into the transmission line would be removed. Based on initial construction plans, Western expects that at each structure site, an area 105 feet by 105 feet surrounding the structure would be needed for construction. Additionally, some leveling of the ground surface may be needed to assure safe operation of equipment. This would be done only on areas of approximately 105 feet by 105 feet. Finally, disturbed areas would be scarified and left in a condition that would facilitate natural revegetation, provide for proper drainage, and prevent erosion.

Structure Excavation and Replacement – Holes would be augured for the new structures and no blasting would be required. Approximately 10 percent of each structure would be placed underground (e.g. a 70-foot tall structure would have approximately 7 feet underground). Erection crews would assemble new structures within the ROW, and crews would position structures into the augured holes using cranes. Dirt from the holes would be used to back fill around the new structures. Excess dirt would be scattered adjacent to the structure and leveled with existing topography. Existing structures would then be pulled and left in the ROW until removed for disposal.

Conductor Stringing and Tensioning – At specific stringing sites, special equipment needs to be set up to remove the old conductors and to pull in new ones. The conductors would be tensioned to a safe point above ground level, without becoming too taut during cold temperatures.

The fiberoptic overhead ground wire would be combined in one wire that would be installed in a similar manner.

Structure Disposal/Clean-up – Old structures would be removed and recycled and/or disposed per existing regulations. All associated hardware, including guying, guy rods, insulators, and conductor and overhead groundwire, would also be reused, recycled or disposed of as appropriate. If requested by a landowner, the old poles may be provided to the landowner for their use. Old structures would become the property of the construction contractor, who would be responsible for their disposal. Western would clean up and restore the ROW to pre-construction condition, to the extent possible.

Substation Construction

Miracle Mile, Cheyenne and Ault Substations – The installation of new and additional equipment at the existing Miracle Mile, Cheyenne and Ault Substations would take place within Western's substation facilities and properties. No new property would be required.

New Snowy Range Substation – The Snowy Range Substation would be constructed within property to be owned and maintained by Western. All construction would take place within an approximately 32 acre parcel that Western would acquire. The substation facility itself would be approximately 16 acres in size. Construction activities may disturb approximately 32 acres in total, including the substation area and the transmission line approaches. Construction of the 115-kV facilities would occur in 2007 followed by construction of 230-kV facilities in 2009.

2.1.8 Operation and Maintenance Practices

Electrical power system dispatchers at Western's Rocky Mountain Region, Power Marketing Operations Center would continue directing routine, daily operation of the transmission line. The dispatchers would use communication facilities to operate circuit breakers, which control the transfer of power through the lines. Because they operate automatically, the circuit breakers ensure safety in the event of a structure or conductor failure. Currently, aerial patrols of the line are conducted two or three times each year. Ground patrols are completed once a year, as weather permits. These patrols would continue as part of Western's routine maintenance program. Climbing inspections would also be conducted, with each structure being climbed and inspected every five years after construction following current maintenance procedures. In emergencies, prompt crew movement would be necessary to rapidly repair or replace damaged equipment.

2.1.9 Project Decommissioning Practices

At the end of the transmission line's useful life (50 to 60 years), if it were no longer required, the line and structures would be dismantled and removed from the ROW. Site reclamation would restore disturbed areas to as near pre-construction conditions as practicable.

2.1.10 Western's Standard Construction, Operation and Maintenance Practices

Western has adopted standard construction, operation and maintenance practices that would avoid and minimize impacts to the environment to the extent practicable. These measures are listed on Table 2.1-3 and include Western's Standard Construction and Mitigation Practices and Special Measures implemented for this Project. In addition, Western would implement Western's Integrated Vegetation Management Guidance Manual and the BLM's Best Management Practices (BMPs). These measures would be used to control and reestablish vegetation within the ROW and at substation sites. These measures are part of Western's proposed project and are considered in the EA impact assessments.

Table 2.1-3. Proposed Project Construction and Mitigation Measures

Western's Standard Construction and Mitigation Practices	
1.	The contractor shall limit the movement of crews and equipment to the ROW, including access routes. The contractor shall limit movement on the ROW to minimize damage to residential yards, grazing land, crops, orchards, and property, and shall avoid marring the lands. The contractor shall coordinate with the landowners to avoid impacting the normal function of irrigation devices during project construction and operation.
2.	When weather and ground conditions permit, the contractor shall obliterate all construction-caused deep ruts that are hazardous to farming operations and to movement of equipment. Such ruts shall be leveled, filled and graded, or otherwise eliminated in an approved manner. Ruts, scars, and compacted soils in hay meadows, alfalfa fields, pastures, and cultivated productive lands shall have the soil loosened and leveled by scarifying, harrowing, discing, or other approved methods. Damage to ditches, tile drains, terraces, roads, and other features of the land shall be corrected. At the end of each construction season and before final acceptance of the work in these agricultural areas, all ruts shall be obliterated, and all trails and areas that are hard-packed as a result of construction operations shall be loosened and leveled. The land and facilities shall be restored as nearly as practicable to the original condition.
3.	Water turnoff bars or small terraces shall be constructed across all ROW trails on hillsides to prevent water erosion and to facilitate natural revegetation on the trails.
4.	The contractor shall comply with all federal, state, and local environmental laws, orders and regulations. Prior to construction, all supervisory construction personnel will be instructed on the protection of cultural and ecological resources. To assist in this effort, the construction contract will address: a) federal and state laws regarding antiquities and plants and wildlife, including collection and removal; and b) the importance of these resources and the purpose and necessity of protecting them.
5.	The contractor shall exercise care to preserve the natural landscape and shall conduct his construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent works, approved construction roads, or excavation operations, vegetation shall be preserved and shall be protected from damage by the contractor's construction operations and equipment.
6.	On completion of the work, all work areas except access trails shall be scarified or left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion. All destruction, scarring, damage, or defacing of the landscape resulting from the contractor's operations shall be repaired by the contractor.
7.	Construction trails not required for maintenance access shall be restored to the original contour and made impassable to vehicular traffic. The surfaces of such construction trails shall be scarified as needed to provide a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.
8.	Construction staging areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent. On abandonment, all storage and construction materials and debris shall be removed from the site. The area shall be regraded, as required, so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.
9.	Borrow pits shall be so excavated that water will not collect and stand therein. Before being abandoned, the sides of borrow pits shall be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent, undisturbed terrain into the pit or borrow area, giving a natural appearance. Waste piles shall be shaped to provide a natural appearance.
10.	Construction activities shall be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes, and underground water sources. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels would be established in areas where staging, stockpiling, and refueling occur. Such pollutants and wastes include, but are not restricted to, refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.

Table 2.1-3. Proposed Project Construction and Mitigation Measures

11.	Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or water courses will not be performed without prior approval from appropriate state agencies. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur.
12.	Excavated material or other construction materials shall not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course perimeters where they can be washed away by high water or storm runoff or can in any way encroach upon the actual water source itself. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur.
13.	Waste waters from construction operations shall not enter streams, water courses, or other surface waters without use of such turbidity control methods as settling ponds, gravel-filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters shall be essentially free to settleable material. Settleable material is defined as that material that will settle from the water by gravity during a 1-hour quiescent period.
14.	The contractor shall utilize such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants.
15.	Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, shall not be operated until corrective repairs or adjustments are made.
16.	Burning or burying of waste materials on the ROW or at the construction site will not be allowed. The contractor shall remove all waste materials from the construction area. All materials resulting from the contractor's clearing operations shall be removed from the ROW.
17.	The contractor shall make all necessary provisions in conformance with safety requirements for maintaining the flow of public traffic and shall conduct his construction operations so as to offer the least possible obstruction and inconvenience to public traffic.
18.	Western will apply necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW to the mutual satisfaction of the parties involved. Western will install fence grounds on all fences that cross or are parallel to the proposed line.
19.	The contractor will span riparian areas located along the ROW and avoid physical disturbance to riparian vegetation. Equipment and vehicles will not cross riparian areas on the ROW during construction and operation activities. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur. Existing bridges or fords will be used to access the ROW on either side of riparian areas.
20.	ROW would be purchased at fair market value and payment would be made of full value for crop damages or other property damage during construction or maintenance.
Western's Project Specific Measures for the CH-MM and AU-CH Transmission Line Rebuild Project	
21.	On the CH-MM portion of the project, construction would not occur within pronghorn, mule deer, or elk crucial winter range between November 15 and April 30 on all public and private lands unless an exception is granted by the BLM. Western would also avoid construction in greater sage-grouse nesting habitat during the nesting season.
22.	Until Preble's meadow jumping mouse is delisted, Western would conduct an inventory prior to construction to determine if any existing structures occur in potential Preble's habitat; these structures would be cut off at ground level to avoid disturbing Preble's habitat.
23.	Western would survey all areas to be disturbed and possible traffic ways for Ute ladies'-tresses, during the appropriate time of year when the orchid is in flower and, if any are found, would consult with the FWS to determine what actions are necessary to avoid or minimize impacts to Ute ladies'-tresses. During operations, traffic in potential Ute ladies'-tresses habitat would be restricted to existing roads.

Table 2.1-3. Proposed Project Construction and Mitigation Measures

<table>
<tr><td>24.</td><td>Western would minimize the introduction and/or spread of weeds by washing all equipment at a commercial facility prior to the start of construction each year, by avoiding vehicle traffic in known weedy areas, and by rewashing equipment if weeds are encountered. Western would reclaim all disturbed areas as soon as practical after construction each year and would implement a weed control program (in consultation with the BLM and private landowners) if the project causes the spread of weeds.</td></tr>
<tr><td>25.</td><td>On the AU-CH portion, Western would avoid construction in pronghorn winter ranges during critical winter periods, to be determined in consultation with the Colorado Division of Wildlife prior to construction each year.</td></tr>
<tr><td>26.</td><td>Western would span all 3.5 miles of known Colorado butterflyplant habitat along the ROW and would limit traffic to existing roads. Operations traffic in known or potential Colorado butterflyplant habitat would also be restricted to existing roads.</td></tr>
<tr><td>27.</td><td>If construction in floodplains and wetlands were to cause soil compaction or ruts, long-term impacts to wetland vegetation could occur. To avoid this impact, Western would limit construction in floodplains and wetlands to periods when soils are dry or frozen and/or use measures to support construction equipment (e.g., oversized treads on equipment, tracked equipment, matting) to avoid compacting soils and creating ruts. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels would be established in areas where staging, stockpiling, and refueling occur.</td></tr>
<tr><td>28.</td><td>If construction is to occur in potential mountain plover habitat during the breeding and nesting season, Western would survey potential habitat for the presence or absence of mountain plover nests and would avoid construction within 0.25 mile of nest sites until 37 days after the nest is discovered or 7 days post-hatching.</td></tr>
<tr><td>29.</td><td>Removal of the existing wooden transmission line structures on eligible cultural sites shall be accomplished by cutting the structures at ground surface, thus requiring no additional excavation of the surrounding area. The structures shall be accessed using rubber-tire vehicles to minimize other associated impacts to the site. All structure removals shall be monitored by a permitted archaeologist. This measure applies to four structures listed below, and will minimize adverse effects caused by structure removal as much as possible.
<table>
<tr><th>Site Number</th><th>Site Type</th><th>Owner</th><th>Structure to be removed</th></tr>
<tr><td>5WL2622</td><td>Historic homestead</td><td>Private</td><td>58-4</td></tr>
<tr><td>5WL4830</td><td>Prehistoric tipi rings</td><td>Private</td><td>57-2</td></tr>
<tr><td>48AB1405</td><td>Prehistoric</td><td>Private</td><td>71-4</td></tr>
<tr><td>48CR8033</td><td>Prehistoric</td><td>Private</td><td>27-2</td></tr>
</table></td></tr>
<tr><td>30.</td><td>Impacts to eligible cultural sites caused by construction of new towers shall be minimized by planning. Whenever possible, transmission structures will be planned outside of site boundaries. In cases where avoidance is not possible, a mitigation plan will be formulated. If new structures are planned within 150 feet of a site, an archaeological monitor will be present to ensure that the site is not impacted during structure construction.</td></tr>
<tr><td>31.</td><td>Heavy trucks and other equipment should not cross eligible cultural sites when unimproved access roads are wet. Upgrading or maintenance of access roads within the boundaries of eligible sites should be avoided wherever possible. Where avoidance is not possible, a mitigation plan should be prepared and implemented prior to any construction or roadwork. The plan should include mitigation of adverse effects. These guidelines apply not only to roads surveyed as project access roads, but also to roads beneath the transmission lines that were subsumed in the transmission line survey.</td></tr>
<tr><td>32.</td><td>The contractor shall receive instructions from Western regarding the potential presence of fossils in pole excavations and in areas excavated or disturbed for roadwork. The contractor will be notified of his obligation to report any suspected paleontologic finds to Western. Western will retain a paleontologist to assess the significance of the paleontological finds and make recommendations. The BLM maintains staff paleontologists to perform assessments of discoveries on lands managed by them.</td></tr>
</table>

Table 2.1-3. Proposed Project Construction and Mitigation Measures

33.	Western would design and construct the transmission line in conformance with *Suggested Practices for Protection of Raptors on Powerlines: the State of the Art in 1996* (Avian Power Line Interaction Committee, 1996) to eliminate the potential for raptor electrocution. Western would install bird flight diverters at the Rock Creek crossing on both the rebuilt CH-MM transmission line and the existing HJ-MM transmission line to mitigate the potential for future raptor collisions at the Rock Creek crossing.
34.	The 230-kV single pole steel structures proposed along CH-MM Section 5 and AU-CH Section 1 and Section 2 will be a neutral non-reflective steel material. Non-reflective and compatibly toned conductors and insulators will also be used in urban settings. Corten steel is not recommended in these settings due to the strong contrasts that the darker steel tone would create in these open settings.
35.	In the event any threatened, endangered, candidate or proposed species are found during construction of the proposed CH-MM and AU-CH transmission line, project-specific surface disturbance shall be halted and the USFWS will be notified immediately. Section 7 consultation between Western and USFWS will be re-initiated prior to restarting construction activities in the specific area.
36.	To minimize impacts to nesting bald eagles, Western will conduct surveys prior to the initiation of construction-related activities within 1.0 mile of the construction corridor. No construction-related activities shall occur within 1.0 mile of any active bald eagle nest from February 1 though July 31. If the nest is determined to be active, Western will immediately notify the USFWS and a raptor mitigation plan will be developed and implemented with the concurrence of the USFWS, the BLM, and the Wyoming Game and Fish Department (WGFD).
37.	Only those trees, tree tops, and limbs that are deemed to pose a hazard to operation and maintenance of the power line will be removed. Western would minimize tree clearing, topping, and limb clearing, and these activities would only occur within the authorized ROW.

Source: Western Area Power Administration, 2004.

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2.2 Alternatives to the Proposed Project

2.2.1 Alternatives Considered and Eliminated from Detailed Study

Western considered design and voltage alternatives to the proposed project. Alternatives considered and eliminated for the CH-MM rebuild include:

- Reconductoring the existing 115-kV line
- Constructing a new 115-kV line on wood H-frame or light duty steel H-frame structures
- Constructing a new 115/230-kV line on light duty steel H-frame, lattice steel or single pole steel structures

For the AU-CH rebuild, the following alternative was considered:

- Constructing a new 115-kV line on wood H-frame or light duty steel structures

All of these system design and voltage alternatives were eliminated since they do not meet Western's purpose and need, with the exception of the light duty steel H-frame, single pole steel or the lattice steel alternative. None of these alternatives would provide the benefit of increasing the TOT3 transfer capability by an additional 75 MW. Light duty steel H-frame, single pole steel and lattice steel structures were eliminated based on costs.

2.2.2 Routing and Realignment Alternatives

The following routing and realignment alternatives have been considered. Localized routing alternatives include:

CH-MM Alternative Route 1 – CH-MM Alternative Route 1 is approximately 16.2 miles long, located north and west of Laramie, Wyoming, and is divided into two parts, A and B. Figure 2.2-1 illustrates an overview of CH-MM Alternative Route 1.

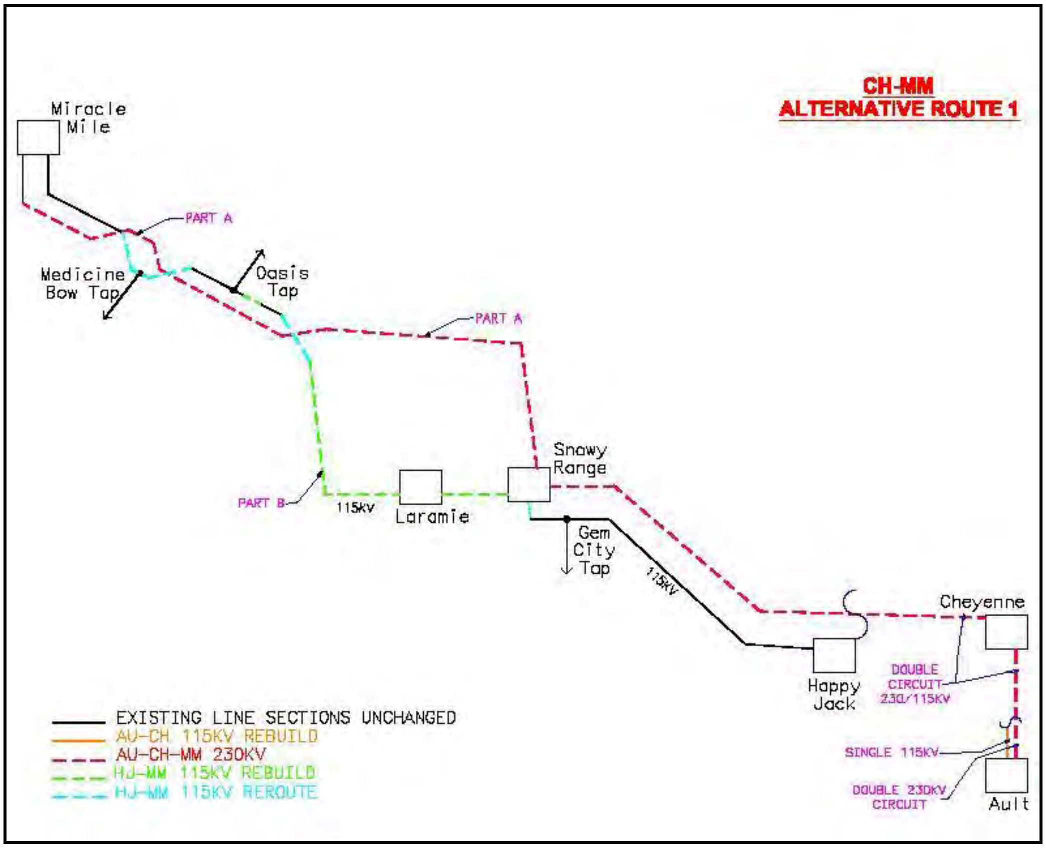

Figure 2.2-1 CH-MM Alternative Route 1

The alternative would diverge from the proposed project as follows:

MP 40 to MP 91 (Figure 2.2-2) – This segment includes the swap of the CH-MM and HJ-MM line sections near the Medicine Bow Tap (MP 47), to continue connection of the Medicine Bow Tap to the remaining HJ-MM 115-kV line. The existing HJ-MM line section would be rerouted onto the original CH-MM ROW and the new CH-MM 230-kV line would be rerouted onto the HJ-MM ROW (also shown in Appendix A, Exhibit A-Alt.1-1). This line swap would be more of an operational change rather than new construction of the transmission line; however, there would be land disturbance where the lines are swapped. The operational changes are required to mitigate or reduce service disruptions to customers that would result from transmission line outages.

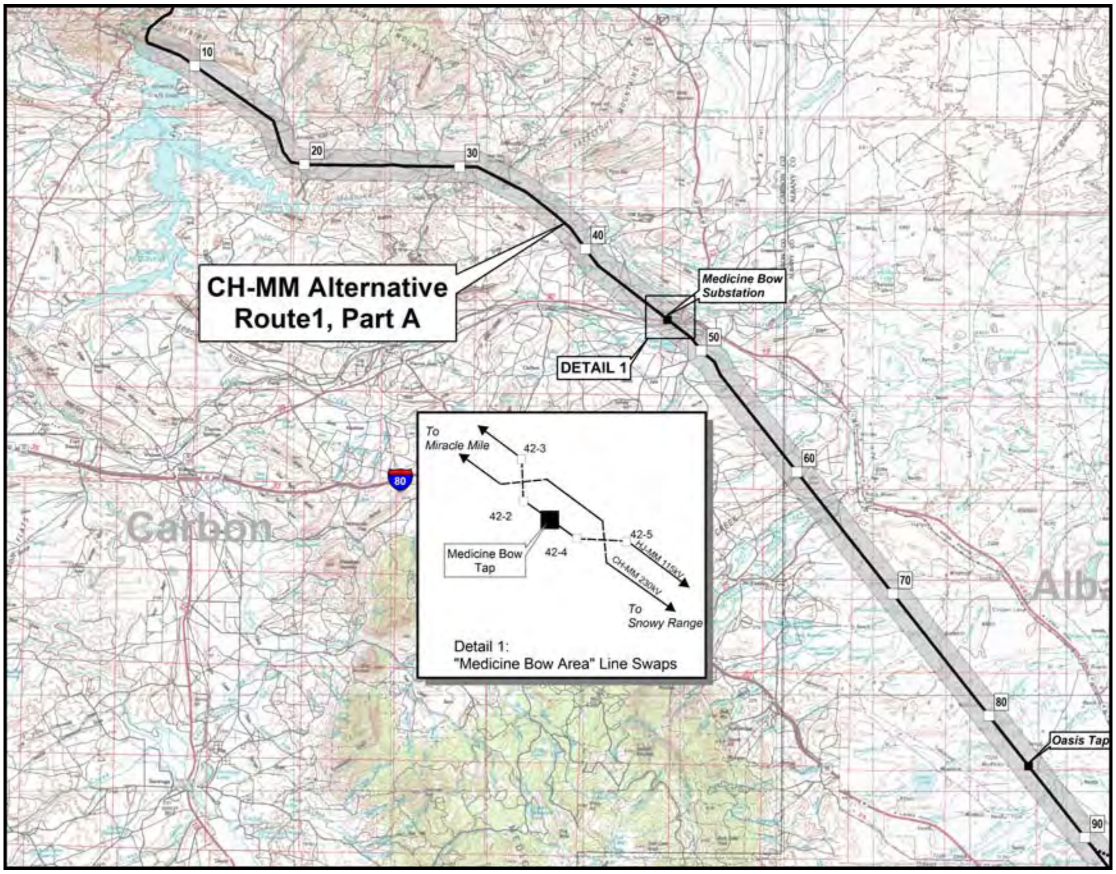

Figure 2.2-2 CH-MM Alternative Route 1 - Medicine Bow Swap

<u>MP 91 to MP 100 (Figure 2.2-3)</u> – This segment includes CH-MM Alternative Route 1, Parts A and B. Part A would be identified as the 230-kV wood H-frame structure rebuild north of Laramie from MP 91 to MP 100 on existing HJ-MM ROW. The remainder of CH-MM Alternative Route 1, Part B would be the swap of the CH-MM and HJ-MM lines near MP 91 to construct the new 230-kV line on the HJ-MM ROW and to rebuild a portion of the HJ-MM line on the original CH-MM line section from MP 91 to the Laramie Substation. This portion of the HJ-MM line construction on the original CH-MM line section would consist of 115-kV single circuit wood H-frame, except from approximately MP 97 to MP 99 where single circuit single pole steel structure construction occurs (also shown in Appendix A, Exhibit A-Alt.1-2). Part A is scheduled to be constructed in 2007 and Part B in 2008.

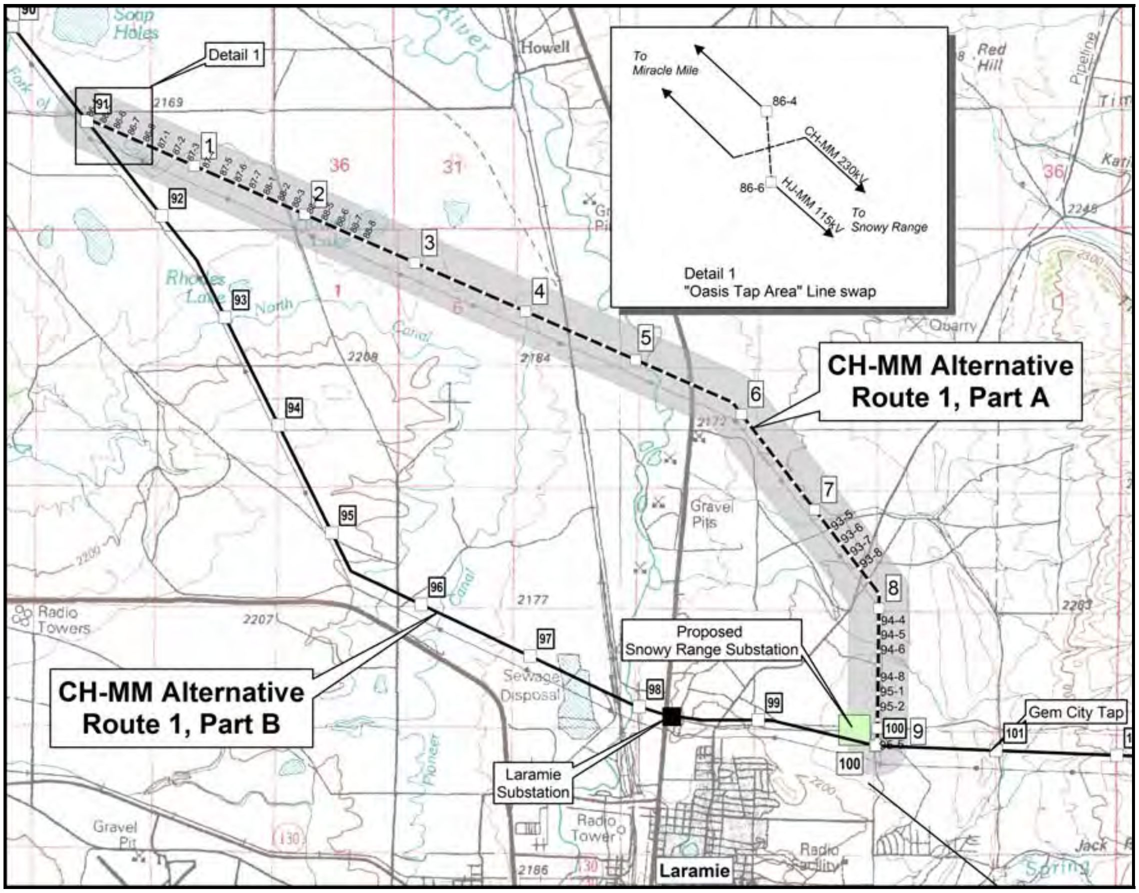

Figure 2.2-3 CH-MM Alternative Route 1 - Parts A and B

The following paragraph describes the proposed transmission structure design of the single circuit single pole steel structure along Part B of CH-MM Alternative Route 1.

<u>115-kV Single Circuit Single Pole Steel Structures on the HJ-MM line</u> – For CH-MM Alternative Route 1, Part B, Western is proposing installing single circuit single pole steel structures along approximately two miles of the re-routed HJ-MM line (MP 97 to MP 99). The single pole steel structures would be approximately 82 feet in height, compared to 52 feet for the average height of the existing H-frame structures. The normal span length between the single pole steel structures would be 800-900 feet, compared to 700 to 800 feet for the existing 115-kV wood H-frame structures. At the crossing of the Little Laramie River and US Highway 287, the single pole steel structures may need to be taller to provide adequate clearances. Maximum heights for the single circuit single pole steel structures for the proposed alternative at the crossings are estimated to be approximately 100 feet. Figure 2.2-4 illustrates the proposed 115-kV single pole steel structure.

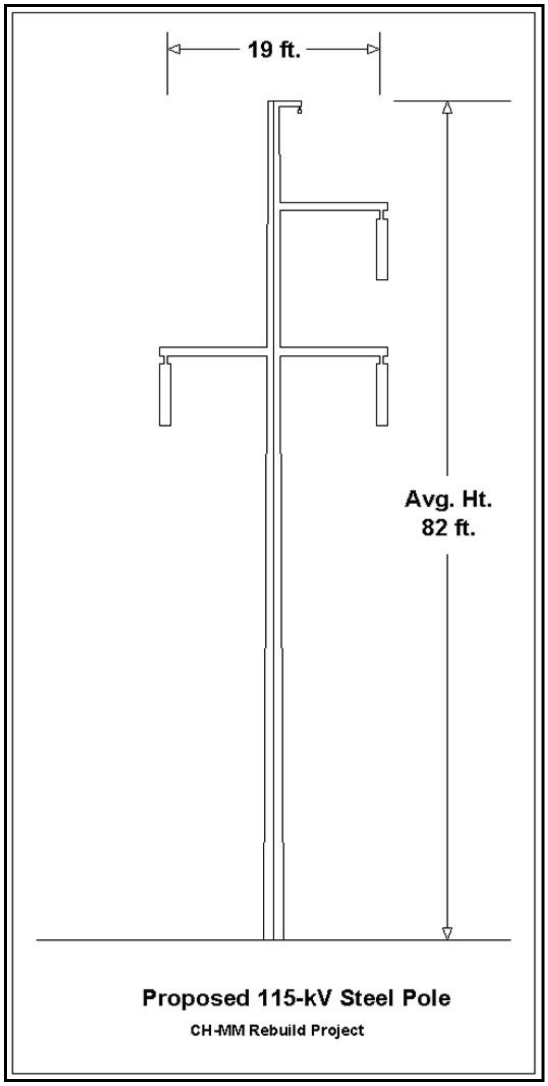

Figure 2.2-4 115-kV Single Circuit Single Pole Steel Structures

Table 2.2-1 summarizes the proposed system design and ROW requirements of all three single circuit structures proposed to be built along CH-MM Alternative Route 1, Parts A and B.

Table 2.2-1. Typical Transmission Design – New Single Circuit Structures, Cheyenne-Miracle Mile Alternative Route 1

Description	**230-kV H-frame Structures Part A (CH-MM)**	**115-kV H-Frame Structures Part B (HJ-MM)**	**115-kV Single Pole Steel Structures Part B (HJ-MM)**
Right-of-Way Width	105 feet	70 feet	70 feet
Span between Structures (average)	700-800 feet	700-800 feet	800-900 feet
Span between Structures (maximum)	1050 feet	875 feet	1,200 feet
Number of Structures p/mile (average)	7.5	7.5	5.2
Height of Structures (average)	70 feet	52 feet	82 feet
Height of Structures (typical range)	65-83 sq. feet	52-55	75-90 feet
Structure base area (square feet)	37.5 sq. ft.	22.5 sq. ft.	12 sq. ft.
Land disturbed by construction at each structure base (maximum square feet)	6,500 heavy disturbance 16,000 light disturbance	6,500 heavy disturbance 16,000 light disturbance	6,500 heavy disturbance 16,000 light disturbance
Miles of line per conductor stringing site	2-3 miles	2-3 miles	2-3 miles
Land disturbed at each stringing site	1 acre 105 x 105 feet	1 acre 105 x 105 feet	1 acre 105 x 105 feet
Conductor type and size (circular mils)	ACSR (1,272,000)	ACSR (795,000)	ACSR (795,000)
Circuit Configuration	Horizontal	Horizontal	Vertical
Minimum ground clearance beneath conductors	25 feet	25 feet	25 feet

Source: Western Area Power Administration

Construction activities for the proposed transmission systems and ground disturbances that would be associated with project construction of the entirety of CH-MM Alternative Route 1 and AU-CH Transmission Line Rebuild Project are summarized in Table 2.2-2.

Table 2.2-2. Summary of Short-Term and Long-Term Surface Disturbance from CH-MM Alternative Route 1 Transmission Line Construction and AU-CH Transmission Line Rebuild Project (Entire Route)

Project Component	Quantity (Number of Structures)	Short-Term Disturbance (Acres)	Long-Term Disturbance (Acres)
Cheyenne-Miracle Mile Rebuild Project with Alternative 1 Part A and Part B			
230-kV H-frame structures	1031	154 acres	0.9 acres
115-kV H-frame structure sites	38	6	0.02 acres
115-kV single pole steel structure sites	10	1.5	0.003 acres
230-kV double circuit single pole steel structure	26	3.9	0.02
Conductor stringing sites	59	59	N/A
Staging Areas	9	45	N/A
Removal of Existing H-frame structures	1130	169	N/A
New Access Roads	N/A	N/A	N/A
Total		**438**	**0.9**
Ault-Cheyenne Rebuild Project			
H-frame structure sites	24	3.6 acres	0.02 acre
Single pole steel structure sites	166	24.7 acres	0.08 acre
Conductor stringing sites	13	13 acres	N/A
Staging Areas	2	5 acres each site	N/A
Removal of Existing H-frame structures	240	36	N/A
New Access Roads	N/A	N/A	N/A
Total		**87**	**0.1**
Project Total		**525**	**1**

Notes: N/A: Not Applicable
Source: Western Area Power Administration

Appendix A of the EA contains detailed maps of the CH-MM Alternative Route 1 location, including the mileposts (MPs) referenced above. Typical cross-sections of the existing and proposed transmission designs and ROWs are contained in Appendix A, Exhibit A- Alt. 1-1, Exhibit A - Alt. 1-2, and Figure A – Alt. 1-1. Table A - Alt. 1-1 shows a summary of short-term and long-term surface disturbance and the total number of structures by type for the CH-MM Alternative Route 1 alone.

AU-CH Alternative Route 2 – AU-CH Alternative Route 2 consists of localized realignments of the proposed project between MPs 17 and 32.5, where Western's AU-CH and ARH-AU transmission lines are intermittently located east and west of rural homes and buildings, respectively (Figure 2.2-5). Under this alternative, the AU-CH line would be located adjacent and parallel to the existing ARH-AU transmission line.

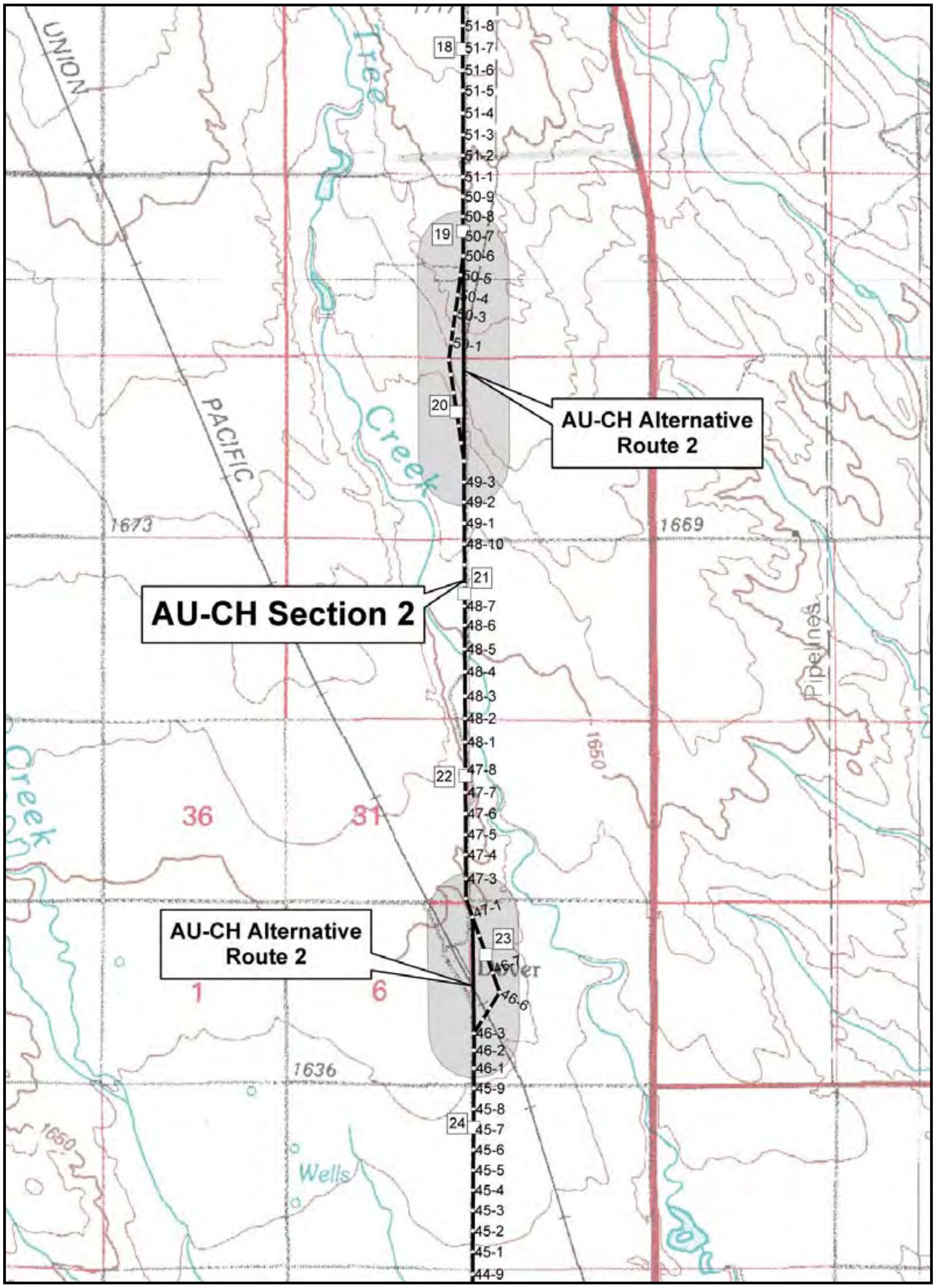

Figure 2.2-5 AU-CH Alternative Route 2

2.2.3 No Action Alternative

Under the No Action Alternative, Western would not rebuild or upgrade the existing CH-MM and AU-CH transmission lines or substation facilities. Maintenance issues on the CH-MM line would increase, and the line would become difficult to maintain in service beyond 5-8 years, given its age and deteriorating condition. As a result, reliability problems would become more frequent, as well as the frequency of repairs, as the line continues to age. The No Action Alternative would also result in no benefits to the TOT3 transfer capability. Consequently, this alternative would not fill Western's stated purpose and need for the proposed project.

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3.0 Affected Environment and Environmental Consequences

3.1 Scope of Analysis

The Affected Environment and Environmental Consequences section of the EA describes the existing conditions in the project area and discloses the environmental consequences of the proposed project and alternatives. This section is organized by resource topics. Each resource section describes the affected environment pertinent to the topic and the potential impacts of the proposed project and alternatives, including the No Action Alternative. The resource sections also address the standard construction practices and mitigation practices that Western would implement to ensure that all impacts are less than significant. Compliance with federal environmental regulations and Executive Orders are discussed in the various sections, as well.

3.1.1 Resource Issues and Project Areas Considered

The environmental issues considered in this EA include those resources that would be impacted by the project to some degree. These include Climate and Air Quality (Section 3.2), Geology, Soils, and Paleontology (Section 3.3), Water Resources (Section 3.4), Floodplains and Wetlands (Section 3.5), Vegetation (Section 3.6), Wildlife (Section 3.7), Special Status and Sensitive Species (Section 3.8), Cultural Resources (Section 3.9), Land Use – Existing and Planned (Section 3.10), Socioeconomics and Community Resources (Section 3.11), Transportation and Communications (Section 3.12), Visual Resources (Section 3.13), and Electrical Effects and Human Health (Section 3.14).

For each of the resource topics, a ‘project area’ is defined, based on the geographic extent where direct or indirect impacts could occur. A summary of the project areas, by resource issue, are:

- Climate and Air Quality – ROW, substation sites, and regional air basins
- Geology, Soils and Paleontology – ROW, substation sites
- Water Resources – ROW, substation sites and adjacent/nearby surface waters and groundwater basins
- Floodplains and Wetlands – ROW, substation sites
- Vegetation – ROW, substation sites
- Wildlife – ROW, substation sites, regional setting and associated habitats
- Special Status and Sensitive Species – ROW, substation sites, regional setting and critical habitats
- Cultural Resources – ROW, substation sites
- Land Use – ROW, substation sites, adjacent/nearby land uses within 2 miles
- Socioeconomics – regional and local community settings
- Transportation and Communications – ROW, substation sites, and surrounding regional transportation systems
- Visual Resources – ROW, substation sites, and surrounding viewer locations within 2 miles
- Electrical Effects and Human Health – ROW, substation sites, adjacent areas with sensitive receptors

3.1.2 Resources Not Requiring Further Study

Resources that were identified as not requiring further study because of the minimal impact the project would have on them include Solid and Hazardous Waste and Noise.

3.2 Climate and Air Quality

3.2.1 Affected Environment

Upgrading the existing CH-MM and AU-CH transmission lines and related substations would not affect climate. Information on climate is provided as background information pertinent to the air quality analysis. The project area for climate and air encompasses the regional air basin in which the proposed project ROW, access roads, and substation sites are located.

3.2.1.1 Climate

The project is located in the high plains of the southeastern portion of Wyoming and the northern most portion of the front range of Colorado. From a climatological standpoint the project area is considered semi-arid, with the potential for wind blown dust being high, similar to the rest of the intermountain west. This premise is supported by the relatively high annual average wind speeds in the project area. Wind speeds range from an annual average of 12.2 miles per hour (mph) in Laramie, Wyoming, to 12.6 mph in Cheyenne, Wyoming, to 7.1 mph in Fort Collins, Colorado, near the southern terminus of the project (WRCC 2004).

As expected in a semi-arid area, annual average precipitation totals are low. Precipitation ranges from 10.36 inches per year in Medicine Bow, Wyoming, to 10.63 inches in Laramie, Wyoming, to 15.15 inches in Cheyenne, Wyoming, to 13.30 inches per year in Nunn, Colorado (WRCC 2004). Spring and early summer are the wettest periods, with May being the wettest month.

The project area experiences fairly large diurnal variations in temperature due to the relatively high project elevations and dry conditions. For example, in July, average temperatures range from the high 40s to low 50s in the morning, to the upper 80-degree range in the afternoon (WRCC 2004). January is the coldest month of the year with daytime temperatures ranging from around 10 degrees in the morning, to the high 30s and low 40s during the afternoon.

3.2.1.2 Air Quality

Applicable Laws and Regulations

Federal actions are required to conform to the Clean Air Act (CAA, 1970, as amended). The CAA is implemented at the federal, state and local government levels. The Environmental Protection Agency (EPA) has primary federal responsibility for implementation of CAA; responsible state agencies include the Wyoming Department of Environmental Quality (WDEQ) Air Quality Division (AQD) and the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD). To comply with the requirements of the CAA, the states of Wyoming and Colorado have developed State Implementation Plans (SIPs). The SIPs outline the steps and timelines that the states would follow to assure compliance with the requirements of the CAA.

Part of EPA's role is to develop and maintain National Ambient Air Quality Standards (NAAQS). Although the project area is climatologically predisposed to be dusty, the entire project area is in compliance with the NAAQS for all criteria pollutants (WDEQ-AQD, 2004 & CDPHE-APCD, 2004). This includes standards for sulfur dioxide (SO_2), nitrogen dioxide (NO_2) ozone and particulate matter. This means that the project is located within an "attainment" area and, as such, conformity determination requirements do not apply to the proposed project or alternatives.

Under the CAA, proposed new sources of air pollutants are required to obtain construction and then operating permits for the source(s) in question. Sources required to obtain permits must address Prevention of Significant Deterioration (PSD), visibility protection, and the general conformity provisions of the CAA as part of their permitting effort. However, the act does delineate between type and size of source, and exempts many sources from permitting requirements altogether.

Particulate Matter

Air pollutants resulting from this type of short-term construction-related project are primarily particulate matter. The majority of particulate matter is made up of solid particles, such as the dust generated when construction vehicles drive on a dirt road, although particulate matter may also contain liquid droplets. Most particulate matter is smaller than can be seen by the human eye. The dust that we see is made up of larger, darker, particles and many smaller particles that cannot be seen individually. The unit of measure used to measure the size of particulate matter is the "micron" (one micron is equal to one millionth of a meter). Larger particles, 50 microns and greater in diameter, tend to "fall out" of the air due to the pull of gravity and settle back on the ground within close proximity to where they were generated. Smaller particles, 10 microns and less in diameter (PM-10) remain airborne longer and are therefore subject to transport on prevailing winds and air currents.

For particulate matter two standards have been established. One for PM-10 and one for particulate matter less than 2.5 microns in diameter (PM-2.5). The EPA has established standards for these size ranges because studies have shown that particles smaller than 10 microns in diameter may be inhaled deep into the lungs and result in potential human health hazards. The very small "fine" particles, PM-2.5 and smaller, are considered to be potentially the greatest health concern. The majority of these fine particles are a result of a combustion process, for example, vehicle exhaust, wood and coal burning, or forest fires. Interestingly, the smaller dust particles also impact visibility more adversely than the larger particles. The unit of measure for the particulate standards is micro grams per cubic meter of air ($\mu g/m^3$). A micro gram is one millionth of a gram and a cubic meter is approximately 35 cubic feet. To put this unit of measure in perspective, it might be helpful to think of a particulate concentration of one micro gram per cubic meter as something approximating one grain of salt in a 55-gallon drum. As noted above, the project is located in an attainment area for all NAAQS. Annual average PM-10 levels in the project area run from approximately 30 percent to 70 percent of the annual average standard of 50 $\mu g/m^3$. Annual average PM-2.5 levels in the project area are approximately 30 to 40 percent of the standard of 15 $\mu g/m^3$.

3.2.2 Environmental Consequences and Mitigation Practices

3.2.2.1 Significance Criteria

The proposed project or alternatives would have significant impacts on air quality if:

- the construction, maintenance or operation of the proposed project or alternatives would cause or contribute to a violation of federal or state standards. Wyoming and Colorado standards are the same as the federal NAAQS for the air pollutants that may potentially result from the construction and operation of the project or alternatives.

3.2.2.2 Impacts of the Proposed Project

The impacts of the proposed project are discussed below by project component. Overall, the proposed project and alternatives would be in compliance with National Ambient Air Quality Standards and the state implementation plans for both Wyoming and Colorado. There are no federal or state permitting requirements for this source type, and relative to other types of air emission sources, the proposed project or alternatives would release very small amounts of pollutants for very short and intermittent periods of time. Quantification of pollutants is not required for this type of project. Similarly, the proposed project or alternatives are not subject to New Source Performance Standards and there is no New Source Performance Standard for this source type. The National Emissions Standards for Hazardous Air Pollutants are also not applicable to this project, nor are emissions limitations of the Air Quality Control Region. There would be no potential for exposure to either humans or the environment from radiation or hazardous chemicals associated with the proposed project or alternatives. The proposed project or alternatives would also not affect any area designated Class I under the Clean Air Act. From an air quality standpoint this project is a temporary and transient operation with a finite and relatively small amount of emissions to be released into the air.

The proposed project would result in short-term increases in total suspended particulates from the movement of vehicles, equipment and soil disturbances during construction. Short-term emissions of nitrogen oxides, hydrocarbons, carbon monoxide and sulfur dioxide from construction and maintenance vehicles would also result. Long-term, the project and action alternatives would result in reductions in suspended particulates and other vehicle air pollutants, since future maintenance requirements would be less than currently required.

Transmission System – CH-MM Transmission Line Rebuild

The proposed project would not result in significant impacts on air quality. Implementation of Western’s Standard Construction and Mitigation Practices 14, 15, and 16 (Table 2.1-3), would insure that air quality impacts are minimized and that no violations, or contributions to violations, of federal or NAAQS or Wyoming state standards occur. Only minor, localized, temporary short-term impacts and no long-term impacts on air quality from either construction or operation activities would occur.

Construction impacts associated with the project would be similar to any other commercial or light industry construction activities. The predominant air pollutant that would be released into the atmosphere would be particulate matter (dust). In addition, there would be some gaseous pollutants released into the air, such as CO, from the vehicle exhaust of the construction equipment. Western’s construction activities would proceed along the existing ROW, using existing access roads and overland construction methods. A few new access spur roads would be constructed to structure sites, and some sections of the existing access roads may need to be regraded or improved. Construction activities would be limited to the ROW. Consequently, soil disturbances and related dust impacts would primarily occur at structure sites, staging areas, and pulling sites. Construction activities would only be detectable in the immediate vicinity of the activity. Additionally, once construction stops for the day or work is completed in any given area, any impacts on air quality would stop.

Operational impacts on air quality would be minimal. The impacts would consist primarily of some gaseous pollutants being released into the air from the tailpipes of the few vehicles used for service activities. Some fugitive dust may also result if and when service vehicles travel over unpaved areas. Reduced maintenance along the new line would reduce particulates generated from future maintenance traffic.

Transmission System – AU-CH Transmission Line Rebuild

Impacts to the AU-CH Transmission Line Rebuild would be similar to those described for the CH-MM Transmission Line Rebuild. The AU-CH Rebuild Project would not violate, nor contribute to violations of federal NAAQS or State of Colorado and Wyoming standards. There would be only minor, localized, temporary short-term impacts and no long-term impacts on air quality from either construction or operation activities.

Substations – Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

The proposed substation modifications would not result in any long-term impacts to air quality, and would not violate NAAQS or state (Wyoming and Colorado) air quality standards. Modifications to the existing Miracle Mile, Cheyenne and Ault Substations would result in very minor and temporary air quality impacts, resulting from the presence of construction vehicles and equipment at these existing facilities. No surface disturbances would be required at these existing Western facilities that would contribute to temporary increases in particulate matter.

Short-term air quality impacts would occur during the construction of the proposed Snowy Range Substation. The presence of construction crews, vehicles and equipment, and project grading would result in short-term impacts during the substation construction phase. These impacts would not be significant. Impacts would be short-term in duration. No adverse impacts to air quality would result during the operation of the new substation.

3.2.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Impacts for CH-MM Alternative Route 1 would be similar to the proposed project. This alternative would involve the same types of short-term construction activities and localized soil disturbances and modifications within Western's existing ROWs. Since CH-MM Alternative Route 1 would include rebuilding the CH-MM 230-kV transmission line along the existing HJ-MM ROW and rebuilding the HJ-MM 115-kV transmission line along the existing CH-MM ROW, short-term air quality impacts would occur along Part A and Part B of the CH-MM Alternative Route 1 ROWs.

AU-CH Alternative Route 2

The construction and operation of the AU-CH Alternative Route 2 would result in the same impacts as described above for the CH-MM Rebuild Project.

No Action Alternative

Under the No Action alternative there would be no construction activities and therefore no commensurate construction related short-term air quality impacts. However, it is likely that operational impacts to air quality would be somewhat greater than under the proposed project or alternatives, as more frequent maintenance would likely be required. Nevertheless, the No Action operational impacts would not be significant.

3.3 Geology, Soils, and Paleontology

This section of the EA summarizes the geology, soils, paleontology and geotechnical hazards associated with lands crossed by the proposed project and alternatives. The project area for geology, soils and paleontology encompasses the proposed project ROW, substation sites, and access roads. Pertinent issues associated with these topics are whether geologic conditions would pose any constraints (e.g. slope instability) or geologic hazards that could affect the location or design of project facilities; whether the project would have the potential to affect geologic formations with known paleontological values or recorded sites; and whether the project would be likely to increase soil erosion that could affect local water quality and related water resources. Supporting detailed data on the location of geologic units, paleontological resources, soils, and geologic hazards is contained in Appendix B, Table 3.3, and should be referenced for site specific milepost information.

3.3.1 Affected Environment

3.3.1.1 Geology

Western's existing CH-MM ROW crosses numerous formations of sedimentary rocks of the Cretaceous and Jurassic Periods of the Mesozoic Era and Tertiary Period of the Cenozoic Era. The geography of the project area between the Miracle Mile Substation and approximately 13 miles west of Laramie, Wyoming, is characterized as rugged foothills and draws. Major geologic formations encountered between the Seminoe Mountains and Laramie, Wyoming include the following: Ferris and Hanna Formations (Paleocene Epoch of the Tertiary Period and Cretaceous Period), that consist of brown and gray, sandstone, shale, conglomerates and coal beds; Steele Shale (Cretaceous) a gray, soft, marine, shale containing numerous bentonite beds; Niobrara Formation (Cretaceous), a limestone and limy shale; Almond Formation (Cretaceous), a white and brown soft sandstone, gray sandy shale, coal and carbonaceous shale; and the Wind River Formation (Eocene Epoch of the Tertiary Period), characterized by claystone and sandstone with some conglomerate.

From approximately 13 miles west of Laramie to the Laramie substation, the route crosses recent depositional activity including alluvial, terrace, windblown, colluvium, alluvial fans and landslides of the Quaternary Period. Through Laramie, the route encounters Triassic Period Chugwater Formation of red shale and siltstone, and more recent alluvial deposits. East of Laramie, the route climbs the Laramie Mountains and encounters sedimentary rocks of the Permian Period Casper and Fountain Formations. These formations consist of sandstone, shale and limestone. Approximately 9 miles east of the Laramie Substation, near the top of the first ridge east of Laramie, the route encounters Precambrian Era Sherman Granite, which extends to the eastern flank of the mountain range.

From the east edge of the Laramie Mountains to the Ault Substation, the route crosses Tertiary and Cretaceous Period sedimentary deposits. Major geologic formations encountered in this area include: White River Formation (Eocene Epoch of the Tertiary Period) claystone, sandstone and conglomerate; Ogallala Formation (Oligocene Epoch of the Tertiary Period) sandstone, siltstone, and conglomerate; Laramie Formation (Cretaceous Period) sedimentary rock, composed of shale, claystone, sandstone, and major coal beds (No exposed coal beds noted in the project area.); unconsolidated surficial deposits and rocks of the Quatenary Pre-Bull Lake Age (Love Christensen 1985, Tweto 1979).

3.3.1.2 Soils

The Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS) is the primary source of soils information. Pertinent soil survey reports for the project area include: Laramie County, Wyoming, Western Part (Stevenson 2001), Albany County Area Wyoming (Rechner 1998), and the Weld County, Colorado, Northern Part (Crabb 1982). No document has been published for Carbon County, Wyoming, which is the western end of the project area. Appendix B, Table 3.3 describes soil types crossed by the proposed CH-MM and AU-CH transmission line rebuild projects.

The soils in the northern Hanna Basin, which encompasses most of the CH-MM route from the Seminoe Reservoir to MP CH-MM 59, are derived from sandstone and clay shales. These soils are generally classified as shallow to moderately deep with grass-shrub covers, and are mainly rangelands with some hay and irrigated cropland along the streams (Fallet et al., 1987). From MP CH-MM 58.8 to the west edge of the Laramie Mountains, approximately six miles east of the Laramie Substation, soils are characterized as moderately deep to very deep, typically well drained, moderately level to very steep. These soils generally support rangeland and wildlife habitat (Reckner, 1998). Across the Laramie Mountains, soils are characterized as very shallow to moderately deep, well drained, gently sloping to very steep. Rock outcrops are also present. These soils generally support rangeland and wildlife habitat (Reckner, 1998). From the east edge of the Laramie Mountains to Ault, Colorado, soils are characterized as alluvial fans, knolls, hills and ridges, and soil depths range from very shallow to very deep, nearly level to steep. Small rock outcrops are present. These soils generally support rangeland and wildlife habitat. A few areas are used as non-irrigated cropland. Wheat, barley, and sorghum are the main crops (Stevenson 2001, Crabb 1982).

3.3.1.3 Paleontology

Under federal legislation, (43 CFR 8365), only vertebrate fossils found on federal land are protected against collection and destruction, and vertebrate fossils are possible over much of the route. Plant fossils and invertebrate fossils are not specifically protected, but may be locally abundant in all but the Precambrian Era igneous and metamorphic rock formations.

The most significant identified areas of fossil-bearing formations are along the CH-MM route from MPs CH-MM 6.5 to 32, although formations with paleontological resource potential are crossed intermittently to MP 67.5. Major fossil-bearing formations encountered between MPs 6.5 and 32 include Cloverly (Jurassic), Sundance (Jurassic), Morrison (Jurassic), and Hanna (Paleocene). The route reportedly passes north of the “Break Fault System,” which has been the source for major dinosaur fossil discoveries (Lillegraven 1996). At MP 53 the route passes within 7 miles of the Como Bluffs “Dinosaur Graveyard” resource site, which is situated in the Jurassic Period Morrison Formation. The CH-MM ROW does not directly cross this formation, however, but rather crosses formations composed of marine sediments, which are very dissimilar to the geology at Como Bluffs. In the vicinity of MP CH-MM 67.0 to 67.5, the Medicine Bow Formation has the potential to contain dinosaur bone fragments and Late Cretaceous Period mammals (Lillegraven 1996, Gill 1970, Glass 1986).

Cretaceous Period formations east of Laramie, including Steele, Niobrara, and Almond Formations are marine deposits, and vertebrate fossil finds are considered unlikely. The Precambrian Era Sherman encountered in the Laramie Mountains is also an unlikely location for significant fossils. Within the Denver Basin, Tertiary Period formations and the Cretaceous Period Laramie Formation are known to produce mammalian, invertebrate, and plant fossils.

However, these areas are considered to be of low to moderate paleontologic interest (CDOT 2004).

3.3.1.4 Geologic Hazards

Seismic activity in the project area has been historically low. A number of mapped epicenters have been recorded along the project area between MPs CH-MM 8.0 to 29.0. Three events were between II and IV on the Modified Mercalli Intensity Scale of 1931 (MM), and three events between 2.9 and 3.2 on the Richter scale. These events occurred between 1938 and 1993. Three events occurred to the southeast of the project area from MP CH-MM 98.0 to 104.0. All of theses events were recorded as IV on the MM and occurred between 1898 and 1935 (Case 1990). Numerous small events of magnitude II to IV MM were noted in the Brighton, Colorado, area that is approximately 50 miles south of the project termination point in Ault (Kirkham, 2000).

No geologic hazards have been documented for the project area, although numerous steep slopes are present. The Geological Survey of Wyoming has mapped geologic hazards including liquefaction, active wind blown sand, and landslides. No large-scale liquefaction, wind blown sand, or landslide areas have been recorded within the Wyoming part of the project area (Case, J.C. et al 1991; Case, Boyd 1987; Case, J.C. et al 1986). Similarly, no specific geologic hazards have been documented for the Colorado portion of the project area. Based on a literature review of the geography and geology of the project area, there are no known large-scale liquefaction prone areas, active wind blown sand areas or landslide areas.

3.3.2 Environmental Consequences and Mitigation Practices

3.3.2.1 Significance Criteria

Impacts to surface soils would be significant if:

- new construction or maintenance activities for the proposed action or alternatives caused major accelerated soil erosion, due to either project earthwork or the destruction of protective vegetation. Significant soils impacts could occur if uncontrolled or unmitigated erosion causes sediment loading of streams, which results in violations of water quality standards or impacts to existing water uses. Airborne dust resulting from increased erosion would be significant if it resulted in violations of air quality regulations.

Impacts to paleontological resources would be significant if:

- fossil deposits are destroyed without being properly excavated (other than invertebrate and plant fossils which are not protected by law).

Impacts to geology would be significant is:

- the proposed action or alternatives resulted in the loss of access to recoverable mineral, petroleum, or other geological resources.

3.3.2.2 Impacts of the Proposed Project

The proposed project would result in surficial soil disturbances at localized areas within Western's existing ROW. Short-term impacts on soils would be surface disturbances resulting in the loss of topsoil and vegetative cover leading to wind and water erosion. Long-term impacts would be the potential further loss of topsoil and long-term negative impacts to vegetation resulting in wind and water erosion. Specific areas where soil disturbances would occur encompass: all structure sites, including where existing structures would be dismantled and new structures installed; at the proposed new Snowy Range substation site, where grading and soil movement would be necessary for the substation construction; and where Western's existing access roads would be improved with minor re-grading and water bars to stabilize current soil erosion processes. Impacts related to soil erosion would predominantly be very minor and below a level of significance, since limited ground disturbances would occur at structure sites and at the proposed substation site and erosion control measures would be implemented. Some beneficial effects would also result where existing access roads would be improved to stabilize on-going erosion processes. With implementation of Western's Standard Construction and Mitigation Practices, all soils impacts would be minor and primarily short-term in duration.

The proposed project could also result in the inadvertent destruction of fossils. Fossil deposits may be encountered along the existing ROW, particularly where formations with known paleontological resources are crossed. Short-term and long-term impacts include inadvertent disturbance or destruction of fossil deposits. Potential project-related effects could also include the discovery of new paleontological sites during excavations or due to construction related erosion.

Transmission System – CH-MM Transmission Line Rebuild

Soils – The CH-MM ROW predominantly crosses dry mountains, hills and valleys. Approximately 195 surface water bodies, including rivers, creeks, tributaries, canals and ditches are also crossed by the ROW. Potential impacts to water resources and water quality are discussed in Section 3.4 of the EA. Direct impacts to soils could result from the disturbance during construction of an estimated 414 acres of land that could cause increased erosion and sedimentation in local drainages and waterways along the proposed ROW. Vehicle traffic and vegetation clearing would occur mostly in previously disturbed areas and no new access roads would be constructed. During final design and construction, Western would implement Standard Construction and Mitigation Practices 3, 4, 5, 6, 7, 8 (Table 2.1-3), to insure minimum impacts from soil erosion would occur. These measures include, among others, provisions to place new structures away from drainages and surface water, as well as install water bars and similar erosion control measures in areas where soil erosion could result due to disturbances of steep slopes and near drainage crossings. With implementation of these measures, impacts resulting from soil disturbances along the ROW would not be significant.

Paleontology – Although impacts to fossil resources are possible along much of the route, certain sections of the route cross Jurassic and Cretaceous Period sedimentary rock formations that have produced significant dinosaur fossils. The remainder of the route crosses formations of marine sediments, Precambrian Period granite, and Tertiary Period sediments. Marine sediments may have locally abundant fossils, however these fossils are not generally protected by law and are seldom of significant scientific interest. Tertiary Period formations may have locally abundant fossils including plants and mammals, but these fossils are generally of lesser interest to scientists. Granitic formations contain few if any significant fossil deposits and are normally of little paleontologic interest. Appendix B, Table 3.3 provides a detailed description of the geologic formations encountered along the route and the anticipated paleontological significance of each formation. Impacts are not anticipated to be significant because augering for new structures would be relatively shallow and would not affect geological or associated paleontological resources. In addition, Western's Standard Construction and Special Mitigation Practice 32

(Table 2.1-3) would be implemented to insure that impacts to paleontological resources would be mitigated to a level below significant, if encountered during project construction.

Geology – No impacts to geologic resources would occur from the proposed project. No mineral resource development would be impeded or restricted by construction of the proposed project. In addition, no seismic activity or other geologic hazards are likely to occur along the transmission line ROW. Impacts to geology would not be significant.

Transmission System – AU-CH Transmission Line Rebuild

Soils – Soil impacts along the AU-CH Transmission Line Rebuild would be similar to those described above for the CH-MM transmission line rebuild project. Along the AU-CH Transmission Line Rebuild, direct impacts could result from the disturbance during construction of an estimated 87 acres of land that could cause erosion and sedimentation along the proposed ROW. This rebuild project would cross an estimated 37 surface waters, including creeks, tributaries and ditches.

Impacts to soils would be minor, and less than significant, for the AU-CH Transmission Rebuild Project, with implementation of Western's Standard Construction and Mitigation Practices 3, 4, 5, 6, 7, 8 (Table 2.1-3). The potential for soil impacts is minimal since no areas of steep slopes would be crossed, and no new access roads would be constructed. Impacts to soils would therefore result from vegetation clearing at structure sites and would be limited to areas within Western's existing ROW

Paleontology – Between the Cheyenne and the Ault Substation, Western's existing transmission line and ROW crosses Tertiary and Cretaceous period formations. Tertiary Period fossils may include plants and mammals that are relatively common and are frequently of only minor scientific interest. The Cretaceous period Laramie Formation is described as having locally abundant plant fossils, but few vertebrate fossils. The Laramie Formation is considered to have moderate paleontologic potential (CDOT 2004). Significant impacts to paleontologic resources are not anticipated because augering for new structures would be relatively shallow and not affect geological resources. In addition, Western's Standard Construction and Special Mitigation Practice 32 (Table 2.1-3) would be implemented to insure that paleontological impacts would not be significant.

Geology – No geologic impacts or geologic hazards are anticipated for the AU-CH Transmission Line Rebuild.

Substations – Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

Soils – The construction of the new Snowy Range Substation would result in the permanent surface disturbance of approximately 16 acres. The site is relatively flat, and no adverse soil erosion impacts are anticipated off site, with implementation of Western's Standard Construction Practices and Mitigation Practices 3, 4, 5, 6, 7, 8 (Table 2.1-3). Modifications to the existing Miracle Mile, Cheyenne, and Ault Substations would occur within the developed substation sites. Consequently, there would be only minor, and less than significant, disturbances or impacts to surface soils. These impacts would occur solely where soils are disturbed for foundation excavations.

Paleontology – The proposed Snowy Range Substation near MP 100 is within the Triassic Period Chugwater Formation. This formation is not recognized as a significant vertebrate fossil-bearing formation and no adverse impacts would occur with implementation of Special Mitigation Measure 32 (Table 2.1-3).

On-site modifications to the existing Miracle Mile, Cheyenne, and Ault Substations would not create ground disturbances; therefore, no impacts to paleontological resources would result.

Geology – No geologic impacts or geologic hazards are anticipated.

3.3.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

The CH-MM Alternative Route 1 Part A and Part B would build the proposed CH-MM 230-kV transmission line along the existing HJ-MM 115-kV line ROW (Part A). The HJ-MM 115-kV transmission line would be rebuilt along the existing CH-MM ROW (Part B). The same geologic formations are crossed by both Part A and Part B. Consequently, the potential impacts to soil and paleontologic resources of this alternative would be the same, or similar to the proposed project. Fourteen surface water bodies are crossed by CH-MM Alternative Route 1. Potential impacts to water resources and water quality from possible surface water runoff and increased sedimentation are discussed in Section 3.4. With implementation of Western's Standard Construction Practices and Mitigation Practices 3, 4, 5, 6, 7, 8, and Special Measure 32 (Table 2.1-3), minimum impacts from soil erosion or paleontological resource impacts would occur. No geologic impacts or geologic hazards are anticipated.

AU-CH Alternative Route 2

The AU-CH Alternative Route 2 is a minor realignment that would cross the same formations as the existing AU-CH ROW. Potential impacts to soil and paleontologic resources would, therefore, be the same as the proposed project. Western's Standard Construction Practices and Mitigation Practices 3, 4, 5, 6, 7, 8, and 32 (Table 2.1-3) would be implemented to insure minimum impacts from soil erosion or paleontological resource impacts would occur. No geologic impacts or geologic hazards are anticipated.

No Action Alternative

The No Action Alternative would avoid the short-term construction related impacts resulting from soil disturbances, and potential increases in soil erosion. This alternative would also avoid the potential for direct impacts to paleontological resources. Long-term, however, the No Action Alternative would result in increasing maintenance of the existing 115-kV line, including more frequent use of existing access roads, and soil disturbances where individual structures may need to be repaired or replaced. This on-going and increased activity by service and inspection vehicles would have the potential to increase soil erosion, especially where access roads are currently deteriorating from on-going erosion processes.

3.4 Water Resources

Federal regulations that ensure the protection of water resources include the Safe Drinking Water Act (SDWA) and the Clean Water Act (CWA). The SDWA regulates the protection of drinking water resources and pollution prevention strategies. The CWA regulates pollutant discharge into source waters. In accordance with the CWA, the EPA has established primary and secondary standards to guarantee quality drinking water free of contaminants. Through Section 404 of the CWA, the Army Corps of Engineers regulates the discharge of dredged and fill material into waters of the U.S. Surface water resources are discussed in this section. Floodplain and wetlands are critical areas of water resource management and are subsequently discussed in Section 3.5.

3.4.1 Affected Environment

The project area encompasses the proposed project ROW, substation sites, access roads, and adjacent areas that may be affected by construction activities (e.g., resulting from increased sedimentation). The project area is within the North Platte and South Platte River watersheds. The proposed transmission line rebuild ROW crosses 232 surface waters; 195 surface water bodies occur along the CH-MM ROW; the remaining 37 occur along the AU-CH ROW. Most are unnamed ephemeral channels that flow in response to snow melt or local precipitation events, or are perennial and intermittent streams and playas. Appendix B, Table 3.4 identifies all surface waters crossed by the project rebuild ROW. The largest surface waters crossed are the Medicine Bow and Laramie Rivers. Several unnamed channels are tributaries to perennial waters (e.g., Lone Tree, Spring, and Owl Creeks).

Water quality along the Wyoming portion of the transmission line is good to poor. The Laramie and Medicine Bow Rivers are Class 2AB waters that support all beneficial uses, including drinking water, game fish, non-game fish, fish consumption, other aquatic life, recreation, wildlife, agriculture, industry, and scenic values (Wyoming Department of Environmental Quality, Water Quality Division [WDEQ/WQD], 2001). Additional Class 2AB waters include the Little Laramie and Little Medicine Bow Rivers; Saylor, Austin, Troublesome, Difficulty, Rock, and Foote Creeks; and Allen and East Allen Lakes. Most other creeks and lakes near the ROW (e.g., Coal Creek, Corral Creek, and Dry Creek) are Class 2C or 3B. Class 2C waters support all of the above-listed uses except drinking water and game fish, whereas Class 3B waters support all uses except drinking water, game fish, non-game fish, and fish consumption.

No specific surface water quality data are available for the Colorado portion of the transmission line ROW. Surface water use in the northern portions of the ROW is for livestock (e.g., stockponds) and wildlife use. In the southern portion of the Colorado ROW, surface waters are also used to irrigate cropland.

No surface waters occur at or adjacent to the proposed Snowy Range substation location.

The project area overlies the Shirley, Hanna, and Laramie Basins in Wyoming (Richter 1981), the High Plains aquifer in the Cheyenne vicinity, and the South Platte River Basin in Colorado (Topper et al. 2003). Ground water in the Shirley, Hanna, and Laramie Basins occurs in local deposits of saturated alluvium, plus six major aquifers: the Tertiary, Mesaverde, Frontier, Cloverly, Sundance, and Casper-Tensleep aquifers (Richter 1981). Ground water in the High Plains aquifer occurs in the unconsolidated to semi-consolidated sand, gravels, clays, and silts of the Ogallala formation, as well as alluvial, valley-fill, dune, and loess deposits (Topper et al. 2003). In the South Platte River Basin, ground water occurs in a surficial aquifer composed on alluvial and aeolian deposits; these are underlain by the Dakota-Cheyenne aquifer (Topper et al 2003).

3.4.2 Environmental Consequences and Mitigation Practices

3.4.2.1 Significance Criteria

Impacts to surface water would be significant if:

- the quantity and quality of discharges from streams are modified by instream construction or accidental contamination (e.g., oil or gasoline spills) to the extent that water used by established users (e.g., public water supplies and irrigation) is measurably reduced, aquatic habitats support reduced fish populations, or the water quality is in violation of state water quality criteria;
- sedimentation downstream of transmission line crossings affects water quality or the operation of irrigation water control structures.

Impacts to ground water would be significant if:

- construction of foundations for the transmission line structures impacts the quantity and quality of ground water used by established users (e.g. public water supplies and irrigation); the water quality is measurably reduced, or the water quality is in violation of state water quality criteria.

3.4.2.2 Impacts of the Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

Surface water use is not proposed, so no impacts to surface water quantity are anticipated. The project is not subject to National Primary or Secondary Drinking Water Regulations because these standards apply only to public water systems.

The CH-MM ROW traverses 195 surface water bodies (see Appendix B, Table 3.4) including stream channels and playas. All channels and playas would be spanned (i.e., structures would not be placed in the waterbody), and thus no direct impacts to surface waters would occur. Indirect impacts could result from the disturbance during construction of an estimated 414 acres of land that could cause erosion and sedimentation in surface waters along the proposed ROW, thereby adversely affecting surface water quality. However, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time. Some of this disturbance would likely occur in surface water floodplains (see Section 3.5.2) where potential for impacts to surface waters would be greater, although Western would implement more stringent erosion control measures to minimize impacts. Vehicle traffic along the ROW and on access roads would occasionally drive through ephemeral stream channels, which could result in stream sedimentation if runoff was to occur prior to stabilization in these areas. Accidental spills of petroleum products, hydraulic fluids, or antifreeze could also adversely impact surface water quality, although the potential for such spills is unlikely because refueling would not occur within 500 feet of any surface waterbody, and Western would implement a Spill Response Plan to clean up any spills and minimize potential for water pollution. Because surface-disturbing activities would not occur in stream channels or playas, because construction in any one area would be of short duration using best management practices to minimize erosion and sedimentation, and because spills would be cleaned up immediately, impacts to surface water quality would not be significant. After construction, all except 0.9 acres would be stabilized and reclaimed and only limited traffic would occur on the ROW, so potential for surface water quality impacts during operation would be negligible (i.e., not significant).

If any excavation is to occur within or adjacent to a surface waterbody, Western would obtain the necessary permits from the U.S. Army Corps of Engineers, and would implement mitigation practices (see Table 2.1-3) to minimize erosion and sedimentation within the waterbody and to restore it to pre-existing conditions once construction is complete. Implementation of Western's Standard Construction and Mitigation Practices 10, 11, 12, and 13 (Table 2.1-3) would minimize any impacts to surface water.

The project would result in 0.9 acre of disturbance and thus would not require compliance with National Pollutant Discharge Elimination System (NPDES) along the transmission line route since the long-term disturbance is less than 5 acres.

The project would not impact any municipal drinking water supplies. Impacts to ground water would be limited to aquifers within about 10 feet of the surface (i.e., the depth of the structure holes, primarily surficial alluvial aquifers located near major streams (e.g. the Medicine Bow River. The aquifers to be impacted include the Teritary and High Plains alluvial aquifers. In some areas, ground water may be encountered during excavation and dewatering of the excavated area may be required. However, any water removed from the hole would be discharged back to the surface and would likely infiltrate back into the alluvial aquifer, resulting in no net loss of ground water from the impacted aquifer or any connected aquifers. Furthermore, since excavation and structure erection occur relatively quickly, any dewatering operations would be of short duration and thus temporarily removing small volumes of ground water. Deeper aquifers including the Mesaverde, Frontier, Cloverly, Sundance, and the Casper-Tensleep aquifers would not be impacted by the project.

Accidental spills of petroleum products, hydraulic fluids, or antifreeze could also adversely impact ground water quality, although the potential for such spills is unlikely because refueling would not occur within 500 feet of any surface waterbody, and Western would implement a Spill Response Plan to clean up any spills and minimize potential for water pollution. Impacts to ground water would not be significant.

Transmission System - AU-CH Transmission Line Rebuild

Surface water use is not proposed, so no impacts to surface water quantity would occur.

Impacts from the construction of the AU-CH portion of the project would be similar to those described for the CH-MM portion, except that the AU-CH portion traverses only 37 surface water bodies, and only 87 acres would be disturbed. However, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time. Additionally, the AU-CH portion crosses irrigated cropland, but the minor amount of potential sedimentation would not be expected to adversely affect the operation of irrigation water control structures. Potential construction impacts would be as described for the CH-MM portion (i.e., minor and of short duration). After construction, all except 0.1 acres occupied by structures would be stabilized and reclaimed and limited traffic would occur on the ROW; therefore, potential impacts to surface waters during operations would be negligible. Implementation of Western's Standard Construction and Mitigation Practices 10, 11, 12, and 13 (Table 2.1-3) would minimize any impacts to surface water below a level of significance.

Impacts to ground water due to construction of the AU-CH portion of the project would be similar to those described for the CH-MM portion, except that the South Platte River Basin and High Plains alluvial aquifers may be encountered, but no significant impacts to ground water would occur. No impacts to the Dakota-Cheyenne aquifer would occur.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

Surface water use is not proposed. Consequently, no impacts to surface water quantity would occur.

The proposed Snowy Range substation site is located on uplands, so no direct impacts to surface waters would occur. Indirect impacts from substation construction could include erosion and sedimentation in downstream waters. The project would result in about 16 acres of long-term disturbance at the Snowy Range substation site and thus would require compliance with National Pollutant Discharge Elimination System (NPDES) requirements. The construction constractor would develop and implement a Storm Water Pollution Prevention plan at the substation construction site to control storm water runoff and minimize the potential for project-related sedimentation in surface waters. Impacts may also occur from potential spills from construction vehicles or from substation equipment (e.g., transformers). The proposed Snowy Range Substation would be located approximately 0.5 mi from the nearest surface water, so impacts from spills are unlikely, and Western would implement a Spill Response Plan to minimize impacts of any spills. Impacts would not be significant.

Work at the Miracle Mile, Cheyenne, and Ault substations would occur inside the existing fenced substation, so NPDES requirements do not apply. The Miracle Mile and Ault substations are approximately 660 ft from the nearest surface waterbody. The Cheyenne substation is more than 0.5 mi from the nearest surface waterbody. Western would implement a Spill Response Plan to minimize impacts of any spills. Impacts would not be significant. Substations would be accessed using existing gravel or paved roads, so surface water would not be affected by substation operation.

3.4.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Impacts to surface waters under CH-MM Alternative Route 1 would be similar to those described for the proposed project and are anticipated to be minor and of short duration. CH-MM Alternative Route 1 crosses a total of 14 surface waterbodies, whereas the proposed route crosses seven. The increase in the total number of surface water crossings, compared to the proposed project, increases the potential for sedimentation in surface waters during construction. However, since the project would be constructed in phases, Part A in 2007, and Part B in 2008, potential impacts would be minimized.

Construction of CH-MM Alternative Route 1, Part A across the Laramie River floodplain would require 2 structures in the floodplain. Although this would increase potential impacts to surface waters, stream erosion control measures would be implemented to minimize impacts. Mitigation paractices 10, 11, 12, and 13 (Table 2.1-3) would minimize impacts to surface waters along CH-MM Alternative Route 1, therefore impacts to surface waters would not be significant.

AU-CH Alternative Route 2

Impacts to surface waters under AU-CH Alternative Route 2 would be similar to those described for the proposed project and would be minor and of short duration. No surface waters are crossed by Alternative Route 2, and none occur along the proposed route at this location.

No Action Alternative

No impacts to surface water would occur under the No Action Alternative.

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3.5 Floodplains and Wetlands

Floodplains are areas where water overflows onto an area of usually dry land. Floodplains typically occur adjacent to existing waterways, and help moderate flood flow, recharge groundwater, spread silt to replenish soils, and provide habitat for a number of plant and animal species. Executive Order 11988, Floodplain Management, requires federal agencies to insure its actions minimize the impacts of floods on human health and safety and to restore the natural and beneficial values of floodplains. DOE regulations found at 10 CFR part 1022 require public notification of floodplain involvement. Western published a notification of floodplain/wetland involvement in the Federal Register on April 28, 2003.

Wetlands are defined under the CWA as areas that are inundated with surface or groundwater to the extent that they sufficiently and regularly support a prevalence of aquatic or semi-aquatic vegetation. Wetlands are characterized by distinct soil types as well as by unique plant and wildlife communities (EPA 2001c). Wetlands enhance water quality and supply by retaining and removing sediment; and provide flood storage, groundwater recharge and discharge, shoreline anchoring, and unique habitat for plants and wildlife. Section 404 of the CWA protects wetlands by giving regulatory and permitting authority of wetlands to USACE. Executive Order 11990 requires federal agencies to minimize the destruction or modification of wetlands and enhance the natural and beneficial values of them. DOE regulations found at 10 CFR 1022 require public notification of wetland involvement.

3.5.1 Affected Environment

The project area for wetlands and floodplains includes the existing and proposed expansion of the project ROW, access roads, and substation sites. Most of the 232 surface waters identified in the project area (see Appendix B, Table 3.4) are ephemeral channels that flow only in response to snowmelt or local storm events. The ephemeral channels may be steep-sided and incised or flat and shallow, but they are characteristically narrow, are within uplands, and lack floodplains.

The Federal Emergency Management Agency (FEMA) maps show floodplains at 16 locations on the CH-MM portion of the transmission line ROW, and at two locations on the AU-CH portion (Appendix B, Table 3.4). The largest floodplains are at the Little Laramie River/Brown's Creek confluence northwest of Laramie (MP 87, approximately 0.5 mile wide), and the Rock Creek/Three Mile Creek/Coal Bank Creek (MP 63, approximately 0.75 mile wide) confluence southwest of Rock River.

An estimated 54 potential wetlands are intersected by the transmission line ROW, 51 in the CH-MM ROW and three in the AU-CH ROW. Most are stream channels or playas classified as “palustrine emergent” or “riverine unconsolidated bottom” (National Wetland Inventory maps); however, shrub/scrub wetlands are present at several locations (e.g., along Rock and Three Mile Creeks [MP 63]), as are other wetland types.

No floodplains or wetlands occur at or adjacent to the proposed Snowy Range substation location.

3.5.2 Environmental Consequences and Mitigation Practices

3.5.2.1 Significance Criteria

Impacts to floodplains and wetlands would be significant if:

- a flood event caused damage to the transmission line structures, or the construction of the transmission line structures in a floodplain would increase the potential for flooding or violate applicable floodplain protection standards;
- construction resulted in a wetland fill impact of 0.5 acre or greater thereby requiring a Section 404 Individual Permit application to the U.S. Army Corps of Engineers.

3.5.2.2 Impacts of the Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

Floodplains and wetlands would be spanned, where possible (i.e., structures would not be placed in these areas), and thus direct impacts to floodplains and wetlands would be low. The floodplains at Rock Creek/Three Mile Creek/Coal Bank Creek (at MP 63, approximately 0.75 mile wide) (Figure 3.5-1) and the Little Laramie River (at MP 87, approximately 0.5 mile wide) (Figure 3.5-2) cannot be spanned because of the width, and thus some direct disturbance in these floodplains and potential wetlands would be necessary. Disturbance would be limited to the installation of up to two structures (about 0.3 acre of construction-related disturbance) and vehicle traffic. Long-term disturbance would be limited to the footprint of up to two structures (<0.001 acre). Structures have existed in these floodplains since the 1930s and have not been damaged by floods, so potential for the new structures to be damaged by floods is low to none. There is no potential for structures to cause flooding. If any excavation is to occur within a wetland, Western would obtain the necessary permits from the U.S. Army Corps of Engineers and would implement Western's Standard Construction and Mitigation Practices 10, 11, 12, 13, 19, and 27 (Table 2.1-3) to minimize erosion and sedimentation within the waterbody and to restore it to preexisting conditions once construction is complete, so no long-term loss of wetland vegetation would occur and impacts would not be significant.

Indirect impacts could occur as a result of the disturbance of an estimated 414 acres of adjacent land, which could cause erosion and sedimentation in floodplains and wetlands along the proposed ROW, thereby adversely affecting floodplains and wetlands. However, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time. Accidental spills of petroleum products, hydraulic fluids, or antifreeze could also adversely impact floodplains and/or wetlands, although the potential for such spills is unlikely because refueling would not occur within 500 ft of any floodplain or wetland, and Western would implement a Spill Response Plan to clean up any spills and minimize potential for water pollution. Existing structures would be removed from some of the floodplains that would be crossed (e.g., the Laramie and Little Laramie Rivers and numerous creeks), resulting in disturbance just at the base of each structure. However, because floodplains and wetlands would be avoided where feasible, because construction in any one area would be of short duration using best management practices to minimize erosion and sedimentation, and because spills would be cleaned up immediately, impacts to floodplains and wetlands during construction would be minor and of short duration. All disturbed areas would be reclaimed, except for 0.9 acres occupied by structures, and limited traffic would occur on the ROW, so impacts to floodplains and wetlands during operation would be negligible. Implementation of Western's Standard Construction and Mitigation Practices 10, 11, 12, 13, 19, and 27 (Table 2.1-3) would minimize impacts to floodplains and wetlands. Impacts to floodplains and wetlands would not be significant.

Transmission System - AU-CH Transmission Line Rebuild

Impacts to floodplains and wetlands along the AU-CH portion of the project would be similar to those described for the proposed project, except that the two floodplains and three potential wetlands that occur on the AU-CH ROW would be spanned, so no direct impacts would occur.

Indirect impacts would be limited to potential for sedimentation from 87 acres of surface disturbance nearby or potential spills. However, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time. As with the proposed project, these construction-related impacts are expected to be minor and temporary and thus would not be significant. Since there would be only 0.1 acre of life-of-project disturbance, and only limited traffic would occur on the ROW, operational impacts would be negligible.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

The Snowy Range substation would be located on uplands, and since no floodplains or wetland occur near the site, no direct or indirect impacts would occur. The proposed Snowy Range Substation would be located approximately 0.5 mi from the nearest surface water, so impacts from spills are unlikely, and Western would implement a Spill Response Plan to minimize impacts of any spills. Impacts would not be significant.

Work at the Miracle Mile, Cheyenne, and Ault substations would occur inside the existing fenced substation. The Miracle Mile and Ault substations are approximately 660 feet from the nearest surface waterbody. The Cheyenne substation is more than 0.5 mi from the nearest surface waterbody. Western would implement a Spill Response Plan to minimize impacts of any spills. Impacts to floodplains and wetlands would not be significant. The substations would be accessed by existing gravel or paved roads, and thus no operational impacts would occur.

3.5.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

CH-MM Alternative Route 1, Part A would cross one floodplain, the Laramie River floodplain, at a point where it is much wider (about 0.5 mi) than the crossing by CH-MM Alternative Route 1, Part B (<0.25 mi) (see Figure 3.5-3). As with the Rock Creek/Three Mile Creek/Coal Bank Creek and Little Laramie River Floodplains, Western may have to install up to two additional structures in the Laramie River floodplain along Part A, for which impacts would be similar to those described for the proposed project (about 0.3 acres of short-term construction related disturbance). Long-term disturbance would be limited to the footprint of the two structures (0.001 acres).

The floodplain along CH-MM Alternative Route 1, Part A may contain wetlands; a delineation may be required if construction is to occur within this floodplain. If wetlands are identified, Western would obtain authorization from the U.S. Army Corps of Engineers for all disturbances and would develop and implement a mitigation plan as required by Section 404 of the Clean Water Act. Western's Standard Construction and Mitigation Practices 10, 11, 12, 13, 19, and 27 (Table 2.1-3) would be implemented within the Laramie River Floodplain. Impacts to these floodplains/potential wetlands would not be significant.

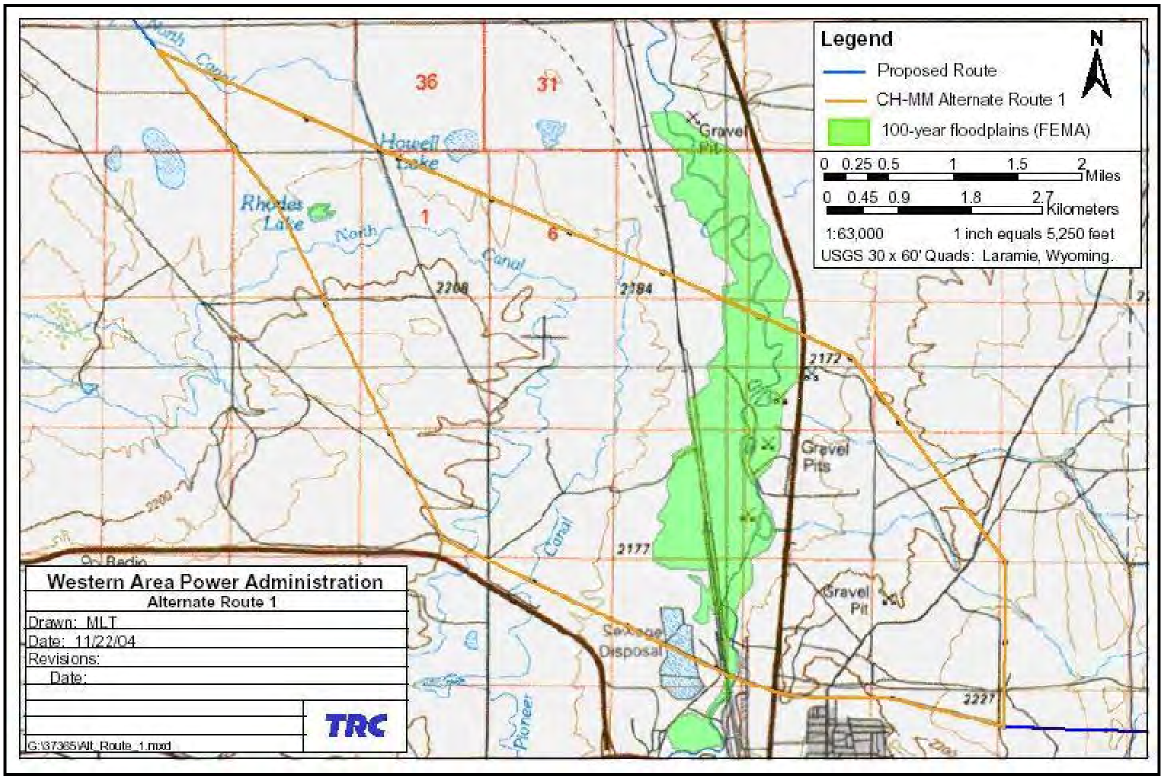

Figure 3.5-3 CH-MM Alternative Route 1 Near the 100-year Floodplains

AU-CH Alternative Route 2

Alternative Route 2 does not cross any floodplains or wetlands and thus would not impact these resources. No significant impacts would occur.

No Action Alternative

Under the Action Alternative, no impacts to floodplains or wetlands would occur.

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3.6 Vegetation

3.6.1 Affected Environment

The project area for vegetation includes the existing and proposed expansion of the project ROW, access roads, and substation sites.

The principal vegetation types along the ROW are mixed grass prairie, shortgrass prairie, Wyoming big sagebrush steppe, and dryland and irrigated cropland (U.S. Geological Survey [USGS], 1996; Colorado State University [CSU], 2003).

Mixed grass prairie, which is present along the route in Wyoming and Colorado, is comprised of bunchgrasses, sod-forming grasses, and a variety of forbs and small shrubs. Common species include needle-and-thread grass, western wheatgrass, blue grama, Sandberg bluegrass, threadleaf sedge, needleleaf sedge, Junegrass, Indian ricegrass, prickly pear cactus, scarlet globemallow, fringed sagewort, Hood's phlox, milkvetch, and locoweed (Knight, 1994). Depending on location, other species such as bluebunch wheatgrass, little bluestem, sideoats grama, prairie sandreed, sand dropseed, alkali sacaton, fourwing saltbush, greasewood, and inland saltgrass may be present.

Shortgrass prairie, present along the route in Colorado, is typically dominated by blue grama and buffalograss, which comprise 70-90% of vegetative composition by weight. During droughts, buffalograss tends to replace blue grama (Holechek et al., 1989). Winterfat is a common shrub, and species that occur in mixed grass prairie (as listed above) also occur in lesser amounts in shortgrass prairie.

Wyoming big sagebrush steppe, which occurs along the route in Wyoming, is dominated by Wyoming big sagebrush, either in dense homogeneous stands or in open shrublands interspersed with grasses and forbs. Associated species typically include western wheatgrass, Junegrass, needle-and-thread grass, Sandberg bluegrass, prickly pear cactus, scarlet globemallow, and rabbitbrush. Gardner's sagebrush, silver sagebrush, basin big sagebrush, and greasewood may also be present, depending on landscape position.

Dryland and irrigated cropland dominates the southernmost 17 miles of the transmission line ROW in Colorado. Crops include corn, wheat, and hay.

Other vegetation types occurring along the route include aspen woodland (at about MPs 105-107 between Laramie and Cheyenne), basin rock and soil (MPs 93 and 95 in the Laramie Basin and MP 121 on the eastern foothills of the Laramie Range), desert shrub (MPs 24, 25, 40, and 41 in the northwestern portion of the ROW), greasewood (scattered along the ROW), irrigated crops (at major drainages and irrigation ditches), lodgepole pine (MPs 130 and 131 west of Cheyenne), xeric upland shrub (scattered along the ROW), dryland crop (MPs 145 and 146 southwest of Cheyenne), forest riparian (MPs 119, 122, 127, and 128 along Crow and Lodgepole Creeks and their tributaries), and grass wetland (MPs 51 and 52 at Horne Lake) (USGS, 1996).

Vegetation at the proposed Snowy Range substation location is shortgrass prairie.

3.6.2 Environmental Consequences and Mitigation Practices

3.6.2.1 Significance Criteria

Impacts to vegetation would be significant if:

- construction or operation results in a loss of or substantial impact to a CNHP designated Conservation Area;
- construction or operation results in the establishment of noxious weeds that inhibit or reduce agricultural productivity for a landowner.

3.6.2.2 Impacts of the Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

As part of the proposed project, Western would implement their Standard Construction and Mitigation Practices 3, 4, 5, 6, 7, 8, and 24 (Table 2.1-3), which would minimize the potential for adverse impacts to vegetation to less than significant levels. In addition, riparian areas located along the ROW would be spanned and physical disturbance to riparian vegetation would be avoided (Standard Practice 19). Equipment and vehicles would not cross riparian areas on the ROW during construction and operation activities. Existing bridges or fords would be used to access the ROW on either side of riparian areas.

The CH-MM portion of the project would result in the initial direct disturbance of 414 acres (Table 2.1-2) of native vegetation, mostly in mixed grass prairie, shortgrass prairie, and Wyoming big sagebrush steppe. Tree removal for electrical clearances is not anticipated. However, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time. Long-term disturbance would be about 0.9 acres. Disturbance of vegetation in rangeland areas would not reduce forage production or grazing capacity. In addition, because the overall disturbance area would be small, the project would not impact vegetative genetic or species diversity. All areas disturbed during construction that are not required for operation and maintenance would be reclaimed and left in a condition to facilitate revegetation, so impacts to vegetation would not be significant.

Since riparian areas would be avoided where possible, impacts to riparian areas are expected to be low. Small portions of the riparian areas adjacent to Rock Creek/Three Mile Creek/Coal Bank Creek and the Little Laramie River may have to be disturbed because the floodplains are 0.5 mile or more wide, but the estimated disturbance in these riparian areas is about 0.3 acre. Long-term disturbance to all vegetation would be about 0.9 acres, and long-term disturbance in riparian areas would be less than 0.001 acre (about the amount of land occupied by four transmission line structures), so impacts to riparian vegetation would not be significant.

Surface disturbance may result in the introduction and/or spread of weeds. Weeds may be introduced or may spread from one location to another on equipment, or weeds may opportunistically invade disturbed areas. Western would minimize the introduction and/or spread of weeds by washing all equipment at a commercial facility prior to the start of construction each year, by avoiding vehicle traffic in known weedy areas, and by rewashing equipment if weeds are encountered prior to moving along the ROW (Table 2.1-3, Mitigation Practice 24). Western would reclaim all disturbed areas as soon as practical after construction each year and would implement a weed control program (in consultation with the BLM and private landowners) if the project causes the spread of weeds.

Transmission System - AU-CH Transmission Line Rebuild

The AU-CH portion of the project would result in the disturbance of 87 acres of vegetation, including native shortgrass prairie and dryland and irrigated cropland (Table 2.1-2). However, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time. Long-term disturbance would be about 0.1 acre. Disturbance of vegetation in rangeland areas would not reduce forage production or grazing capacity. Genetic and species diversity would not be impacted. Agricultural lands would not be taken out of production as a result of transmission line construction. All areas disturbed during construction that are not required for operation and maintenance would be reclaimed using native adapted species or appropriate crop species once construction is complete, so impacts to vegetation would be minor and short-term. As part of the proposed project, Western would implement their Standard Construction and Mitigation Practices 3, 4, 5, 6, 7, 8, and 24 (Table 2.1.3).

Since riparian areas would be avoided, where possible, impacts to riparian areas are expected to be low to none (Table 2.1-3, Mitigation Practice 19). Long-term disturbance to all vegetation would be about 0.1 acre, so impacts to riparian vegetation would not be significant.

Potential for weed invasion/spread would be the same as described for the proposed project, and impacts would be minor and of short duration.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

Construction of the Snowy Range Substation would result in the loss of about 16 acres of shortgrass prairie vegetation. No riparian vegetation would be impacted. Potential for weed invasion would be the same as described for the proposed project. Minor adverse effects to vegetation would result, but Mitigation Practice 24 (Table 2.1-3) would be implemented.

3.6.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Impacts to vegetation under CH-MM Alternative Route 1 would be similar to those described for the proposed project; both routes are primarily in shortgrass prairie vegetation. CH-MM Alternative Route 1 could impact slightly more riparian vegetation at the Laramie River crossing on CH-MM Alternative Route 1, Part A, but this disturbance would be only about 0.3 acre and thus not significant. Potential for weed invasion would be the same as described for the proposed project (Table 2.1-3, Mitigation Practice 24). Impacts under CH-MM Alternative Route 1 are expected to be minor and of short duration.

AU-CH Alternative Route 2

The two deviations that make up Alternative Route 2 would impact the same vegetation type as the proposed project (cropland), and thus impacts would be the same as described for the proposed project. Impacts under Alternative Route 2 are expected to be minor and of short duration.

No Action Alternative

Under the No Action Alternative, no impacts to vegetation would occur.

3.7 Wildlife

3.7.1 Affected Environment

The project area for wildlife includes the existing and proposed expansion of the project ROW, the substation sites, regional settings and associated habitats.

The topography, water resources, and vegetation along the transmission line ROW provide habitat for numerous wildlife species.

3.7.1.1 Big Game

Two big game species, pronghorn antelope and mule deer, are common along the ROW. Elk and white-tailed deer also occur but are less common.

In Wyoming, pronghorn along the ROW belong to the Chalk Bluffs, Iron Mountain, Cooper Lake, and Medicine Bow herds (Wyoming Game and Fish Department [WGFD], 2004a). In Colorado, pronghorn are in Data Analysis Unit-1 (DAU-1), hunt unit 87. Since 1998, pronghorn populations have been consistently above WGFD objectives for the Iron Mountain and Cooper Lake herds and below objectives for the Medicine Bow herd (Table 3.7-1). The population objective for the Chalk Bluffs herd is 450, but this population is not monitored (WGFD, 2004a). The population objective for DAU-1 (in Colorado) is 5,600, and in 2003 the estimated population was below objective at 4,280.

Table 3.7-1. Big Game Herd Units, Population Objectives, and Population Estimates [1]

Species/Herd Unit	Population Objective	Average Population, 1998-2002[2]	2003 Population[2]	Projected 2004 Population[2]
Pronghorn Antelope				
Chalk Bluffs	450	na	na	na
Iron Mountain	13,000	17,433	14,288	14,450
Cooper Lake	3,000	6,166	5,837	6,264
Medicine Bow	60,000	52,105	56,804	56,183
DAU-1	5,600	na	4,280	4,330
Mule Deer				
Goshen Rim	25,000	21,583	20,968	19,820
Iron Mountain	15,000	16,989	19,235	19,100
Sheep Mountain	15,000	11,299	10,885	10,750
Shirley Mountain	10,000	5,616	5,306	5,549
DAU-5	1,500	na	1,480	1,430
Elk				
Iron Mountain	1,800	na	na	na
Snowy Range	6,000	6,401	5,473	5,449
Shirley Mountain	800	899	797	674
White-tailed Deer				
Southeast Wyoming	4,000	na	na	Na

1 WGFD (2003).
2 na = not available.

In Wyoming, approximately 57 miles of the proposed ROW is in pronghorn crucial winter/year-long range, and is scattered throughout the ROW. Winter/year-long range is that in which a portion of the area is used throughout the year but during winter has a significant influx of animals from other seasonal ranges (WGFD, n.d.). Crucial winter range is defined as winter range that has been documented as the determining factor in a population's ability to maintain itself at a desired level over the long-term. In Colorado, the ROW intersects 27.2 miles of pronghorn winter range, 9.2 miles of winter concentration areas, and 22.5 miles of severe winter range. In Colorado, winter range is defined as that part of the overall range where 90% of the individuals are located between the first heavy snowfall and spring green-up during the average five winters out of ten, or for a site-specific period defined by CDOW personnel for that DAU. A winter concentration area is that part of winter range where animal densities are at least 200% greater than surrounding winter range density during the same period used to define winter range in the average five winters out of ten. Severe winter range is that part of the winter range where 90% of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten.

In Wyoming, mule deer along the ROW belong to the Goshen Rim, Iron Mountain, Sheep Mountain, and Shirley Mountain herds (WGFD, 2004a). Since 1998, populations in the Iron Mountain herd unit have been consistently above objective, while populations in the Goshen Rim, Sheep Mountain, and Shirley Mountain herd units have been below objectives (Table 3.7-1). The objective for mule deer in DAU-5 (in Colorado) is 1,500, and in 2003 the estimated population size was 1,480, essentially at objective. In Wyoming, an estimated 24 miles of the ROW are within mule deer crucial winter/year-long range, which is scattered all along the ROW in Wyoming. No mule deer winter range occurs along the ROW in Colorado.

The Iron Mountain, Snowy Range, and Shirley Mountain elk herd units occur along the transmission line in Wyoming. No population estimates are available for the Iron Mountain herd. Through 2002, the Snowy Range herd population has been above objective but declined to below objective in 2003 (Table 3.7-1) (WGFD, 2004a). The Shirley Mountain herd is essentially at objective but is projected to decline to below objective in 2004. In Wyoming, an estimated 8 miles (at MPs 108-116) of the ROW are within elk crucial winter/year-long range. Elk are extremely rare along the ROW in Colorado.

In Wyoming, white-tailed deer may occur in the riparian areas of the Medicine Bow River and its larger tributaries, and these deer are part of the Southeast Wyoming herd unit. The population objective for this herd is 4,000 animals, but no current population data are available. White-tailed deer are rare along the ROW in Colorado. No white-tailed deer crucial winter or winter range occurs along the ROW.

An estimated 12 miles (mostly north of the Medicine Bow River [discontinuously along MPs 16-38] and between Laramie and Cheyenne [MPs 117-119]) of the ROW intersect with overlapping crucial winter/year-long range for pronghorn and mule deer. Less than 1 mile (MP 116) intersects with overlapping mule deer and elk crucial winter/year-long range.

The proposed Snowy Range substation location is yearlong range for pronghorn antelope and mule deer.

3.7.1.2 Other Mammals

Based on range and habitat preference, seven mammalian predator species are likely to occur along the ROW: coyote, raccoon, long-tailed weasel, badger, western spotted skunk, mountain lion, and bobcat (Clark and Stromberg, 1987; WGFD, 2004b).

Also based upon range and habitat information, three lagomorph species, desert cottontail, black-tailed jackrabbit, and white-tailed jackrabbit, would likely occur along the transmission line ROW (Mariah Associates, Inc., 1979; Clark and Stromberg, 1987; USGS, 1996; WGFD, 2004b). Other small mammals present would likely include least chipmunk, Wyoming ground squirrel, thirteen-lined ground squirrel, northern pocket gopher, olive-backed pocket mouse, Ord's kangaroo mouse, deer mouse, northern grasshopper mouse, bushy-tailed woodrat, and vole. Thirty-six white-tailed prairie dog colonies occur on or adjacent to the CH-MM portion of the project. No black- or white-tailed prairie dog colonies occur on the AU-CH portion.

3.7.1.3 Raptors

All raptors and their nests are protected from take or disturbance under the *Migratory Bird Treaty Act* (16 *United States Code* [U.S.C.] 701-715) and *Wyoming Statutes* 23-1-101 and 23-3-108. Certain species are also afforded protection under the *Bald Eagle Protection Act* (16 U.S.C. 668-668d) and the *Endangered Species Act* (ESA) (16 U.S.C. 1531 et seq.).

Raptor species known to occur or to potentially occur in the project area include bald eagle, golden eagle, ferruginous hawk, rough-legged hawk, red-tailed hawk, Swainson's hawk, prairie falcon, peregrine falcon, American kestrel, merlin, Cooper's hawk, sharp-shinned hawk, northern harrier, turkey vulture, osprey, great-horned owl, and burrowing owl (Kingery and Dillon, 1988; WGFD, 2004b). Most breeding species migrate to more hospitable climates during the winter; however, golden eagles and great-horned owls may remain year-round. Rough-legged hawks winter in the region (WGFD,2004b; Dorn and Dorn, 1999).

One hundred eleven raptor nests are known to occur within 0.5 miles of the proposed ROW: 10 golden eagle, 18 red-tailed hawk, 68 ferruginous hawk, one Swainson's hawk, one American kestrel, and 13 unknown (Mariah Associates Inc. n.d.). Additionally, one golden eagle, six ferruginous hawk, five Swainson's hawk, one great-horned owl, one American kestrel, two red-tailed hawk, and 10 unknown nests occur within 1.0 mile. The known raptor nests are distributed along the length of the transmission line. Numerous rock outcrops, cliffs, and trees provide suitable substrates for raptor nesting; consequently, additional nests are likely to occur in the vicinity. The entire line is considered suitable habitat for raptor hunting, foraging, and perching.

A particularly diverse nesting area is found between structures 58-1 and 59-1 (between MP 61.5 and 63), near the town of Rock River, where the CH-MM line crosses Rock Creek. Nests in this area include Golden Eagle (1), red tail (4), swainsons (2), and unknown (4). Also in the same location is a great blue heron rookery.

In January 2006, Western's maintenance crews were performing routine line patrol at the Rock Creek crossing when they discovered the carcass of a Golden Eagle within the ROW of the CH-MM transmission line. The discovery was reported to the USFWS in Cheyenne, and the carcass was retrieved. It is possible that the eagle collided with the overhead ground wires on either the CH-MM line or the HJ-MM line.

No raptor nests are known to occur within 1.0 mile of the proposed Snowy Range substation location.

3.7.1.4 Upland Game Birds

Three species of upland game birds, greater sage-grouse, Columbian sharp-tailed grouse, and mourning dove, may occur along the transmission line ROW.

Greater sage-grouse habitat is scattered along the line from the city of Laramie northwest to the Seminoe Mountains in bottomlands and on uplands. South of Cheyenne, habitat for greater sage-grouse is limited, and no leks are known to occur near the ROW (WGFD, 2004; Dennis, Colorado Division of Wildlife [CDOW], 2004). The area within 0.25 mile of a lek is considered potential breeding habitat; the area within 2.0 miles is considered potential nesting habitat. No leks occur within 0.25 mile of the line. Twenty-two greater sage-grouse leks (strutting and breeding areas) are known to occur within 2.0 miles of the line (Bureau of Land Management [BLM], 2002a). Therefore, none of the line is potential breeding habitat, but 23 miles of the line provide potential nesting habitat. Greater sage-grouse wintering areas are likely to occur in sagebrush vegetation that is widespread along the route (see Section 3.6) (USGS, 1996). No greater sage-grouse leks are known to occur within 2.0 miles of the proposed Snowy Range substation location.

Columbian sharp-tailed grouse inhabit the grasslands that are widespread along the route; however, these grouse would be rare visitors to the ROW in Colorado (Dennis, CDOW, 2004). No known breeding or nesting sites occur within 2.0 miles of the route (BLM, 2002a) in Wyoming.

Mourning dove is a common breeding bird in the region (BLM, 1993) that migrates from the area during the fall and winter. Doves occur in shrub-covered areas along perennial water courses and washes that provide nesting and roosting cover.

3.7.1.5 Other Birds

Numerous other birds likely occur in the project area. The various habitats attract an assemblage of songbirds. Local waters, riparian areas, and wetlands attract numerous species of waterfowl, shorebirds, and waders.

Common non-game birds along the transmission line, based on range and habitat preference (Kingery and Dillon, 1988; USGS, 1996; WGFD,2004b), include common nighthawk, Say's phoebe, western kingbird, horned lark, swallow (violet-green, barn, etc.), black-billed magpie, common raven, rock wren, mountain bluebird, loggerhead shrike, Brewer's sparrow, vesper sparrow, sage sparrow, lark bunting, McCown's longspur, red-winged blackbird, western meadowlark, Brewer's blackbird, common grackle, and brown-headed cowbird.

Several species of wading/shore birds and waterfowl may occur along the rivers and creeks and around small perennial ponds along the ROW. Wading/shore birds may include great blue heron, snowy egret, black-crowned night heron, American white pelican, killdeer, American avocet, and spotted sandpiper. Waterfowl species probably occurring along the line include pied-billed grebe, American coot, Canada goose, mallard, green-winged teal, northern pintail, blue-winged teal, northern shoveler, gadwall, American widgeon, common merganser, and ruddy duck. Any of these species may nest in suitable habitat along the ROW (Kingery and Dillon, 1988; USGS, 1996; Dorn and Dorn, 1999; WGFD,2004b).

Numerous sensitive bird species may also occur along the line and these are listed in Table 3.8-2 in Section 3.8.

3.7.1.6 Fisheries

The Medicine Bow and Laramie Rivers contain game fish including brook trout, brown trout, rainbow trout, and walleye (BLM, 1990). Non-game fish include suckers (longnose and white), darters (Iowa and Johnny), creek chub, sand shiner, longnose dace, and carp. Larger tributaries to these rivers may support brook trout, brown trout, and creek chub, and other species may move into these waters during periods of high flow.

3.7.1.7 Other Species

Several species of snakes, including prairie rattlesnake, gopher snake, and wandering garter snake, likely occur in suitable habitat along the transmission line ROW, as do the amphibians tiger salamander and northern leopard frog and the reptiles eastern short-horned lizard and northern sagebrush lizard.

3.7.2 Environmental Consequences and Mitigation Practices

3.7.2.1 Significance Criteria

Impacts to wildlife resources would be considered significant if:

- construction activities occur on established lek areas or nesting grounds of greater sage-grouse during the breeding and nesting season;
- important mule deer or pronghorn antelope winter range is affected by construction during critical winter periods, causing disturbance or displacement of wintering animals;
- active raptor nests are disturbed;
- a long-term decrease in economically or ecologically important wildlife populations;
- a population trend warranting a species listing as Federal threatened or endangered.

3.7.2.2 Impacts of the Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

Big Game – Direct impacts to big game could include mortality due to collisions with vehicles; however, this type of impact would occur rarely, if at all, and thus is expected to be minimal. Indirect impacts to big game would include loss of 414 acres of habitat during construction and temporary displacement from adjacent habitats due to human activity. However, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time and since much of the CH-MM portion of the ROW is undeveloped, with abundant big game habitat, indirect effects would be minimal.

Construction would not occur within pronghorn or elk crucial winter range between November 15 and April 30 unless an exception is granted by the BLM in Wyoming; therefore, no significant impacts to big game in crucial winter ranges would occur (Table 2.1-3, Mitigation Practice 21).

Impacts during operation would be minimal because only 0.9 acres of habitat would remain disturbed, and big game generally adapt to occasional traffic and limited human activity.

Other Mammals – Project construction could result in direct mortality of small, less mobile mammals within the ROW. Small mammals would be more subject to mortality from construction than big game, but impacts would be minor because overall disturbance would be small (414 acres, disturbed in smaller phases) and of short duration. Indirect impacts could include displacement and minor, temporary loss of habitat. Many of these species have high reproductive potential and are common in surrounding habitats. Any population losses would be restored within one or two reproductive seasons (Western 1991). Construction-related direct and indirect impacts to other mammals would be minor and of short duration. Operational impacts would be negligible because only 0.9 acres of habitat would be lost and only limited traffic would occur on the ROW.

Raptors – If transmission line construction occurred adjacent to an active raptor nest, it is likely that individual production would be lost for that year, as this would constitute an adverse impact and a violation of the Migratory Bird Treaty Act. Western would conduct a raptor nest inventory each year prior to construction and would implement mitigation (avoidance, screening, timing of construction) to prevent the project from disrupting any active nests. To minimize the potential that raptors feeding on carrion could be killed by construction traffic, Western would move any road-kills away from project roads, in consultation with the state game agency. Construction-related impacts, therefore, would be low to none and of short duration. During operation, raptors may be susceptible to power line strikes (Olendorff and Lehman, 1986; Thompson, 1978). Collisions are expected to be rare events, so impacts from collisions would be minor but would persist for the life of the transmission line. Western would implement Standard Construction and Mitigation Practice 33 (Table 2.1-3), to eliminate the potential for raptor electrocution.

To mitigate the potential of future raptor collisions at the Rock Creek crossing, Western will install bird flight diverters at the Rock Creek crossing on both the rebuilt CH-MM transmission line and the existing HJ-MM transmission line (Mitigation Practice 33 - Table 2.1-3).

Upland Game Birds – Direct impacts to greater sage-grouse could include mortality due to collisions with vehicles or power lines, but this is expected to be a rare event and should not adversely affect grouse populations. Raptors may use structures as perches from which to hunt greater sage-grouse. Since this is a rebuild project, resident greater sage-grouse should be familiar with the transmission line and raptors already have perches from which to hunt. Indirect effects would include declines in nesting success if construction occurs in nesting habitat during the nesting season. There are 22 leks within 2.0 miles of the CH-MM ROW, so about 23 miles of the ROW are potential nesting habitat; Western would avoid construction in nesting habitat during the nesting season or would conduct nest surveys prior to construction each year and avoid any active nests. Other indirect effects would include temporary loss of up to 414 acres of habitat (to be disturbed in smaller phases), but given the extent of existing habitat, this temporary habitat loss should cause minimal impacts to greater sage-grouse. Western would reclaim all disturbed areas as soon as practical after construction each year, and while habitat impacts would be minimal they would be long-term because sagebrush reestablishment is typically a long-term process.

Impacts to greater sage-grouse during operations could include minor, short-term disruption of nesting grouse due to vehicles on the ROW or access roads. Since this is a rebuild project, the types of operational activities that have been occurring would continue at similar levels.

Columbian sharp-tailed grouse would not likely be impacted because they are rare visitors to the ROW, and mourning doves may be directly impacted due to collisions with vehicles or power lines, but these are expected to be rare events and would not impact mourning dove populations over the life of the project. Indirect effects of habitat loss in shrub-covered areas along perennial water courses and washes would be minimal. In summary, impacts to upland game birds would be minimal, but potential for mortality and the time required for sagebrush re-establishment would be long-term. Operational impacts to Columbian sharp-tailed grouse and mourning dove would be minor and long-term, occurring at levels similar to current levels.

<u>Other Birds</u> – Impacts to both resident and migrant birds (e.g., passerines, waterfowl, shorebirds, waders) could occur from mortality associated with collisions with vehicles and power lines. Collision potential is dependent upon variables such as habitat type, line orientation to migratory flyways and foraging flight patterns, numbers of migratory and resident bird species, species composition and familiarity with the area, visibility, types of disturbance, and line design (Beaulaurier et al., 1982; Anderson, 1978). Since this is a rebuild project, the transmission line is already part of the landscape, and the rebuilt line would not pose risks to birds above and beyond current conditions, except possibly during construction (collisions with construction vehicles). Some mortality is likely to occur but is not expected to adversely impact any bird populations. Ground-disturbing activities during the nesting season could result in the inadvertent destruction of nests, but since disturbance would be small relative to the amount of potential nesting habitat, the potential for adverse impacts is minor. Impacts of operations are expected to be minor.

<u>Fisheries</u> – Direct impacts to fish could occur if a spill occurred in any of the ROWs perennial waters; however, the potential for direct effects is low to none because construction equipment would be fueled at least 500 ft from perennial waters and Western would implement their SPCC Plan for all spills. Indirect impacts to fish could occur if surface water flows are diminished or if erosion from disturbed areas causes sedimentation in perennial waters. No surface water use is proposed, so streamflows would not be affected. Western would implement Standard Construction and Mitigation Practices 10, 11, 12, 13 (Table 2.1-3) to minimize erosion and sedimentation in streams. Operations would not impact any surface waters. Impacts to fisheries would be minimal to none and short-term.

<u>Other Species</u> – Amphibians and reptiles may be directly impacted due to collisions with vehicles or inadvertent entrapment in a structure hole, but mortalities are expected to be rare events and would not impact populations of these species. The indirect effects of habitat loss would be minimal because only 414 acres would be temporarily disturbed during construction (to be disturbed in smaller phases), and long-term disturbance would be about an acre. Loss of sagebrush habitat (e.g., for northern sagebrush lizard) would be long-term because sagebrush reestablishment can take many years, but impacts would be minimal because of the sagebrush habitat is abundant along the CH-MM ROW.

Because only minimal disturbance would occur, and because the potential for direct mortality is low, the project would not impact animal genetic or species diversity.

Transmission System - AU-CH Transmission Line Rebuild

<u>Big Game</u> – Direct and indirect impacts to big game along the AU-CH portion of the ROW would be similar to those described for the CH-MM ROW, except that 27.2 miles of pronghorn winter range, 9.2 miles of winter concentration areas, and 22.5 miles of severe winter range would be crossed. No crucial or severe winter range for elk or overlapping crucial winter ranges are present. Western would avoid construction in pronghorn winter ranges during critical winter periods, which would be determined in consultation with the Colorado Division of Wildlife prior to construction each year (Table 2.1-3, Mitigation Practice 25). Impacts to big game along the AU-CH ROW would be minor and short-term.

<u>Other Mammals</u> – Impacts to other mammals along the AU-CH portion of the project would be similar to those described for the CH-MM portion and are expected to be minor and of short duration.

Raptors – Impacts to raptors along the AU-CH portion would be similar to those described for the CH-MM portion. The single pole steel structures proposed from the Cheyenne substation to MP 32.0 would be about 63 ft taller than the existing H-frame structures and the adjacent 230-kV ARH-AU transmission line. The effects of this increased height may alter the potential for collisions with structures or power lines, but any changes are likely to be unnoticeable. Western would implement Mitigation Practice 33 (Table 2.1-3) to eliminate the potential for raptor electrocution.

Upland Game Birds – The potential for impacts to greater sage-grouse from construction and operation of the AU-CH portion of the project is minimal because limited habitat occurs south of Cheyenne. Similarly, impacts to Columbian sharp-tailed grouse would be minor to none because they are rare visitors to the ROW. While mourning doves fly through the area, the lack of shrub-covered areas along perennial water courses and washes would preclude mourning dove nesting and roosting. Impacts to mourning doves are also expected to be minor. Because of the potential for collisions with power lines, potential impacts would be long-term.

Other Birds – Impacts to other birds would be similar to those described for the CH-MM portion of the project, except that the agricultural fields along the southern 17 miles of the AU-CH ROW may attract foraging birds. However, since this is a rebuild project, the existing transmission line occurs in and adjacent to this preferred foraging habitat, and thus the rebuild would not cause impacts above and beyond current conditions. Additionally, single pole steel structures proposed from the Cheyenne substation to MP 32.0 would be 63 ft taller than the existing H-frame structures, which may alter the potential for collisions, but the change would likely be unnoticeable. Impacts to other birds are expected to be minor, while the potential for adverse effects would be the long-term potential for collision-related mortality.

Other Species – Impacts to other amphibians and reptiles would be similar to those described for the CH-MM ROW and would be minor and short-term.

Because only minimal disturbance would occur, and because the potential for direct mortality is low, the project would not impact animal genetic or species diversity.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

The proposed Snowy Range substation is located in shortgrass prairie adjacent to the city of Laramie near a road that is regularly used by heavy truck traffic to access a gravel pit. The area is used by pronghorn antelope that most likely have habituated to relatively high levels of human activity from heavy truck traffic. Potential impacts to pronghorn and other mammals would include collision-related mortality, displacement from the substation location during construction, and loss of about 16 acres of foraging area, but these impacts would be minor because of the high level of activity already at the location. No raptor nests are known to occur within 1.0 mile of the substation location, and no greater sage-grouse leks are known to occur within 2.0 miles, so no impacts to breeding and nesting raptors and grouse would occur. The substation is not expected to be a source for bird strikes and thus would have minimal to no impacts on other birds. Because the area to be disturbed is small (about 16 acres) and because habitat is marginal due to existing human activity, substation construction would have minimal to no impacts on other species. Similarly, because there is already notable human activity in the area, substation operation would only minimally, if at all, impact wildlife.

3.7.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Impacts to wildlife under CH-MM Alternative Route 1 would be similar to those described for the proposed project except that there may be more potential to impact waterbirds because the floodplain of the Laramie River is wider at the CH-MM Alternative Route 1, Part A crossing than at the crossing for the proposed project, which is the same for CH-MM Alternative Route, Part B. Neither route crosses big game crucial winter range, so impacts under CH-MM Alternative Route 1 would be the same as described for the proposed project. Impacts to other mammals would also be the same. No known raptor nests occur along CH-MM Alternative Route 1, and, because Western would survey the project ROW for active raptor nests prior to construction each year and no construction would be allowed near active raptor nests, no impacts to nesting raptors would occur. No greater sage-grouse leks and no wintering habitat are known to occur along the alternative ROW or along the proposed project ROW, so no impacts to greater sage-grouse would occur. Impacts to Columbian sharp-tailed grouse, mourning dove, other birds, except possibly waterfowl, and other species, would also be similar to those described for the proposed project. Impacts to wildlife under CH-MM Alternative Route 1 would be minor and of short duration for all groups except birds, where the potential for collisions would constitute a long-term potential impact.

AU-CH Alternative Route 2

Under Alternative Route 2, impacts to wildlife would be similar to those described for the proposed project, except that this alternative is located in cultivated land where habitat has already been altered. Impacts to wildlife would be minor and of short duration for all groups except birds, for which potential impacts would be long-term but similar to existing conditions because the project would rebuild an existing transmission line.

No Action Alternative

Under the No Action Alternative, no impacts to wildlife, above and beyond those attributable to operation of the existing transmission line, would occur.

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3.8 Special Status and Sensitive Species

3.8.1 Affected Environment

The project area for special status and sensitive species includes the existing and proposed expansion of the project ROW, the substation sites, regional settings and critical habitats.

3.8.1.1 Threatened, Endangered, Proposed, and Candidate Species

The Endangered Species Act (ESA) protects plants and animals listed as threatened, endangered, proposed, and candidate (TEP&C) species and their critical habitats. Based on information obtained from the USFWS (2006; 2005), the species in both Wyoming and Colorado to be addressed in this EA are presented in Table 3.8-1.

Black-footed Ferret – The endangered black-footed ferret is a small weasel-like animal that was once distributed throughout the high plains of the Rocky Mountain and Great Plains regions (Forrest et al., 1985). Prairie dogs are the main food source of black-footed ferrets (Sheets et al., 1972), and few ferrets have been historically collected away from prairie dog colonies (Forrest et al., 1985). The transmission line ROW lies within historical black-footed ferret habitat. Confirmed ferret observations were recorded within 1 mile of the ROW in 1968 and within approximately 4 miles of the line at two separate locations in 1979. After 1979, ferrets were believed to be extinct until a population was found near Meteetse, Wyoming. Black-footed ferrets were reintroduced in the Shirley Basin between 1991 and 1994. In 1991 two observations of experimental population ferrets were recorded 12 and 16 miles north of the ROW. Much of the transmission line ROW and surrounding areas are within the Shirley Basin/Medicine Bow Black-footed Ferret Management Area, which is divided into Primary Management Zones (PMZs) 1 and 2. PMZs are areas designated by WGFD and the FWS to assist in the management of the black-footed ferret reintroduction effort (WGFD and BLM, 1991). The transmission line ROW intersects the Shirley Basin/Medicine Bow Management Area and PMZ 2.

In Wyoming, prairie dog colonies intersect approximately 23.3 miles of the transmission line ROW (21.0 miles in Carbon and Albany Counties and 2.3 miles in Laramie County), but these are unlikely to be inhabited by ferrets (USFWS, 2004).

Prairie dog colonies along the Colorado portion of the route are potential habitat for black-footed ferrets. In Colorado, prairie dog colonies (potential black-footed ferret habitat) intersect 0.2 mile of the transmission line ROW. These colonies and others within 4.3 miles of the line have not been mapped, nor have any burrow density estimates been made.

In 2005, the reintroduced Shirley Basin black-footed ferret population was estimated to include about 150 black-footed ferrets (personal communication, 2006, with Bob Oakleaf, Wyoming Game and Fish Department). Surveys were also completed in September, 2006, during which 119 ferrets were captured and marked, and, while the WGFD is currently developing the population size estimate, a preliminary evaluation suggests that there may be up to 300 ferrets. Reintroduced black-footed ferrets have not been documented in the vicinity of the CH-MM corridor, and, because WGFD anticipates little potential for impacts from the project, WGFD will not recommend surveys for ferrets along the corridor prior to construction. Furthermore, the black-footed ferret management plan requires the WGFD to remove ferrets from areas where construction projects could impact individuals (WGFD and BLM 1991). Since no ferrets have been documented on or near the corridor, and since it would be incumbent on the WGFD to remove any ferrets from harms way, the black-footed ferret would not be impacted and it is not discussed further in this EA.

Table 3.8-1. FWS List of TEP&C Species Potentially Occurring on or Affected by the Project [1]

Common Name	Scientific Name	Status[2]	Habitat/Location	Potential to Occur Along ROW
Mammals				
Black-footed ferret	*Mustela nigripes*	E, XN	Prairie dog colonies	WY/CO
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	T (proposed for delisting)	Riparian habitats east of the Laramie Mountains and south of the North Platte River	WY/CO
Critical habitat	--	D	Varying widths (360-394 ft from stream edge) along portions of Cottonwood, Chugwater, and Lodgepole Creeks in Wyoming; no critical habitat has been designated in Weld County, Colorado	WY only
Birds				
Bald eagle	*Haliaeetus leucocephalus*	T (proposed for delisting)	Found throughout Wyoming	WY, CO
Mexican spotted owl	*Strix occidentalis lucida*	T	Coniferous forests in deep canyons	No
Amphibians				
Wyoming toad	*Bufo baxteri*	E	Wetlands in Laramie River valley	No
Plants				
Blowout penstemon	*Penstemon haydenii*	E	Sand dunes south of Ferris Mountains	WY only
Ute ladies'-tresses	*Spiranthes diluvialis*	T	Seasonally moist soils and wet meadows of drainages below 6,500 ft	WY, CO
Colorado butterflyplant	*Gaura neomexicana*	T	Wet meadows in floodplains	WY, CO
Critical habitat	--	D	Laramie and Platte Counties, Wyoming; Kimball County, Nebraska; and Weld County, Colorado	No
Platte River Species				
Piping plover	Charadrius melodus	T	Downstream on Platte River	No
Interior least tern[3]	Sterna antillarum	E	Downstream on Platte River	No
Whooping crane[3]	Grus americana	E	Downstream on Platte River	No
Pallid sturgeon	Scaphirhynchus albus	E	Downstream on Platte River	No
Western prairie fringed orchid	Platanthera praeclara	T	Downstream on Platte River	No

[1] FWS (20045, 2006).

[2] E = endangered; XN = experimental nonessential; T = threatened; P = proposed; D = designated.

[3] Water depletions in the North or South Platte River may affect these species and/or critical habitat in downstream reaches in other states.

Preble's Meadow Jumping Mouse – Preble's meadow jumping mouse (threatened, but recently proposed for delisting, see below) is a small rodent that occurs in low undergrowth consisting of grasses and forbs in wet meadows and riparian ROWs and where tall shrubs and low trees provide adequate cover. It prefers lush vegetation along water courses or herbaceous understories in wooded areas with close proximity to water (Clark and Stromberg 1987; USFWS 2006). A portion of the CH-MM and AU-CH transmission line is located in overall range of the Preble's meadow jumping mouse (USGS 1996).

While no site-specific surveys for Preble's meadow jumping mouse have been conducted along the CH-MM segment, general habitat surveys for sensitive species, including Preble's meadow jumping mouse, within and near the proposed transmission line were conducted by TRC Mariah biologists during various times between December 2002 and August 2004. In addition, based on information from WNDD (2002) and USGS (1996), it was determined that the proposed CH-MM segment would likely cross several areas that provide suitable habitat for the Preble's meadow jumping mouse.

The Colorado portion of the AU-CH transmission line segment is also located within the overall range of the Preble's meadow jumping mouse; however, according to the CDOW, the closest occupied range is approximately 4 miles west of the existing/proposed transmission line (CDOW 2006). During the 2004 general habitat surveys conducted by TRC Mariah biologists (certified to conduct Preble's meadow jumping mouse surveys), a single 14-acre parcel of potential Preble's meadow jumping mouse habitat was identified within the project area.

In January, 2005, the FWS determined that the Preble's meadow jumping mouse should not be classified as a separate species of meadow jumping mouse and has begun the process to formally delist it (FWS 2005). Before the rule is finalized, the FWS would evaluate threats to the meadow jumping mouse in all or a significant portion of its range. Until a determination is made in the future (2006 or beyond), the Preble's meadow jumping mouse will continue to be protected under the ESA.

In addition, the ROW crosses proposed critical habitat at Lodgepole Creek (MP 119) and North Lodgepole Creek (MP 118, two crossings). No critical habitat has been designated in Weld County in Colorado.

Several existing transmission line structures are currently located within the 100-year floodplains (based on FEMA maps) (Department of Housing and Urban Development, 1986; FEMA, 1991, 1994) of various drainages that are potential habitat and proposed critical habitat (Table 3.8-2).

Table 3.8-2. Existing Structures Known to be Located or Possibly Located in Potential Preble's Mouse Habitat

Milepost (Structure Number)	Drainage
Known to be located in potential habitat	
119 (114-7)[1]	Lodgepole Creek
117, 118 (113-5, 114-5)[1]	North Lodgepole Creek
127, 128 (123-3, 123-8)	North Fork Crow Creek
130, 131 (126-3, 126-4, 126-5, 126-6)	South Crow Creek
134, 135 (130-3, 130-10)	Tributary to Crow Creek
Possibly located in potential habitat	
112 (107-9, 107-10)	Meadow Fork Branch of Horse Creek
106, 107 (102-4, 102-5)	Horse Creek
124 (120-4, 120-5)	Unnamed drainage
125 (121-3, 121-4)	Unnamed drainage

[1] Proposed critical habitat.

Bald Eagle – Bald eagles (threatened) occur throughout Wyoming and Colorado (see also Section 3.7.1.3). Bald eagles require cliffs or large trees associated with concentrated food sources (e.g., fisheries, waterfowl concentration areas) or sheltered canyons for nesting or roosting areas (Edwards, 1969; Snow, 1972; Call, 1978; Steenhof, 1978; Peterson, 1986). The lack of such habitat along the ROW limits its suitability for nesting or roosting habitat, except near Seminoe Reservoir and near the Little Laramie River. One nest is known to occur along the ROW, at the confluence of the Little Laramie and Laramie Rivers. No roosts are known to occur within 1.0 mile of the transmission line ROW, but it is possible that bald eagles use trees and cliffs adjacent to the major drainages along the route as winter roosting and/or perching sites. Bald eagles have been observed nesting and roosting along the North Platte River southwest of the ROW, and migrating bald eagles and those nesting and roosting along the North Platte River may occasionally cross the line or perch on structures.

Mexican Spotted Owl – Mexican spotted owls (threatened) generally nest in closed canopy forests and rocky canyons and it will nest in stick nests built by other birds, on debris platforms in trees, and in tree cavities. Northern Colorado is the northern limit of potential range for the Mexican spotted owl (CDOW 2006). It does not occur in Wyoming and there have been no sightings in the state (WGFD 2004b). The CDOW has modeled potential habitat in northwestern corner of Weld County, but no habitat occurs on or near the project corridor. Mexican spotted owl would not be affected by the project and is not discussed further in this EA.

Wyoming Toad – Wyoming toad (endangered) is known to inhabit two wetland areas in the Laramie River watershed; however, the project is over 12 miles from Hutton Lake and over 14 miles from Mortenson Lake, the two areas with Wyoming toad populations. Therefore, the project would not impact this species (Erwin, USFWS, 2004), and it is not discussed further in this EA.

Blowout Penstemon – Blowout penstemon (threatened) is a potential resident in “blowouts” – sparsely vegetated depressions in active sand dunes created by wind erosion that typically form on windward sandy slopes where the vegetation has been removed or disturbed. Currently the species is primarily found in western Nebraska and in northwestern Carbon County in Wyoming Fertig 2002a). It is not likely to be found in Colorado. No suitable habitat occurs along the transmission line corridor; therefore, blowout penstemon would not be affected by the project and it is not discussed further in this EA.

Ute Ladies'-Tresses – Ute ladies'-tresses (threatened) is a perennial, herbaceous orchid known to occur throughout southeastern Wyoming in suitable habitat (Fertig, 1994). This species grows along streams, rivers, ponds, reservoirs, wetlands, and other riparian areas that occur at intervals along the entire route. This species has only four occurrences in Wyoming, in northwestern Converse, southeastern Niobrara, southwestern Goshen, and north-central Laramie counties (Fertig 2000b). The closest occurrence of Ute ladies'-tresses to the project area was recorded in north-central Laramie County, about 30 miles north of the proposed ROW. Occurrences of Ute ladies'-tresses have been documented in Larimer County, approximately 30 miles west of the proposed ROW (Spackman, 1997). Project area drainages and wetlands may provide suitable habitat for this species.

Colorado Butterflyplant – This threatened plant species is a potential resident of subirrigated alluvial level or slightly sloping floodplains and drainage bottoms at elevations of 5,000 to 6,400 ft. Colonies are often found in low depressions or along bends in wide meandering stream channels. Known populations of this species are restricted to approximately 1,700 acres of habitat in Laramie County, Wyoming, western Kimball County, Nebraska, and Weld County, Colorado. In Wyoming, a predictive distribution model was prepared for Colorado butterflyplant by the Wyoming Gap program, and, according to the predictive model, the CH-MM segment crosses approximately 13 segments of potential Colorado butterflyplant habitat. The AU-CH segment is also located within the overall range of the Colorado butterflyplant (USFWS 2006). During field surveys, a 14-acre parcel of potential Colorado butterflyplant habitat occurs approximately 13 miles north of the Ault substation.

Platte River Species – These species (threatened or endangered) occur in the Platte River system downstream from the project area, and do not occur along the ROW.

3.8.1.2 Sensitive Species

A list of sensitive species along the route (Appendix B, Table 3.8) was obtained from the following sources:

- the U.S. Fish and Wildlife Service (FWS, 2005, 2006);
- BLM's list of sensitive species (BLM, 2002a);
- the Wyoming Natural Diversity Database (2004);
- the Colorado Natural Heritage Program (2004); and,
- the Colorado Division of Wildlife (2004).

The transmission line ROW contains potential habitat for 160 sensitive species (Appendix B, Table 3.8), and most of the line may provide habitat for one or more of these species.

3.8.2 Environmental Consequences and Mitigation Practices

3.8.2.1 Significance Criteria

Impacts to special status and sensitive species would be significant if effects from transmission line construction or operations, such as loss of individuals or long-term loss of habitat for federally listed species, result in any of the following:

- "jeopardy" Biological Opinion under Section 7 of the ESA;
- impacts to BLM-sensitive species;
- impacts to state-listed species;

- a population reduction in a vulnerable species that could result in its listing as Federal threatened or endangered.

3.8.2.2 Impacts of the Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

The CH-MM portion of the project may affect but is not likely to adversely affect Preble's meadow jumping mouse. The project would not adversely modify critical habitat. Construction traffic would traverse potential habitat, and thus there is remote potential for mouse mortality due to collisions with vehicles. Removal of existing structures located within known habitat or potential habitat could cause mouse mortality and temporary habitat loss. As part of the proposed project, however, Western would implement Mitigation Practice 22 (Table 2.1-3), which would entail conducting an inventory to determine if any existing structures occur in potential Preble's habitat. These structures would be cut off at ground level to avoid disturbing Preble's habitat. Potential Preble's meadow jumping mouse habitat would be spanned, and construction traffic would avoid driving on designated critical habitat. The project would have negligible indirect effects on Preble's meadow jumping mouse critical habitat because no topsoil would be removed or salvaged so no soil or vegetation would be impacted in mouse habitat. Western would also implement Mitigation Practice 35, which provides for unanticipated discoveries of any T&E species.

Depending on if and when Preble's is delisted in 2006 or beyond, there may not be a requirement for the above-referenced inventory or mitigation to avoid disturbing Preble's habitat. Western would monitor Preble's status and, if necessary, conduct surveys and implement mitigation to ensure project compliance with the ESA.

Western would survey the ROW for bald eagle nests prior to construction each year. Construction would not be allowed within 1.0 mile of any active bald eagle nest until the chicks have fledged or the nest fails (Mitigation Practice 36 – Table 2.1-3). Western would also remove carrion from project access roads (see Section 3.7.2.4), and implement Mitigation Practices 33 and 37 (Table 2.1-3). With these mitigation measures, bald eagles would not be impacted by construction. During operation, bald eagle mortality due to collisions with structures or power lines would constitute an adverse effect but it would not be any more likely for the CH-MM rebuild than for the existing transmission line. Bald eagles may be affected but are not likely to be adversely affected by the project. The increase in structure height is not expected to increase risk of collisions.

The project may affect but is not likely to adversely affect Ute ladies'-tresses. During construction, impacts to Ute ladies'-tresses could include inadvertent loss of individual plants due to surface-disturbing activities or vehicular traffic. During operations, traffic in potential Ute ladies'-tresses habitat could cause the inadvertent loss of individuals. Most Ute ladies'-tresses habitat would be spanned by the transmission structures, so potential for impacts is low. Western would implement Mitigation Practice 23 (Table 2.1-3) to avoid and minimize potential impact to the Ute ladies'-tresses. Prior to disturbing any potential Ute ladies'-tresses habitat, Western would survey possible traffic-ways and all areas to be disturbed for Ute ladies'-tresses and, if any are found, would consult with the FWS to determine what actions are necessary to avoid or minimize impacts to Ute ladies'-tresses (Mitigation Practice 35 – Table 2.1-3). During operations, traffic in potential Ute ladies'-tresses habitat would be restricted to existing roads.

During construction, impacts to Colorado butterflyplant could include inadvertent loss of individual plants due to surface-disturbing activities or vehicular traffic. Operations traffic in known or potential Colorado butterflyplant habitat would also be restricted to existing roads (Table 2.1-3, Mitigation Practice 26). The CH-MM portion of the project would not affect Colorado butterflyplant. Western would also implement Mitigation Practice 35, which provides for unanticipated discoveries of any T&E species.

No direct impacts to Platte River species would occur.

In 2002, the FWS prepared a biological opinion in its *Revised Intra-Service Section 7 Consultation for Federal Agency Actions Resulting in Minor Water Depletions to the Platte River System* (FWS 2002). The biological opinion covers any Federal actions other than wetland restoration projects that result in average annual depletions of 25 acre-ft or less to the Platte River system, regardless of location within the basin. The effects analysis and conservation measures apply only to Federally listed species, designated whooping crane habitat, and proposed critical habitat for the piping plover along the Platte River in Nebraska.

For the CH-MM and AU-CH project, the only water use anticipated would be for soil compaction during construction of the Snowy Range substation. Compaction water would be obtained from the Laramie municipal water, which comes from the Laramie River and the Casper formation. The amount of water to be used is currently unknown but would be less than 25 acre-feet; however, any amount of water taken from the Platte River system for use on this project would be considered a depletion and would require section 7 consultation with the USFWS. Therefore, once the amount of water is known, Western would initiate consultation with the FWS on that amount.

In accordance with the above-referenced biological opinion, "Federal agencies should continue to conclude that each action resulting in a depletion of 25 acre-feet or less per year to the Platte River system may adversely affect the whooping crane, interior least tern, piping plover, and/or pallid sturgeon, designated whooping crane critical habitat, and proposed piping plover critical habitat" (FWS 2002). No mitigation is required because the U.S. Forest Service and the FWS have provided funds to the Fish and Wildlife Foundation account for the purposes of offsetting the adverse effects of Federal agency actions resulting in minor water depletions, such as the CH-MM and AU-CH project.

While the CH-MM ROW provides habitat for many BLM-sensitive and WNDD-tracked animal species, the project is not likely to cause any species to be petitioned for listing as threatened or endangered; greater sage-grouse and mountain plover are specifically mentioned below because of the elevated status of these two sensitive species. The FWS was petitioned to list the greater sage-grouse, but in January 2004 determined that listing was not warranted. Transmission lines are not thought to be a primary factor in their decline and the project is not likely to affect the populations of any of these species (see Transmission System - CH-MM Rebuild, above). Mountain plover was proposed for listing until 2003, when the FWS decided not to list it, but because of this previously elevated status, the BLM is requiring pre-construction surveys in potential habitat.

Potential mountain plover habitat is widespread along the CH-MM ROW, and it is likely that mountain plover are nesting along the ROW. Possible impacts include potential for mortality due to collisions with vehicles or inadvertent destruction of nests by vehicles, and from collisions with structures and power lines. Collisions with vehicles and nest destruction would be rare events unless a high density of mountain plover is nesting along the ROW. BLM would likely require pre-construction surveys for nests, and nests would be avoided, so potential for impacts to nesting plover would be minimal. Potential for collisions with structures and power lines is also low, and since this is a rebuild project, this potential would be no greater than under current conditions. Habitat would be disturbed and some mountain plover may be displaced during construction; however, the amount of disturbance (less than 414 acres) scattered over 140 miles is small relative to the abundant adjacent similar habitat types, and temporary loss of habitat would have a minor impact. The duration of impact would be temporary.

Other BLM-sensitive and WNDD-tracked species are discussed in general, rather than by species or group, because the project is likely to cause only minor impacts to any species and because none are proposed for listing or were recently down-listed. Possible impacts include potential for mortality (due to collisions with vehicles for the ground-dwelling species and due to collisions with structures and power lines for the birds and bats). Collisions with vehicles would be a rare event and would occur temporarily during each construction season. Potential for collisions with structures and power lines is also low, and since this is a rebuild project, this potential would be no greater than under current conditions. Habitat would be disturbed and some animals may be displaced during construction; however, the amount of disturbance (414 acres) is small relative to the abundant adjacent similar habitat types, and, unless adjacent habitats are fully occupied, the temporary loss of habitat would have a minor impact. Furthermore, since the project would be constructed in phases, only a fraction of this amount would be disturbed at any one time. Vegetation removal during the nesting season could inadvertently destroy the nests of sensitive bird species; however, since the overall disturbance area is small, the impacts to nesting birds are expected to be minor. The duration of impact would be temporary to all species except for the sage obligates (greater sage-grouse, Brewer's sparrow, sage sparrow, and sage thrasher), where habitat loss impacts would persist until sagebrush is restored. It is anticipated that grassland and riparian vegetation that is disturbed would regenerate quickly. Transmission line operation could result in animal-vehicle collisions and would likely result in some mortality of sensitive birds or bats, but since this is a rebuild project, the level of effect would not be any greater than under current conditions, which has not resulted in the listing of or the petition to list any species.

Impacts to BLM-sensitive and WNDD-tracked plant species could include loss of individuals during ground-disturbing activities or vehicular traffic. Because the project footprint is small (414 acres) and because traffic would be limited to the ROW and designated roads, potential for sensitive plant loss is low. The ROW does not contain any known localities or concentrations of sensitive plants or sensitive plant communities (WNDD, 2004). Impacts to BLM-sensitive and WNDD-tracked plants would be minor and of short duration for all species except that inhabit sagebrush communities, where impacts could be long-term.

Transmission System - AU-CH Transmission Line Rebuild

Impacts to Preble's meadow jumping mouse along the AU-CH portion of the ROW would be similar to those described for the CH-MM ROW except that no designated critical habitat for Preble's meadow jumping mouse occurs along the AU-CH ROW. Potential habitat occurs along the streams, but these streams would be spanned by the project. Prior to construction, Western would conduct an inventory to determine if any existing structures occur in potential Preble's habitat; these structures would be cut off at ground level to avoid disturbing Preble's habitat (Mitigation Practice 22, Table 2.1-3). The AU-CH portion of the project would not affect Preble's meadow jumping mouse.

Impacts to bald eagles along the AU-CH portion of the ROW would be similar to those described for the CH-MM ROW. The single pole steel structures proposed from the Cheyenne substation to

MP 32.0 would be about 63 feet taller than the existing H-frame structures and the adjacent 230-kV ARH-AU transmission line. The effects of this increased height may alter the potential for collisions with structures or power lines, but any changes are likely to be unnoticeable. The AU-CH portion of the project may affect but is not likely to adversely affect bald eagles.

Impacts to Colorado butterflyplant and Ute ladies'-tresses along the AU-CH ROW would be similar to those described for the CH-MM ROW. The AU-CH portion of the project may affect but is not likely to adversely affect Colorado butterflyplant or Ute ladies'-tresses. Implementation of Mitigation Practices 23, 26, and 35 (Table 2.1-3) would minimize any potential impacts.

Impacts to Colorado state-listed threatened, endangered, and candidate and WNDD-tracked species along the AU-CH ROW would be similar to those described for BLM-sensitive and WNDD-tracked species along the CH-MM ROW.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne, and Ault Substation Modifications

There is no potential habitat for any of the TEP&C species at the substation sites; therefore, construction of the proposed Snowy Range Substation would not impact Preble's meadow jumping mouse, Colorado butterflyplant, or Ute ladies'-tresses habitat, and thus these species would not be affected. Bald eagles may occasionally fly through the area but would not be affected by substation construction. Modifications to the Miracle Mile, Cheyenne, and Ault substations would occur within the existing fenced areas and thus would not affect any federally listed TEP&C species.

The substation site is not known to support any BLM-sensitive or WNDD-tracked species (WNDD, 2004), so no impacts to these species are anticipated due to substation construction.

3.8.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Colorado butterflyplant does not occur west of the Laramie range and thus impacts to this species under CH-MM Alternative Route 1 would be the same as for the proposed project. CH-MM Alternative Route 1 Part A, crosses a wider riparian area and possibly more Preble’s meadow jumping mouse and Ute ladies'-tresses habitat at the Laramie River crossings for Part A and B, compared to the proposed project, but with additional habitat mapping and pre-construction surveys (Project Specific Mitigation Measure 23 – Table 2.1-3), Preble’s meadow jumping mouse and Ute ladies'-tresses would not be affected by CH-MM Alternative Route 1.

CH-MM Alternative Route 1 crosses similar habitat types as the proposed project and thus impacts to BLM-sensitive and WNDD-tracked species would be similar to those described for the proposed project, except that the alternative has the potential to impact more of the Laramie River floodplain (and its associated species) than the proposed project. Western would minimize disturbance within this floodplain regardless of the alternative selected; therefore, impacts to BLM-sensitive and WNDD-tracked species would be minor and of short duration.

AU-CH Alternative Route 2

Impacts to federally listed TEP&C species and Colorado state-listed threatened, endangered, and candidate species along Alternative Route 2 would be similar to those described for the proposed project.

No Action Alternative

Under the No Action Alternative, no impacts to federally listed TEP&C species, BLM- sensitive or WNDD-tracked species, or Colorado state-listed threatened, endangered, or candidate species would occur.

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3.9 Cultural Resources

Cultural resources are fragile and nonrenewable remains of prehistoric and historic human activity, occupation, or endeavor as reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human history. Cultural resources comprise the physical remains themselves, the areas where significant human events occurred even if evidence of the event no longer remains, and the environment surrounding the actual resource. Because of the sensitive nature of cultural resources, the Technical Report for this project is on file with Western Area Power Administration, Loveland, Colorado and is not included with the EA. Cultural resources site information is protected under the National Historic Preservation Act of 1966 (as amended), Section 304 and under 36CFR800.11(c)).

The National Historic Preservation Act (NHPA) of 1966 and the Archaeological Resource Protection Act of 1979 provide for the protection of significant cultural resources. Section 106 of the NHPA describes the process that federal agencies must follow to identify, evaluate, and coordinate their activities and recommendations concerning cultural resources. Significant cultural resources are defined as those listed on, or eligible for listing on, the National Register of Historic Places (NRHP). Significant cultural resources are generally at least 50 years old and meet one or more of the criteria presented in 36CFR60. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and, (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history.

Prehistoric cultural resources are generally evaluated with respect to criterion d, which pertains to a site's potential for yielding scientifically valuable information. The measure of the importance of the scientific data is based upon research questions widely recognized as appropriate by the scientific community. Sites most likely to yield these important data are those with intact cultural deposits, where artifacts and features are relatively undisturbed. In additional to retaining contextual integrity, sites with the highest research value are those likely to contain cultural features. Features such as hearths, storage or habitation structures, or living structures often yield charcoal for radiocarbon dating; macrobotanical, palynological, and faunal evidence of subsistence practices; and associated datable artifact assemblages. Sites with artifacts diagnostic of a particular temporal period or cultural group are also regarded as having higher research potential than those lacking diagnostic artifacts. Sites attributable to a specific unit can be used to address specific research questions and are regarded as important resources.

Historic sites can potentially meet any of the four criteria for eligibility to the NRHP. Frequently, however, the focus is upon architectural significance or association with events or individuals of historical importance. Although site-specific historical research is often warranted after a site is identified to determine whether it was associated with an important individual or event, a site's value as an archaeological resource should not be overlooked. When considering a historic site's archaeological value, the condition or structures or burial of cultural deposits are not as important as whether information exists on the site in the form of artifacts or cultural features that can answer questions of particular interest about the past. Sites that can be confidently ascribed to a particular historic theme and subtheme are generally regarded as having more research value than sites that cannot be ascribed to a theme. Significant historic archaeological resources are those that are relatively undisturbed, can be attributed to a specific theme, and retain sufficient artifacts and features to permit further study. Linear cultural resources such as roads, trails, and ditches generally possess little archaeological value, though in some instances they may retain engineering significance or be associated with important historic events. Roads, trails, and railroad grades, however, may have other historic site types associated with them that are important archaeological resources, the proper interpretation of which may depend upon identification of the linear site.

The significance of traditional cultural properties is usually assessed by talking with elders and other knowledgeable individuals of a cultural group, and through historical documentation. Some traditional cultural properties may be significant to an entire cultural group, whereas others may be significant to an individual or family.

3.9.1 Affected Environment

The project area for cultural resources includes the existing and proposed expansion of the project ROW and the substation sites.

3.9.1.1 Regional Cultural Overview

Human occupation of southeastern Wyoming and northeastern Colorado is known to extend to at least 12,000 years ago. The earliest inhabitants were representative of the Paleoindian stage, which emphasized the exploitation of megafaunal and floral resources during the period of transition from the Pleistocene to the Holocene dating between around 10,000 to 6000 B.C. This stage has traditionally been identified by a number of distinctive, diagnostic lanceolate projectile points and tool assemblages indicative of a big game hunting economy by what have been termed the Clovis, Folsom, and Plano traditions. Beginning around 10,000 years ago, two distinct Paleoindian adaptations emerged on the Northwestern Plains. The plains big game adaptation generally occurred on the open Plains and large intermontane basins. These groups, identified by projectile points known as Hell Gap, Alberta, Cody, Eden, Scottsbluff, and others, focused upon bison, often procured during communal hunts. The foothill-mountains group occupied more rugged, higher elevations at the margins of the Plains, and penetrated into the Rocky Mountains and the Colorado Plateau. These people followed a more diversified subsistence round, procuring deer, bighorn sheep, and pronghorn rather than bison, and perhaps more intensively exploiting floral foodstuffs. The projectile points of the foothill-mountains groups are generally lanceolate forms with concave bases, but also include points with restricted stems, many of which also have indented bases. Both lanceolate and stemmed styles often show parallel-oblique flaking patterns. Projectile point types associated with foothill-mountain Paleoindian groups include Frederick, Lusk, Jimmy Allen, Angostura, Lovell Constricted, and Pryor Stemmed styles. Frison (1991:338) suggests that the artifact assemblages from foothill-mountains groups display greater regional variability than those from open Plains groups, indicating more localized specialization. A well-known Paleoindian site in the general vicinity of the project area, south of Laramie, is the James Allen site (48AB4), the type site for one of the parallel-oblique point styles. On the Colorado side in the vicinity of the project area are the Lindemeier (5LR13), Johnson (5LR26), and Jurgens (5WL53) sites.

Warming of the environment to essentially modern conditions resulted in the end of the Pleistocene and extinction of several large animal species upon which Paleoindian cultures relied. The Plains Archaic stage, which dates between 6500 B.C. and A.D. 500, represents adaptation to the changing environment, mainly by efficiently focusing on a more diverse subsistence base. It is characterized by the hunting of smaller game and increased dependence upon plant resources. The Archaic stage is characterized by large stemmed or stemmed indented base dart points, large side- and corner-notched projectile point forms, and a diverse tool assemblages, including grinding slabs and hand stones. Archaic features include housepits and firepits with fire-cracked rock. Early, Middle, and Late periods are defined within the Plains Archaic stage. The Early Plains Archaic (ca. 6500 to 3000 B.C.) is associated with the Altithermal climatic episode, during which people hunted small to medium game but few bison. Early Plains Archaic sites in the vicinity of the project area in Wyoming include Medicine House (48CR2353) and the Shoreline site (48CR122), near Seminoe Reservoir, which contained housepits. The Wilber Thomas rockshelter (5WL45) in Colorado contained multiple components, including an Early Plains Archaic occupation. The Middle Plains Archaic (ca. 3000 to 1500 B.C.) follows the Altithermal. The climate became wetter. Bison hunting resumed its importance, but a wide range of plants and animals were exploited. The Middle Plains Archaic is synonymous with the McKean complex, named after the type site in northeastern Wyoming. Sites from the Middle Plains Archaic period are numerous and include the Scoggin site (48CR304), a bison kill site a few miles west of Seminoe Reservoir, the Dipper Gap site (5LO101) and Spring Gulch site (5LR252) on the northeast plains of Colorado. Late Plains Archaic (ca 1500 B.C. to A.D. 500) sites are also widespread. North of the project area, at the south edge of the Shirley Basin, is the Muddy Creek site (48CR324), a stone circle and bison kill site.

The final prehistoric stage is known as the Late Prehistoric stage of the Northwestern Plains, which dates from A.D. 500 to European contact. It is marked by the appearance of the bow and arrow. The presence of ceramics at some Late Prehistoric sites suggests contact with the Woodlands culture. Subsistence focused on communal bison hunts as well as other game hunting and collection of wild foods. Late Prehistoric sites in the vicinity of the project area in Wyoming include the Willow Springs Buffalo Jump site (48AB30); the John Gale site (48CR303) west of Seminoe Reservoir; and the Shirley Basin site (48AB301) to the north. Ceramics are present at the John Gale site. Stone circle sites, which first appeared in the Late Archaic, are the most visible feature in the Late Prehistoric. These stones were probably used to hold down skin coverings of conical pole structures (i.e., tipis). Late prehistoric sites in the vicinity of the project area in Colorado include the Biggs sites (5WL7, 5WL27) and the Agate Bluff sites (5WL1478, 5WL1479, 5WL1481), all of which contained ceramics; and the late component at Wilbur Thomas rockshelter.

The Protohistoric period begins with the introduction of the horse in the early eighteenth century. European trade goods are common at Protohistoric sites. Modern tribes known to have inhabited southeastern Wyoming and northeastern Colorado during the period of initial European contact include the Arapahoe, Cheyenne, Comanche, Shoshone, and Sioux.

Beginning in the late 1600s or early 1700s, the French and Spanish were in competition for influence in, if not control of, the eastern portion of the project area. French trappers and traders were operating in southeastern Wyoming and northeastern Colorado, and Spanish military expeditions were formed as early as 1717 in attempt to evict the French, reaching the juncture of the Platte Rivers by 1720. This situation continued, with French traders working in the area until at least the 1760s, and Spanish troops patrolling the plains until the early 1800s. By 1818 Euroamericans out of St. Louis were trapping beaver in what were to become Colorado and Wyoming, traveling along the Platte and South Platte Rivers. In the 1830s two permanent trading settlements, Fort Lupton and Fort Vasquez were established along the South Platte, and a year later Fort Jackson and Fort St. Vrain were built nearby. By the mid-nineteenth century, several established emigrant routes traversed Wyoming from east to west, including the Oregon, Overland, and Mormon Trails. Several trading posts and military outposts were constructed in the vicinity, including Fort Laramie and Fort William in southeastern Wyoming. Stagecoach routes were established across Wyoming by the 1850s, and the following decade marked the advent of the Pony Express and transcontinental telegraph lines. In 1858, following the discovery of gold at Cherry Creek in Colorado, large numbers of Euroamericans began to pass through northeastern Colorado on their way to the gold mining areas near Denver, Cripple Creek, and Black Hawk, generally traveling along the South Platte, well to the southeast of the project area. The discovery of gold in 1867 in what became known as the Sweetwater Mining District, Wyoming, led to the creation of mining towns such as Atlantic City and South Pass City near present-day Lander. The gold mining boom was short-lived, essentially ending five years later. By 1875, less than 100 people lived in the area. Beginning in the 1880s, the mining of coal, gas, and oil became the important mineral industries and continue to be so today.

The transcontinental Union Pacific Railroad crossed Wyoming in 1868, leading to the founding of the city of Cheyenne that same year. Trails and roads in the vicinity of the project area include the Ft. Laramie to Ft. Halleck freight road, the Ft. Fetterman Road, the Denver to Ft. Laramie Road, the Camp Walbach to Ft. Laramie Road, the Cheyenne to Cheyenne Pass Road, the Union Pacific Railroad, and the Cheyenne-Northern Railroad.

Cattle and sheep industries boomed following the construction of the railroad. The Carey Act of 1894 provided aid for irrigation projects and opened arid lands to farming. Land reclamation intensified following the 1902 Newlands Act, which funded the construction of canals and reservoirs. Historic ditches and canals, homesteads, and ranches are common in the project area.

3.9.1.2 Class I Inventory

In order to assess potential impacts to significant cultural resources in the project area, a Class I inventory (site file search) for the Wyoming portion of the project was conducted at the Wyoming Cultural Records Office, (WYCRO), Laramie, Wyoming, and at the BLM, Rawlins Field Office, Rawlins, Wyoming. For the Colorado section, a site file search was conducted at the Office of Archaeology and Historic Preservation (OAHP) and General Land Office (GLO) records were checked at the Colorado State BLM office in Denver. Locations of previously recorded sites and historic sites shown on GLO maps within ½ mile of the project ROW and access roads were plotted on project maps, and the following site data were compiled: site type, cultural affiliation, and NRHP status. The National and State Registers of Historic Places for Carbon, Albany, and Laramie counties in Wyoming and Weld County in Colorado were checked to identify cultural properties listed to date. The Class I research results are a direct reflection of previous cultural resource investigations; i.e., little or no site data exist for those portions of the project area that have not been previously inventoried.

Numerous cultural resource inventories have been conducted within or adjacent to the project area. The inventories include block inventories for land exchanges and leases and linear projects such as seismic lines, fiber optic lines, power lines, and pipelines. Cultural resource inventories have been conducted in advance of development and exchange of land managed by the BLM.

3.9.1.3 Class III Inventory

An intensive (“Class III”) cultural resource inventory was initiated by Alpine Archaeological Consultants, Inc. in the fall of 2003, but was not completed because of the onset of winter weather. The inventory of the CH-MM and HJ-MM sections was completed in the spring of 2003, and the AU-CH section in the summer of 2004. The inventory of 179.92 linear miles of transmission line ROW and 93.2 linear miles of access roads recorded 63 sites in the project area, including 25 previously recorded sites and 38 new sites. The following types and quantities of sites were recorded: 34 historic Euroamerican sites , 26 prehistoric sites , and three sites with both prehistoric and historic components. Twenty sites are officially eligible or have been recommended eligible for the NRHP, and 42 sites have been recommended not eligible for the NRHP. New materials documented at one site, officially designated not eligible in 1998, led Alpine to recommend it as eligible.

3.9.1.4 Native American Consultation

Western contacted Native American tribes with a potential interest in the project, and historical ties to the project area, to inform them of the proposed project and request any comments or information they would like to provide. A letter was sent to the tribes on December 9, 2002. (see Appendix D).

3.9.2 Environmental Consequences and Mitigation Practices

3.9.2.1 Significance Criteria

Impacts to cultural resources that are caused directly or indirectly by project activities would be significant only if:

- they occur to a cultural resource that is considered eligible for or is listed on the National Register of Historic Places (NRHP). As discussed above, sites are evaluated for the NRHP in regard to their research value and tangible links to important persons or historical events. Disturbance to eligible or listed resources, referred to as historic properties, is an adverse effect, and should be avoided or the adverse effects mitigated.

3.9.2.2 Impacts of the Proposed Project

Twenty-one sites encountered during the archaeological survey for the project are considered to be eligible for nomination to the NRHP, and potential impacts to those historic properties are evaluated in the following sections. Three types of direct impacts have been identified in association with this undertaking:

1. removal of existing transmission structures;
2. construction of transmission structures; and,
3. use and maintenance of access roads.

Rebuilding and/or upgrading existing transmission lines can result in several types of ground disturbance, many of which have the potential to impact cultural resources. Regardless of new structure placement, the removal of aging in-place transmission structures can cause impacts to cultural resources. These impacts are primarily caused by vehicular traffic to and around the existing structure for excavation and removal of the structure itself, and gathering of materials to recontour the landscape. Project impacts can be minimized by limiting vehicular access to rubber-tired vehicles and finding alternate structure removal schemes.

Construction and installation of new transmission structures also cause ground disturbance, and thus can impact significant cultural deposits. These impacts originate not only from excavation for structure construction, but from construction/excavation equipment or vehicles and disposal and/or dispersion of excavated earthen materials. Project impacts to cultural deposits can be minimized by re-engineering structure placement off of significant resource locations, use of rubber-tired vehicles, limiting vehicular access, and carefully planned disposal and/or dispersion of excavated earthen materials. All sites on proposed transmission lines have the potential to be impacted by new structure placement, as specific structure locations have not been identified.

As is the case with any existing transmission system, cultural resources are in danger of destruction and disturbance from the use and maintenance of access roads. Each time a road is used, widened or improved for maintenance activities, direct impacts may occur to cultural resources crossed by that road. Potential direct impacts to cultural resources resulting from periodic use of roads for maintenance activities are the same for all alternatives, including the No Action Alternative. Direct impacts to cultural resources from maintenance activities would be avoided or mitigated to less than significant levels by limiting traffic to the existing and/or improved access roads and at structure sites. Indirect or secondary impacts, resulting from increased access by the general public may also occur if increased access and visibility to resources results in looting and/or artifact collection. Since the proposed project entails replacement and/or upgrading of an existing system and existing access roads that are already in place, these types of secondary impacts are not anticipated.

To address these direct impacts, Western has adopted standard construction, operation and maintenance practices that would avoid and minimize impacts to the environment to the extent practicable (see section 2.1.10). These measures are listed on Table 2.1-3. Practices 29, 30, and 31 are specifically designed to address the direct impacts to cultural resources listed above. Practice 29 calls for cutting existing structures at their base with an archaeological monitor present, rather than excavating buried portions of the structure. Practice 30 calls for avoiding certain potential transmission structure placements to avoid archaeological sites and monitoring activities when close to them. Practice 31 calls for limiting use, upgrading, and maintenance of access roads on or near significant archaeological resources.

In the following sections impacts from structure removal, new structure construction, and access road use will be discussed by project segment.

Transmission System – CH-MM Transmission Line Rebuild

Six prehistoric sites and nine historic sites on the CH-MM section of the project were recommended as eligible to the NRHP. Table 3.9-1 summarizes the potential impacts to each of these properties. The Pioneer Canal (48AB835), the Union Pacific Railroad (48AB358), and the Lincoln Highway (48AB152/48CR1191) are crossed by the CH-MM project area within segments of the sites that are considered to be noncontributing to their eligibility. Impacts to these properties are, therefore, considered to be of no adverse effect and not included in the following impact discussions. Project impacts to the remaining 12 historic properties, however, have the potential to cause adverse effect.

Two of the historic properties in the CH-MM section of the project currently have existing transmission structures within the site boundaries. Removal of these structures has the potential to impact the sites. These impacts would not be significant by implementing Western’s Standard Construction and Mitigation Practice 29 (Table 2.1-3).

Eight of the historic properties in the CH-MM section of the project occur along the transmission centerline. Specific structure placements have not been identified and, therefore, each of these sites must be considered at risk for impacts from transmission structure construction. These potential impacts can be avoided by implementing Western’s Standard Construction and Mitigation Practice 30 (Table 2.1-3). Site 48CR8036 is eligible under criterion c of the NRHP due in part to its setting; therefore, an assessment of visual impacts is especially important. With two existing transmission lines crossing the site, replacement of the CH-MM section would not adversely affect the site's setting; however, replacement structure placement still has the potential to impact the site.

Table 3.9-1. Potential Impacts to Sites, CH-MM Transmission Line Rebuild

Site No.	Site type	Owner	Potential Impacts		
			Access Road use and maintenance	**Structure removal**	**New structure construction**
48AB1397	Historic homestead	Private			X
48AB1399	Historic homestead	Private	Road 45-2 to 47-3		
48AB1405	Prehistoric	Private	Transmission line road	71-4	X
48AB1408	Prehistoric	Private	Road to 101-3		
48CR8028	Historic homestead	Private	Road to 13-6		X
48CR8031	Prehistoric	Private			X
48CR8033	Prehistoric	Private	Road to 27-2	27-2	X
48CR8034	Prehistoric	BLM	Road to 9-6		X
48CR8036	Historic sheep yard	Private	Transmission line road		X
48CR8041	Prehistoric	Private	Road to 47-1		
48LA484 Cheyenne Northern	Historic railroad	Private			
48LA2789 Denver-Ft. Laramie	Historic road	Private			X
48AB835* Pioneer Canal	Historic Canal	Private and State	Road to 91-7*		X*
48AB358* Union Pacific Railroad	Historic Railroad	Private and State	Road to 79-5* Road to 80-6* Road to 81-5* Road to 81-7* Road to 83-1* Road to 83-6* Road to 85-2*		
48AB152/ 48CR1191* Lincoln Highway	Historic road	Private			X

* Potential project impacts occur in noncontributing sections of these sites

Eight of the historic properties are crossed by project access roads in the CH-MM section. These sites would be impacted by access road maintenance or widening. These potential impacts can be minimized by implementing Western's Standard Construction and Mitigation Practice 30: limited use or archaeological mitigation (Table 2.1-3).

Transmission System – AU-CH Transmission Line Rebuild

Two prehistoric sites and three historic sites on the AU-CH sections of the project were determined officially eligible or were recommended as eligible to the NRHP. Table 3.9-2 summarizes the potential impacts to each of these historic properties. The officially eligible sites are the abandoned Denver Pacific Railroad Grade (48LA1237) and an in-use segment of the Union Pacific Railroad (5WL1969.30) (see Table 3.9-2). Because the historic Union Pacific Railroad grade has been buried or replaced by the modern railroad, the segment of the Union Pacific Railroad crossed by the project is not likely to be adversely impacted by project activities.

Table 3.9-2. Potential Impacts to Sites, AU-CH Transmission Line Rebuild

Site No.	Site Type	Owner	Potential Impacts		
			Access Road use and maintenance	**Structure removal**	**New structure construction**
48LA1237 Denver Pacific	Historic Railroad	Private	Road to 64-5		X
5WL2622	Historic homestead	Private	Transmission line road	58-4	X
5WL4830	Prehistoric tipi rings	Private	Transmission line road	57-2	X
5WL4831	Prehistoric tipi ring	Private			X
5WL1969.30* Union Pacific	Historic Railroad	Private			X*

* Potential project impacts occur in noncontributing sections of these sites

Two of the five historic properties in this section would be impacted by all three impact types. The remaining sites lie along the centerline for the section, and may be impacted by new structure construction. One site, the Denver Pacific Railroad Grade (48LA1237) is crossed by an access road. While use of Western's Standard Construction and Mitigation Practices 29 (Table 2.1-3, cut and archaeological monitoring) and 30 (avoid or archaeological monitoring) can mitigate impacts caused by structure removal and construction. The impacts associated with access roads would be mitigated with Mitigation Practice 31 (Table 2.1-3, limited use or archaeological mitigation) or through total avoidance.

Substations – Proposed Snowy Range Substation and Miracle Mile, Cheyenne, and Ault Substation Modifications

No sites were encountered in the proposed location for the Snowy Range Substation, and, consequently, no impacts to cultural resources are anticipated from the construction of the substation.

The proposed modifications to the Miracle Mile, Cheyenne and Ault substations are within the previously disturbed areas around the existing facilities and would not create further impacts to any cultural resources.

3.9.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Three significant sites lie along the segment of the CH-MM Alternative Route 1, Part A (see Table 3.9-3). Site 48AB152, the Lincoln Highway, and 48AB835, the Pioneer Canal, are crossed by CH-MM Alternate Route 1, Part A. In both cases, the segments of these eligible resources within the project area are considered noncontributing portions. Impacts to these sites are, therefore, considered to be of no adverse effect.

If this alternative is chosen, 48AB1395, also known as the Hill Homestead, falls along the proposed centerline. Specific structure placements have not been identified, but any potential impacts can be avoided by implementing Mitigation Practice 30 (Table 2.1-3): avoid or archaeological monitoring. Because the site is eligible under criterion d of the NRHP, and not based on its setting, and because an existing transmission line exists just off the site, no adverse impacts exist.

Table 3.9-3. Potential Impacts to Sites, CH-MM Alternative Route 1

Site No.	Site Type	Owner	Potential Impacts		
			Access Road use and maintenance	**Structure removal**	**New structure construction**
48AB1395	Historic homestead	Private			X
48AB152/48CR1191* Lincoln Highway	Historic Road				
48AB835* Pioneer Canal	Historic canal	Private and State			

* Potential project impacts occur in noncontributing sections of these sites

The CH-MM Alternative Route 1, Part B would also involve rebuilding the HJ-MM 115-kV transmission line along the existing CH-MM ROW (CH-MM Section 3). This would not impact any historic properties.

AU-CH Alternative Route 2

No sites were encountered on the two re-routes that constitute this alternative; consequently, no impacts to cultural resources are anticipated from the construction of either section. The selection of the AU-CH Alternative Route 2 would also involve removal of structures along the segment of the existing transmission line that would be abandoned (portions of AU-CH Section 2). This would not impact any eligible properties.

No Action Alternative

The No Action alternative would result in continued use of the transmission structures and access roads. Natural processes would continue to affect cultural resources, including the transmission line itself, although this alternative eliminates any direct project-related impacts. Continued use of the access roads across eligible sites and any needed maintenance of the roads would have to be considered an adverse effect of the No Action Alternative.

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3.10 Land Use – Existing and Planned

3.10.1 Affected Environment

The approximate 181 miles of the transmission line that would be rebuilt for the proposed project are located in Carbon, Albany, and Laramie Counties, Wyoming and Weld County, Colorado. Jurisdictions with lands affected by the transmission line rebuild include the Bureau of Land Management (BLM), Medicine Bow Divide Resource Area, Rawlins Field Office, Bureau of Reclamation (BOR), Carbon, Albany, and Laramie counties, Wyoming, Weld County, Colorado, the Cities of Laramie and Cheyenne, Wyoming, and other public lands in the State of Wyoming. The proposed rebuild would be located along the existing ROW of the CH-MM and AU-CH115-kV transmission line routes, unless route alternatives are selected. The current use of the project area includes transmission line easements.

The affected environment boundaries include the existing and proposed expansion of the ROWs, the substation sites, land uses that would be visually affected by the transmission line, and land uses that would have indirect impacts related to construction or operation activities (e.g. recreation areas) within 2 miles.

Existing Land Uses

CH-MM Project Area – From the Miracle Mile substation to Cheyenne substation the existing transmission line runs primarily through rural landscapes, except when it passes through the cities of Laramie and Cheyenne, Wyoming. The CH-MM and HJ-MM transmission lines share the same ROW corridor for most of the 146 miles of the CH-MM route. Outside the cities of Laramie and Cheyenne, the predominant land uses within close proximity of the proposed transmission line rebuild include public recreation and designated natural areas, open grazing lands and large ranches.

Recreational use is minimal except near Seminoe State Park and Reservoir. Dispersed hunting, fishing, and off road vehicle use on public lands may occur throughout the area. The Bennett Mountains Wilderness Study Area (WSA) is located immediately adjacent to the transmission line near Seminoe Reservoir and Seminoe State Park, near where the HJ-MM and CH-MM lines are combined on steel lattice structures (MP 3.5 to MP 11). The 6003-acre Bennett Mountain Wilderness Study Area was not recommended for Wilderness status in the 1992 report to Congress. The area is managed to preserve wilderness values until Congress makes a decision to either designate the area as wilderness or to release the area for non-wilderness management. Bennett Mountain Wilderness Study Area has steep rock ledges and several drainages that provide primitive unconfined recreation. Wilderness Area designation would preclude any new development within their boundary.

The five-mile segment of the North Platte River between Kortes Dam and Pathfinder Reservoir is known as the Miracle Mile. This segment has a national reputation as one of Wyoming's best trout fisheries. Primary activities along the 10 miles of shoreline include fishing, hunting, and camping. There are 11 primitive campsites along this stretch of the river, and dispersed camping is allowed throughout the area. The Miracle Mile is heavily used during holidays and weekends during the spring and summer. Spring is the best time to fish the area. In 2001 the estimated number of anglers from March through October was 14,342 (Mavrachas 2004). The Miracle Mile Ranch is the only lodging on the river with cabins and a store.

Most of the private land uses in the Carbon County part of the project area are large ranch properties. Several ranch residences are within close proximity of the line. Cultivated hay meadows are typically found in the draws along the creek beds, when water is available. The landscape is rolling with many draws, rock outcroppings, ridges, and bluffs. Vegetation is primarily sagebrush, rabbit brush and some juniper and pine. Ranch houses are few and far between, giving the area a sense of isolation. Other land uses in Carbon County include small coal bed methane operations near T24R80/81, mining, oil and gas, pipelines, transmission lines, communication corridors, wind energy, and wildlife habitat. The CH-MM transmission line crosses the Medicine Bow River three times in Carbon County.

Within the vicinity of Medicine Bow, Wyoming, an airport landing strip and an REA office building are located in close proximity of the line. There are few rural residences in proximity to the line; however a few ranch homesteads and unpaved landing strips are within view of the line.

From Medicine Bow east into Albany County, the transmission line is almost strictly located on rangeland with little change in topography and miles of open space. The line continues east through the flats and crosses several smaller creeks. Very few ranch residences are near the ROW. As the line approaches Laramie, more urban uses occur. Before the line reaches the Laramie Substation, the line crosses through an irrigated hay meadow, wetlands, an industrial area, near the City of Laramie wastewater treatment plant, and crosses the Union Pacific railroad tracks. The CH-MM line continues through Laramie on a ridge north of several residential subdivisions and the landfill. It continues through the Laramie Mountains, north of the Medicine Bow National Forest, again crossing large tracks of ranchland and enclaves of small acreage rural residential subdivisions. The line passes through a residential area called Gilchrist with a large number of rural residences near State Highway 210 before reaching Little America and Cheyenne.

Entering the City of Cheyenne, the transmission line crosses through a portion of the Little America Hotel and Convention Center, then crosses both I-80 and I-25 before heading through an industrial/office warehouse district. The transmission line then heads east across Parsley St., into an older residential area. The existing corridor is a designated utility corridor for transmission, distribution, and other utility lines (MP 145 through MP 146). Residents in the area store campers, boats, vehicles and other items within the ROW. Goins Elementary School and Johnson Junior High School are in close proximity of the line, but not in the ROW. Other uses in the area include railroad tracks, transportation corridors, commercial uses, and open land area. The Cheyenne substation is located adjacent to the older residential area.

A fair amount of development activity adjacent to or in visual proximity to the transmission line is proposed or under construction, particularly in Cheyenne. In addition, there is some residential development proposed in Laramie just south of the line. Most of the proposed activity is commercial/industrial in nature, with some residential uses currently under development or proposed. The developing and proposed development is discussed in Section 3.15.1 Reasonably Foreseeable Development.

Ault-Cheyenne Project Area – The AU-CH Rebuild project area crosses through mixed commercial, residential, and agricultural land uses. The AU-CH 115-kV transmission line heads south from the Cheyenne Substation through a new residential/office/commercial subdivision (Harmony), which is currently under construction. The line then passes through an older residential subdivision, Orchard Valley, to undeveloped land. After approximately a mile of undeveloped land, the transmission line crosses the Bison Crossing subdivision, which is a larger lot single-family residential development. Many houses are located immediately adjacent to the transmission line ROW, and some out buildings are actually located on the ROW. The transmission line continues south through the Winchester Hills subdivision, then to open rangeland. Table 3.10-1 shows the Milepost location of the subdivisions most affected.

Table 3.10-1. Location of Residential Subdivisions in Proximity of the AU-CH Transmission Line Rebuild ROW

Subdivision	Milepost	Developed (DD)/ Developing (D)
Harmony Point	MP 0 mile to ¼ mile	D
Harmony	MP ¼ mile to ¾ mile	D
Orchard Valley	MP ¾ mile to 1 mile	DD
Bison Crossing	MP 3 to MP 3 ¾	D/DD
Winchester Hills	MP 3 ¾ to MP 4	DD

Source: Kathol and Company, 2004.

Once outside of Cheyenne, the line crosses primarily agricultural land. From the outskirts of Cheyenne to the Ponnequin wind farm and beyond, land use is open range. Approximately 12 miles east of Cheyenne the Colorado Interstate Gas Company has a large compressor plant just west of State Highway 85 in the vicinity of the transmission line. Just south of Rockport, near MP 17 (starting from the Cheyenne substation), land use changes from open range to cultivated farmland. Lands are cultivated around the transmission lines. Other uses in the vicinity include grazing and goat farming. The terrain is flat with mostly cropland; however, some land has been left fallow in intermittent years.

Farmlands

The Farmland Protection Policy Act protects prime farmland from being converted to non-agricultural uses. The provisions of this act identify prime and unique farmlands for protection. Prime farmlands are those lands that have the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed and other agricultural crops with the minimum of fertilizer, fuel, pesticides, and labor, and without intolerable erosion. Unique farmlands are composed of land other than prime farmland that are used for producing specific high value food and fiber crops (wwww.nrcs.usda.gov). Although soil characteristics exist for prime farmland in Laramie County, no irrigated land is present, Carbon and Albany counties do not have any designated prime farmland due to the short growing season (Jelden, NRCS, 2004). According to the NRCS in Weld County, CO (Wicky 2004) prime farmland (irrigated) exists along the southern portion of the transmission line corridor, however, for the most part, the transmission line does not interfere with the cultivation of this land.

Land Ownership

Throughout the CH-MM and AU-CH project area numerous electrical transmission lines, pipelines, cellular towers, radio towers and railroads are evident. The line crosses predominately private land (140 miles - 77%). Private land ownership in the area is generally large landowners, operating large ranches. Some sections of state land (11.5 miles - 6.3%) are traversed throughout the project area. The western portion of the line (west of Medicine Bow) crosses intermittent sections of BLM land (29.3 miles - 16.2%), and some BOR land (0.5 miles) near Seminoe Reservoir.

Table 3.10-2 shows land ownership and miles of line within the ROW corridor.

Table 3.10-2. Ownership of Lands Crossed by the CH-MM and AU- CH Transmission Line (miles of line)

County	Private	BOR	BLM	State	Water	Total
CH-MM						
Carbon	34.2	0.5	23.2	0.8	0.1	58.8
Albany	45.2		6.1	4.3		55.6
Laramie	29.9			2.1		32.0
Total	**109.3**	**0.5**	**29.3**	**7.2**	**0.1**	**146.4**
AU-CH						
Laramie	7.8		0.1			7.9
Weld County	22.9			4.3		27.2
Total	**30.7**	**NA**	**0.1**	**4.3**		**35.1**
Total Both Projects	**140**	**0.5**	**29.4**	**11.5**	**0.1**	**181.5**

Source: Geographics, BLM Wyoming and Colorado State Office

Land Use Regulations

Federal public lands in the project area are managed according to the BLM's Great Divide Resource Management Plan (RMP) 1990. The RMP provides that all public lands be open to utility/transportation systems, and that utility systems be located next to existing facilities whenever possible. The plan would allow flexibility in placement of new utility/transportation systems yet prevent proliferation of new routes. Important and sensitive resource values would be protected by application of the Wyoming BLM standard mitigation guidelines with appropriate restrictions including avoiding high-value lands (BLM 1988). New utilities are discouraged from being built in certain areas. The areas of regulatory concern for the proposed project include the land area in the vicinity of the Seminoe and Pathfinder Reservoirs, which include Crucial Winter Range, and Recreation Areas. These areas preclude any utility development. The Bennett Mountain WSA is also adjacent to Western's existing ROW for the HJ-MM transmission line. Utilities and other types of development are not permitted in the WSA.

Land use plans and regulations for private lands in the project area are administered by the counties and cities. The transmission line rebuild is exempt from local land use regulation since the project is a federal transmission line. However, Western prefers to meet the substantive requirements of the local government standards and land use regulations whenever possible. The Land Use regulations which pertain to the transmission line route throughout the project area include the Carbon County Zoning Resolution, 2003; the Albany County Zoning Resolutions, September, 2002; Cheyenne City Code 2002; the Cheyenne and Laramie County Zoning Ordinance 1988, and Weld County Code Ordinance - 2000, 2001, 2002. The existing CH-MM and AU-CH transmission lines currently conform to all applicable land use codes and regulations.

Planned Land Uses and Developments

Section 3.15.1 (Reasonably Foreseeable Projects) describes the most recent submittals to the respective planning departments of potential upcoming projects within close proximity of the transmission line. The planned uses include natural resource developments (coalbed methane wells, wind turbines, underground coal mines), and urban uses such as fire stations, elderly housing and other industrial, commercial and residential uses. Many of these land uses are currently under development near the existing line.

3.10.2 Environmental Consequences and Mitigation Practices

3.10.2.1 Significance Criteria

Impacts to land use would be significant if the proposed project or alternatives:

- resulted in the termination or unauthorized change in land uses;
- were inconsistent with adopted land use plans or regulations of local, state, or federal agencies;
- resulted in long-term measurable impacts to the region's prime farmlands productivity; or caused long-term loss of economic viability of a farm or other business due to construction;
- directly impacted a designated wilderness area or wilderness study area;
- diminished recreation amenities, the quality of recreational experiences, or access to recreational facilities on a long-term basis.

3.10.2.2 Impacts of the Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

Existing Land Uses – Construction of the CH-MM transmission line rebuild would occur in Western's existing ROW. The width of the ROW would increase, on average, from 75 feet to 105 feet. However, near Laramie between MP 91 and MP 100, the ROW would increase from 50 feet to 105 feet for the new 230-kV wood structures. Existing land uses would not change; however, some land use restrictions may result due to the widening of the ROW for electrical clearances and safety standards.

Predominant land uses near the proposed transmission line rebuild include agricultural uses such as grazing and some cultivated lands. Other uses along the line include recreational, commercial, industrial, and residential. Over 77% of the land crossed is privately owned. The rebuild of the transmission line would not affect the economic viability of any of the agricultural uses within the project area in the long run or change the land uses along the ROW. Short-term impacts would include soil erosion, either by wind or water, and any contamination by release of regulated materials. Short-term impacts to some cropland may occur during construction activities. Western's Standard Construction and Mitigation Practices would be incorporated to reduce the potential impacts of soil compaction, erosion, and crop displacement during construction activities (Table 2.1-3, Mitigation Practices 1, 2, and 20). Impacts resulting from soil disturbances along the ROW would not be significant. The proposed project would not disrupt access to other public lands in the area or change the current condition of the existing transmission line. The transmission line rebuild would remain within the existing ROW, which currently traverses a 0.25-mile section of the northeastern boundary of Seminoe State Park and is adjacent to, but not within, the northwestern corner of the Bennett Mountains WSA. Visual impacts of the transmission line rebuild would be similar to the current visual condition, therefore would not have an increase in the visual effect on the overall aesthetic recreational experience (see Section 3.14). No significant recreational conflicts would result from the construction or operation of the proposed project.

Since the proposed project constitutes upgrading an existing transmission line, the project area is already being used for operation and maintenance of a transmission line. Neither construction nor operation of the transmission line would change the existing land uses within the project area.

However, short-term disruptions, particularly to existing residences and businesses due to increased noise, dust, and visual effects of project construction and equipment operations, may occur particularly along portions of CH-MM Section 4 (through Laramie – MP 97 through MP100) and CH-MM Section 5 (through Cheyenne- MP 143 through MP146) as described in Section 2.1.2 CH-MM Transmission Line Rebuild. The existing transmission line corridor would provide access for removal and rebuilding of the line. No new roads would be required.

From the Happy Jack Substation through the City of Cheyenne, from MP 140 through MP 146 the CH-MM and HJ-MM 115-kV wood structures would be replaced with new double-circuit 230/115-kV single pole steel structures. The existing ROW along this section is currently adequate for these structures. The new double circuit single pole steel structures would minimize the impact on existing land uses by reducing the existing ROW from 125 feet (with the two wood poles) to 105 feet. The reduction in ROW width would be considered a beneficial impact.

All current uses within the Western ROW are allowable uses according to Attachment 80-LM-04A, Allowable Uses Under Western ROW. Several housing units and some storage units are near or within the proposed ROW, but do not cause a public safety issue, impede maintenance of the transmission line, or affect the operation or maintenance of the transmission lines or structures. These uses would not be affected by the proposed project.

No long-term operation and maintenance impacts are anticipated. Because the line would likely operate more efficiently, routine maintenance may occur less frequently, therefore minimizing impacts to existing land uses.

Farmlands – There is no designated prime farmland in Carbon, Albany, or Laramie counties due to a short growing season or lack of surface irrigation waters (Jelden, NRCS, 2004). Short-term impacts to cultivated farmland from upgrading the transmission line would include some soil compaction. Short-term impacts would include soil erosion, either by wind or water, and any contamination by release of regulated materials. Short-term impacts to some cropland may occur during construction activities. Western's Standard Construction and Mitigation Practices would be incorporated to reduce the potential impacts of soil compaction, erosion, and crop displacement during construction activities (Mitigation Practices 1, 2, and 20, Table 2.1-3). Impacts resulting from soil disturbances along the ROW would not be significant.

Land Use Plans and Regulations – The transmission line rebuild would conform to land use regulations for Carbon, Albany, and Laramie Counties in Wyoming. Citations for land use conformance include:

Carbon County Zoning Resolution, 2003, Chapter 4, Section 4.2, which allows public utilities (both overhead and underground) to be built on land zoned ranching, agricultural and mining;
Albany County Zoning Resolutions, September 2002, Section 5. Telecommunications and Utility Overlay Zone and City of Laramie Municipal Code, updated from 1964, Sections 17.14.010 permitted uses in LR, RI, R2, and R2M districts;
Cheyenne City Code 2002 Section 17.116.110 and 17.116.120 (Utility Regulations - Essential service utilities are a use by right); and,
Cheyenne and Laramie County Zoning Ordinance, 1988, Section 55.050 and Section 55.060, which states essentially what the Cheyenne City Code states.

These land use regulations state that essential service utilities are a use by right. Disruption to existing land users is minimized by the location of the transmission line design by Western.

The proposed project conforms with the BLM's Great Divide Resource Management Plan 1990, which provides that all public lands be open to utility/transportation systems, and that utility systems be located next to existing facilities whenever possible.

Planned Land Uses and Developments – Planned land uses identified in 3.15.1 would not be directly impacted with the construction or operation of the proposed CH-MM transmission line rebuild, since the line would be built along the same transmission line ROW. Many of the proposed or developing projects are located near the existing line, therefore, the impacts would be no different from the current situation. Along CH-MM Section 5, where the proposed project would consist of replacing both the CH-MM and HJ-MM wood pole H-frame structures with one set of double circuit single pole steel structures, impacts would be minimized to existing and developing subdivisions because the ROW would not be widened through this urban area. In addition, the proposed project would result in an overall slight reduction in the number of structures (700-800 foot span for wood H-frame to 1,000-foot span for single pole steel structure). Consequently, the proposed project would be compatible with future land uses and no significant adverse land use impacts from construction or operations are expected from the proposed project.

Transmission System - AU-CH Transmission Line Rebuild

Existing Land Uses – Impacts to land use for the AU-CH Transmission Line Rebuild would be similar to those described for the CH-MM Transmission Line Rebuild. Since the proposed project constitutes upgrading an existing transmission line, the project area is already being used for operation and maintenance of a transmission facility. Neither construction nor operation of the transmission line would change the existing land uses within the project area. However, short-term disruptions to existing residences and businesses due to increased noise, dust, and visual effects of project construction and equipment operations may occur particularly along portions of the AU-CH Section 1 (south of Cheyenne – MP 1 through MP 4) as described in Section 2.1.2 AU-CH Transmission Line Rebuild. Along AU-CH Section 2, although the ROW would be expanded from an average of 75 feet to 105 feet, the span between structures would also be increased from 700-800 feet to 1000 feet. This would be a minor net beneficial impact for areas under cultivation. There would be no change in existing land use, thus no significant impact.

Farmlands – According to the NRCS in Weld County, CO (Wicky 2004) prime farmland soil types exist along the southern portion of the existing transmission line ROW. Cultivation of agricultural and prime farmland exists within the ROW, and no pivot irrigation system occurs in the project area. Short-term impacts to cultivated farmland from upgrading the transmission line would include the potential for disrupting agricultural operations and soil compaction. Long-term impacts would include the permanent loss of agricultural land for structures, and on-going limitations to agricultural operations, including increased weed control at structure sites. Short-term impacts to cropland may occur during construction activities due to the removal of existing H-frame structures, and the installation of new steel pole structures and new H-frame structures. Western would coordinate with landowners to minimize disruption to agricultural operations to the extent feasible. Western routinely settles damage claims with land owners for loss of crops or reduced productivity resulting from soil compaction (Mitigation Practice 20, Table 2.1-3).

Western's Standard Construction and Mitigation Practices would be incorporated to reduce the potential impacts of soil compaction, erosion, and crop displacement during construction activities (Mitigation Practices 1, 2, and 20, Table 2.1-3).

Long-term impacts to agriculture would range from beneficial to slightly adverse compared to the existing conditions. Beneficial impacts to agriculture would occur in AU-CH Segments 1 and 2.

Along these segments, the proposed project consists of replacing existing H-frame structures with new single pole steel structures. These changes would result in slightly beneficial effects to agricultural land and operations Beneficial effects would result since the single pole steel structures have a longer span length and smaller “footprint’ than the H-frame structures that would be removed. Consequently, less land would be permanently removed from production. Farming equipment and operations would also benefit, since there would be fewer structures in fields and equipment would be able to turn around easier. There would also be greater height clearance under the conductors for farm equipment. Weeds would also be easier to control around single pole steel structures, compared to the existing H-frame structures, that can create uncultivated islands between the poles. Some adverse impacts would also occur in Section 2, however. Along this segment, fields may be more difficult to spray for pesticides since the increased height and position of the new structures may pose obstacles.

In Section 3, between MP 32.1 and 35, slightly adverse impacts to agriculture and agricultural operations would result from increased land removed from production for new H-frame structures. Located adjacent to the existing lattice structure, the new H-frame structures would result in less land available for cultivation and increased time needed in performing agricultural operations. Similar to Segment 2, the proposed project may also cause impacts to the effectiveness of agricultural spraying of pesticides, due to the differences in height and position of the lattice and H-frame structures.

No long-term operation and maintenance impacts are anticipated. Because the line would likely operate more efficiently, routine maintenance may occur less frequently, therefore minimizing any impacts to existing land uses.

Land Use Plans and Regulations – The transmission line rebuild conforms to land use regulations for Laramie County and City of Cheyenne, Wyoming, and Weld County in Colorado. The land use codes for Laramie County and the City of Cheyenne are cited in the section above and the Weld County Code citation is Article III - Zone District Division 1A zone Section 23-3-20, Uses Allowed by Right. A Special Use Permit may be required as a 1041 - Special Use Permit Section 21-3-20 or Section 23-1-90.

Planned Land Uses and Developments – Planned land uses should not be impacted by the transmission line rebuild. In some cases, particularly along AU-CH Section 1, where the replacement of the wood H-frame structures with the single pole steel structures would occur in existing and developing subdivisions, the impacts may be minimized because of a reduction in structures (700-800 foot span for wood H-frame to 1,000-foot span for single pole steel) and a potential improvement in the visual impacts of the transmission structures due to an increase in height and decrease in breath of the structure. No significant adverse land use impacts from construction or operations are expected from the proposed project because the transmission line rebuild is compatible with land use plans and regulations and does not interfere with future development within the project area.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

The proposed Snowy Range Substation would be located east of 9th Street in Laramie along a ridge north of the City of Laramie. Current land uses in the vicinity are grazing, open land area, a corral, and residential uses south within the city limits of Laramie. Recreational activity is limited to dispersed recreation such as walking and mountain bike riding in close proximity of the City of Laramie at the Snowy Range Substation. The existing transmission line runs immediately adjacent to the proposed site. Other land uses in the area would not be impacted by the proposed facility. The proposed facility would conform to all City of Laramie Planning and Zoning regulations as cited above. There are no planned uses within the vicinity of the proposed substation. No significant adverse land use impacts from construction or operations are expected from the proposed Snowy Range Substation.

The minor modifications proposed for the Miracle Mile, Cheyenne, and Ault Substations would not impact existing or proposed land uses in the project area. All substation changes would be within the existing fenced substation facility.

3.10.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Impacts from the CH-MM Alternative Route 1 would be similar to the proposed project. No additional land uses would be impacted. CH-MM Alternative Route 1, Part A, would be constructed on the existing HJ-MM ROW and Part B would be constructed on the existing CH-MM ROW. On Part B, between MP 97 and MP 99 the use of single circuit single pole steel structures would reduce the impact to a hay meadow and wetlands located in this area. The increased span of the single pole steel structures would reduce the number of structures located within this agricultural, industrial, and residential (east of U.S. 287) area, which could beneficially impact land uses. Reduced maintenance activity would also alleviate impacts to all land uses in the area of CH-MM Alternative Route 1, Part A and Part B. The ROW would increase from 50 feet to 70 feet for the 115-kV wood H-frame and 115-kV single pole steel structures and 50 feet to 105 feet for the 230-kV structures. Short-term land disturbance would be slightly more than for the proposed project (438 acres versus 414 acres) However, long-term disturbance would be minimal and the same as for the proposed project (0.9 acre).

Land owners and businesses located along Part B of the new 115-kV HJ-MM transmission line would experience short-term land use disruptions during the construction of the new portion of the line. However, there would be no long-term changes to current land uses or impacts to agricultural use. Operation and maintenance of the line would be similar to the current situation, but would require less on-site maintenance due to the improved efficiency of the line and the new structures. CH-MM Alternative Route 1 would conform to all Albany County and City of Laramie planning and zoning regulations. No planned land uses would be impacted by this alternative.

CH-MM Alternative Route 1 allows Western to use the existing ROW of the HJ-MM 115-kV line section under Part A for the CH-MM transmission line rebuild, rather than incur the cost of new ROW in parallel with the existing line. Rebuilding Part B, from Snowy Range Substation to the west line split, allows Western to remove the existing CH-MM line and to rebuild the new portion of the 115-kV HJ-MM transmission line, again using the existing CH-MM transmission line ROW. No significant impact would result from CH-MM Alternative Route 1.

AU-CH Alternative Route 2

The AU-CH Alternative Route 2 provides an opportunity to straighten transmission line in two locations. The two reroutes would improve the existing alignment of the AU-CH transmission line, which would reduce the impact to the surrounding land uses.

These realignments would reduce the impacts to agricultural lands along the alignments and would provide efficiency in maintenance and access of the adjacent lines as compared to the proposed project. No additional land uses would be impacted. The improved alignments would reduce the impacts on existing land uses and would conform to Weld County planning and zoning regulations. No planned land uses would be impacted by this alternative. The consolidated ROW would have beneficial effects for the land owner in terms of more efficient use of their agricultural land.

Construction activities from the AU-CH Alternative Route 2 would have less impact on existing agricultural operations than the proposed project due to location of the re-route off agricultural land onto the county road ROW easement. Long-term beneficial effects would result to agricultural use with the re-route. Operation and maintenance of the line would be similar to the current situation, but would require less on-site maintenance due to the improved efficiency of the line.

No Action Alternative

Under the No Action alternative, no changes to the existing CH-MM and AU-CH transmission lines or substation facilities would occur. From a land use perspective, no additional land uses would be impacted. However, maintenance of the existing lines and substation may increase. Increased maintenance may require increased access to the ROW and more maintenance activities along the ROW, which could affect residences and other commercial, industrial, or agricultural land uses. However, no significant adverse land use impacts are expected from the No Action Alternative.

3.11 Socioeconomics and Community Resources

3.11.1 Affected Environment

This section addresses historical and present socioeconomic conditions in the four counties that would be affected by the proposed transmission line rebuild. The project area includes the regional and local community settings. Topics reviewed include population, employment and income, and housing. Tables 3.11-1 through 3.11-4 summarize baseline conditions within the four-county area. The only urban communities affected by the transmission line rebuild are Laramie in Albany County and Cheyenne in Laramie County, both in Wyoming. This section of the EA also addresses issues related to Environmental Justice, as required under Executive Order 12898.

3.11.1.1 Demographics

Employment and Income

The project area has a diverse economic base, with the greatest percentages of total employment occurring in the services, government, and retail trade sectors, except for Weld County, which has a large manufacturing sector (U.S. Dept. of Commerce, BEA, 2003).

Employment and unemployment for 2003 in each of the counties within the project area is shown in Table 3.11-1. Carbon County had an estimated unemployment rate of 5.6 percent in 2003, Albany County 1.9 percent, Laramie County 4.1 percent, and Weld County 5.7 percent. Unemployment rates reflect an improving economy throughout the region, with increased activity in the Mining Sector in Carbon County and in the Services Sector in the other three counties. The total labor force for the four-county area is estimated at over 173,837.

Table 3.11-1. Labor Force Summary 2003

County	Labor force	Employed	Unemployed	%
Carbon County	8,121	7,670	451	5.6
Albany County	19,704	19,322	382	1.9
Laramie City	16,960	16,641	319	1.9
Laramie County	44,132	42,314	1,818	4.1
Cheyenne	30,991	29,731	1,260	4.1
Weld County	101,880	62,987	3,806	5.7

Source: Wyoming Dept of Employment, Research and Planning, Bureau of Labor Statistics, Colorado Labor Market Information

The employment by industrial sector is shown in the Table 3.11-2. The construction sector represents 8.4 percent of total employment (137,335), with over 11,546 employed in the construction sector within the four counties.

Average weekly wage in the construction trade in Wyoming was $658 in 2003 compared to $681 in Colorado (Wyoming Department of Employment Occupational Employment and Wages; and Colorado Dept of Labor and Employment: Employment and Wages). Average annual earnings per job in the affected counties was $26,681 in Carbon County, $26,773 in Albany County, $33,987 in Laramie County, Wyoming, and $31,104 in Weld County, Colorado in 2002.

Table 3.11-2. Full and Part-Time Employment by Type and Industry (NAICS) – 2002

	Carbon County	%	Albany County	%	Laramie County	%	Weld County	%
Ag, For, Fish	143	1.6	95	<1	D		3,322	4.6
Mining	235	2.6	29	<1	193	<1	1,362	1.9
Construction	637	7.0	1,088	5.3	3,426	6.2	6,395	8.8
Manuf.	551	6.0	710	3.4	1,694	3.1	10,435	14.4
T.U.P.U.	591	6.5	D		2,479	4.5	1,922	2.7
Wholesale Trade	173	1.9	235	1.1	898	1.6	3,242	4.5
Retail Trade	1119	12.2	2,254	10.9	7,185	13.1	7,830	10.8
F.I.R.E.	624	6.8	597	2.9	4,621	8.4	3,837	5.3
Services	2537	27.8	5,094	24.7	14,728	26.8	21,338	29.4
Government	2238	24.5	7,254	35.2	15,867	28.9	11,730	16.2
Total Industry	9,140		20,628		54,917		72,650	

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, 2003

Demographic Trends

<u>Population</u> – Population for the project area is shown on Table 3.11-3. Population in Carbon County has decreased by 8.2 percent between 1990 and 2003, increased by 3.5 percent in Albany County, and 15.0 percent in Laramie County. Wyoming as a whole has generally shown either slow growth or no growth in recent history. Weld County is one of the fastest growing counties in the US and showed a 53.5 percent increase from 1990 to 2003.

Table 3.11-3. Population Growth in the Project Area

	1990	2000	2003	% Increase 1990-2003
State of Wyoming	453,588	493,782	501,242	10.5
Carbon County	16,659	15,639	15,302	(8.2)
Albany County	30,797	32,014	31,887	3.5
Laramie	26,687	27,204	26,956	1.0
Laramie County	73,142	81,607	84,083	15.0
Cheyenne	50,008	53,011	54,374	8.7
Weld County	131,821	180,936	202,329	53.5

Source: U.S. Bureau of the Census, Wyoming Economic Analysis Division, Colorado Division of Local Government

The race composition of the project area is composed primarily of White or Hispanic ethnic background. The Carbon County population is 82.4 percent White and 13.8 percent Hispanic, Albany County is 87.5 percent White and 7.5 percent Hispanic, Laramie County is 83.3 percent White and 10.9 percent Hispanic, and Weld County is 70 percent White and 27 percent Hispanic (US Bureau of Census, 2000).

Housing

The CH-MM Transmission Line is located within close proximity to the cities of Cheyenne and Laramie, which have a large number of short-term housing accommodations. Laramie has over 20 motels with an estimated 1,015 rooms and 105 spaces at the KOA campground; Cheyenne has 22 motels with more than 2,200 rooms and 750 campsites. These towns are within commuting distance of the transmission line project. In addition, Medicine Bow has two motels with 33 units; Rock River has one motel with eight units and a campground, Arlington has 35 campsites.

Campsites (94) are available at Seminoe State Park. No RV hook-ups are available in the State Park. Travel trailers are allowed in public campsites. Dispersed camping is allowed on all BLM and Bureau of Reclamation (BOR) lands except within the Moran Creek Big Game Winter Range. In addition, there are several public and private campgrounds throughout the area that provide campgrounds facilities for transient workers. Other temporary accommodations are available along the transmission line route

From Cheyenne to Ault there is adequate temporary housing in Cheyenne, Greeley, Wellington, Windsor, and Fort Collins. Fort Collins has over 22 motels with over 2,200 rooms. Greeley has over 17 motels with over 800 rooms. In addition, Wellington and Windsor have temporary accommodations.

In addition to temporary housing there is adequate permanent housing within commuting distance of the route throughout the project area.

3.11.1.2 Public Services

Public Services throughout the project area are provided by various private and public entities, including counties, municipalities, special districts and private interests. Because of the minimal level of population impacts anticipated during the construction phase of the project, only public facilities that might potentially be impacted by accidents of transmission line construction will be covered in this section.

Emergency Services - Law Enforcement and Hospital

Emergency services provided in Carbon County, Albany County, Laramie County, Wyoming, and Weld County, Colorado include fire, sheriff and police, ambulance, and hospital services.

Law enforcement services are provided by the Carbon, Albany, Laramie and Weld County Sheriff’s Departments and the Cities/Towns of Cheyenne, Laramie, Greeley, Ault, Pierce, and Eaton police departments. Officers are stationed in Rawlins, Medicine Bow, Laramie, Cheyenne in Wyoming and the Weld County sheriff is located in Greeley. Fire protection is provided by the Carbon County Fire Department, Medicine Bow Volunteer Fire Department, Union Colony Fire Rescue Department, and the Cities of Cheyenne, Laramie, and Ault-Pierce fire departments.

There are six hospitals in the project area within close proximity of the transmission line: two in Cheyenne (Spalding Rehab and United Medical Center); one in Laramie (Ivinson Memorial Hospital); one in Rawlins (Memorial Hospital of Carbon County); one in Weld County (North Colorado Medical Center), and one in Fort Collins (Poudre Valley Hospital).

3.11.1.3 Environmental Justice

Under Executive Order 12898 (published in the Federal Register February 11, 1994), federal agencies are required to identify and address disproportionately high or adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. A specific consideration of equity and fairness in resource decision-making is encompassed in the issue of environmental justice. As required by law and Title VI, all federal actions will consider potentially disproportionate negative impacts on minority or low-income communities. Within the area potentially affected by the proposed project, minimal minority populations are affected. During the EA process, particular efforts were made to ensure that property owners within the affected areas were informed of the proposed project, the EA procedures, and the opportunity to provide comments.

Income levels throughout the project area are diverse. The most recent estimate of per capita personal income was in 2002, and shows a range of $24,495 in Weld County, Colorado to $30,949 in Laramie County. These numbers reflect the disparity of incomes in the more agricultural-oriented Weld County compared to more urban Laramie County. The most recent poverty status statistics are from the 2000 census data and may not reflect the current conditions, however, these data showed poverty status for 11.9 percent (1,744) of the population in Carbon County, 13.2 percent (3,960) in Albany County, 10.3 percent (8,158) in Laramie County, and 12.5 percent in Weld County (US Bureau of the Census 2000). Since the economic base of the western portion of the project area is largely rural agriculture and the eastern portion more diverse, low-income areas are dispersed within the project area. People within the poverty status may reside along the route, but not disproportionately.

Table 3.11-4 highlights demographic statistics for identifying potential areas of concern. The 2000 Census data was used for the analysis of race and income data was used for analysis of poverty.

Table 3.11-4. 2000 Census Community Statistics for Environmental Justice Analysis

Percent of Population	Wyoming	Colorado	Carbon	Albany	Laramie	Weld
Persons Below Poverty Level	54,214	400,017	1,744	3,960	8,158	22,617
Percent Below Poverty	11.2	9.3	11.9	13.2	10.3	12.5
White	92.1	74.5	90.1	91.3	88.9	70.0
Black	0.8	3.8	0.7	1.1	2.6	0.6
American Indian	2.3	1.0	1.3	1.0	0.8	0.9
Asian	0.6	2.2	0.7	1.7	1.0	0.8
Native Hawaiian or Pacific Islander	0.1	0.1	0.1	0.1	0.1	0.1
Other Race	4.3	7.2	7.3	4.8	6.6	13.3
Hispanic Origin (of any race)	6.4	17.1	13.8	7.5	10.9	27.0

3.11.2 Environmental Consequences and Mitigation Practices

3.11.2.1 Significance Criteria

Impacts to socioeconomics would be significant if:

- temporary tourist housing is impacted by construction workers;
- minority or low-income populations are disproportionately affected by the transmission line rebuild.

3.11.2.2 Impacts of the Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

Construction – The construction phase of the project is anticipated to begin in 2007 and end in 2009 on the various segments of the line. The workforce would average 5-6 people per crew with 2 to 5 crews working 10-hour days (Trujillo 2004). It is anticipated that the workforce would be mostly local if a local contractor is hired and 60% to 70% non-local if an out-of-state contractor is hired. Construction workers would likely stay in RV campers or short-term rental units in different locations along the route. If local, some workers would commute to and from their permanent residence on a daily basis if within one hour of the show-up area.

One to three staging areas of 5 acres each would be designated for each section of line built. The approved contractor would negotiate the location of the staging areas. The staging areas are typically on private land and would not affect transportation or use of public lands.

Wage rates for the skilled and unskilled construction workers range from $8.52 per hour for laborers to $27 per hour for line construction workers including benefits. A portion of this income would be spent in the local area of the transmission line construction for goods and services. This would have a positive impact on local businesses such as restaurants, service stations, and miscellaneous retail stores. In addition to local expenditures near the transmission line route, workers would also be contributing to their local economy in the form of local expenditures for goods, services, housing, insurance, entertainment, and food.

Total project cost is estimated at $62.5 million (WAPA 2004). A portion of this would be spent in the local area diesel fuel, fuel oil and miscellaneous supplies and repairs (Trujillo 2004). This would be considered a positive impact to the local economy. Private land owners would be reimbursed for the increase in ROW and also for any crop losses from construction activities.

Based on information provided in Section 3.11.1 Housing, temporary accommodations provided in the project area are more than adequate for the estimated 20 to 25 short-term employees.

Emergency Services including fire, police, ambulance, and hospital services would not be impacted by increases in population or employment during the construction phase of the proposed project. The only impacts that would affect the provision of emergency services within the project area would be a construction accident or possibly traffic impedance for short periods of time. Basic medical and emergency services, which may be required in the event of an accident, are available throughout the project area as described in Section 3.11.1.2.

Due to the minimal number of construction workforce (20 to 25 maximum for all crews), it is not anticipated that temporary tourist housing would be affected. Thus, there would not be significant impacts on the local area population, employment, housing, or infrastructure.

The operations phase of the project would have little or no impact on population, employment, housing, or local infrastructure. The same numbers of operations workers would maintain the rebuilt line. Maintenance activity could actually be less, considering the improved reliability of the rebuilt line.

Transmission System - AU-CH Transmission Line Rebuild

Impacts would be similar to those described for the CH-MM transmission line rebuild.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne, and Ault Substation Modifications

Impacts would be similar to those described for the CH-MM transmission line rebuild.

The construction workforce associated with construction of the Snowy Range substation in Laramie would range from 6 to 40 peak employees (Trujillo 2004). If the contractor is local most workers would commute to and from their permanent residences. If the contractor were non-local, a portion (70%) of the workforce would relocate to the area for the duration of the construction activity. These workers would need to find temporary housing in Laramie or Cheyenne. Income generated in the form of direct wages to employees, and direct expenditures by the contractor would be filtered into the local economy. Adequate facility and services exist in Laramie or Cheyenne to provide adequate services to the temporary population as described in sections 3.11.1.1 and 3.11.1.2. No significant socioeconomic impacts would occur.

3.11.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

Impacts would be similar to those described for the CH-MM Transmission Line Rebuild.

AU-CH Alternative Route 2

Impacts would be similar to those described for the CH-MM transmission line rebuild.

No Action Alternative

The No Action Alternative would preclude average employment for an estimated construction workforce of 20 for the proposed transmission line and a maximum of 32 for the Snowy Range Substation and Substation modifications. Income generated in the form of direct wages to employees and direct expenditures by the transmission line contractor and Western would not be filtered into the local economies adjacent to the route. However, maintenance workers would actively be maintaining the line and maintenance expenditures in the area would occur as is the current situation.

3.11.2.4 Environmental Justice

Neither low income (poverty status) nor minority populations would be disproportionately impacted by the proposed project or any of the alternatives. As described in the Environmental Justice section (3.11.1.3) of the Environmental Setting, the economic base of the area is predominately agriculture and natural resource development except in the cities of Laramie and Cheyenne. Segments of the population are lower income, particularly in rural farm communities, due to a typically lower income generated in the agricultural sector. However, families within the defined poverty status represent less than 14 percent (in 2000) and are dispersed throughout the project area. No new properties would be impacted by the transmission line rebuild.

The proposed project would not have a disproportionately high or adverse effect on minority and/or low-income populations or corresponding property values of minority or low-income populations. No significant impact to low-income or minority populations would occur.

3.12 Transportation and Communications

3.12.1 Affected Environment

The project area for transportation and communications includes the regional and local area that may be used to access the project ROW and substation sites. The transportation system in the project area is predominantly automobile oriented, relying almost exclusively on public roads and highways. Surface transportation in the area is provided by a network of primary, secondary, and local roads. The project area is served by two interstate highways (I-80 and I-25), two US Highways (US 287/30 in Wyoming and US 85 in Colorado), four Wyoming State routes (SR 223, 210, 13, and 487), one Colorado State Route (SR14) and several local BLM and Carbon County roads (CR- 121, 270, 351, BLM 3159, 3109) in Carbon County. Between Medicine Bow and Seminoe State Park, only local Carbon County or BLM light duty roads provide access to the ROW. In Albany and Laramie counties various ranch roads provide some access to the transmission line. In Albany County the transmission line crosses over State Route 13 near Arlington and County Rd. 17 in Laramie. Otherwise undesignated roads and Western's access routes are the access to the line except in the urban areas. From Cheyenne to Ault access is limited until Weld County Rd. 27 parallels the line nearly to the Ault Substation.

The primary Interstates, U.S. Highways, and State Routes are hard surface and well maintained. Carbon County Road 351 is currently being upgraded to the Seminoe dam where the BOR takes over maintenance of the road. Up to this point the state route is paved and in excellent condition. Other County and BLM roads providing access to the transmission line (CR- 121, 270 and BLM 3159, 3109) are not regularly maintained and are generally considered in poor to fair condition depending on the season and how often road maintenance crews are in the area. These access roads are not heavily used and are not maintained often. Ranchers, agency personnel and some hunters, fishermen, and other dispersed recreationists utilize these roads (Clair 2004).

3.12.2 Environmental Consequences and Mitigation Practices

3.12.2.1 Significance Criteria

Impacts to transportation would be significant if:

- use of public highways and roads was restricted, resulting in adverse impacts to emergency response capability or economic hardships to local businesses.

3.12.2.2 Impacts of Proposed Project

Transmission System - CH-MM Transmission Line Rebuild

Impacts to transportation would be associated with construction-related traffic on the major and local transportation systems within the project area. Large truck traffic and traffic associated with employees traveling to and from the job site on a daily basis would potentially impact the transportation systems within the area.

For the proposed project, one to three staging areas per segment of transmission line would be located along the route (Trujillo 2004). Construction materials would be stored at the temporary staging areas. Materials would be hauled to the staging areas using existing roads and streets.

Generally the contractor negotiates staging areas with a private landowner. At this time the staging areas are not known, however, it would be assumed that they would be located on private land easily accessible from a major transportation route and would not impact public property or public access routes.

Two to five construction crews (including demolition, hauling/framing, setting, and stringing), with up to 5 persons per crew, would travel to and from the respective show-up area (where the job trailer is located) each morning and evening. The show-up area is not the same as the staging area. Based on the number of workers per crew, the peak construction workforce would be a maximum of 25 vehicles. Some workers would carpool to and from the show-up area from where they are residing, reducing the number of vehicles on the roadways. Crews would work a 10-hour day (from sun-up to sun-down). On average the construction crews could complete 10 to 12 structures per day, however, the 2 to 5 crews are working on different components of the line (demolition, hauling, setting, or stringing), therefore progress along the route would range widely, from 4 to 8 miles per month (Trujillo 2004). Other construction traffic would also be utilizing the transportation system at this time of day, but traffic along the route is moderate to low.

The routes that would be affected from transportation of materials and workers for the CH-MM Transmission Line Rebuild would potentially include (I-80 and I-25), two US Highways (US 287/30 in Wyoming, four Wyoming State routes (SR 223, 210, 13, and 487), and several local BLM and Carbon County roads (CR- 121, 270, 351, BLM 3159, 3109) in Carbon County. Between Medicine Bow and Seminoe State Park, only local Carbon County or BLM light duty roads provide access to the ROW. Otherwise undesignated roads and Western's access routes provide direct access along the ROW, except in the urban areas where local streets in Laramie and Cheyenne would be impacted by truck traffic and worker vehicle traffic. No new access routes would be constructed.

Traffic impacts related to truck transportation of materials and supplies would be sporadic throughout the demolition and construction periods. Structures would be removed and stockpiled along the route, then removed altogether from the area during demolition. New structures would be stockpiled at staging areas and brought to the construction site either assembled or partially assembled. Typically equipment used in dismantling and construction of the transmission line include the following: pick-up trucks, blade, tractor trailer, hydrocrane, flat bed truck, tractor with auger, bobcat backhoe, crane (50- to 100-ton capacity), reel trailer, tensioner, puller, digger, winch truck, bucket truck, and hydroseeder. Generally, a maximum of 4 trucks would be at a particular site location at any one time, considering the sequential manner in which demolition and construction occurs.

Only minor traffic delays or interference with the project area highway system would result from project construction. Transmission line removal and construction techniques should not require even temporary closure of main highways. Users of smaller gravel access routes or local collector streets may experience some minor delays. Western would work closely with state and county road departments, so that crossings are posted and detours provided where necessary (Mitigation Practice 17, Table 2.1-3).

The highways providing access to the transmission line ROW have adequate capacity to handle both construction worker traffic and truck traffic associated with demolition and construction of the rebuilt line. It is not anticipated that any significant impacts would occur to the transportation or communication systems within the project area due to the short duration of the construction activity. However, potential impacts may occur on dirt roads from transport during wet weather conditions. Mitigation Practices 1 and 2 from Table 2.1-3 would be implemented to minimize these impacts. No emergency access would be impeded or permanent changes to the transportation or utility systems would occur. Western's Standard Construction and Mitigation Practice 17 (Table 2.1-3) would be implemented to reduce the impacts to transportation.

Construction activity within residential neighborhoods may cause short-term traffic delays during material hauling and other construction operations. These impacts would not be considered significant due to the short duration.

Operation and maintenance of the line would likely require fewer trips with the rebuild due to the improved efficiency of the line. Transportation impacts would be reduced with the proposed project.

Transmission System - AU-CH Transmission Line Rebuild

Impacts for the AU-CH segment of the transmission line rebuild would be similar to those discussed for the CH-MM transmission line rebuild.

The routes that would be affected from transportation of materials and workers would potentially include (I-80 and I-25), US 85 (in Colorado), one Colorado State Route (SR14) and Weld County Rd. 27, which parallels the line nearly to the Ault Substation. Local streets in Cheyenne would also be impacted during demolition and construction activities, but the impacts would not be considered significant due to implementation of Mitigation Practice 17 (Table 2.1-3) and efforts to minimize traffic delays and road damage.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne, and Ault Substation Modifications.

Construction of the proposed Snowy Range substation would require approximately one year with a peak labor force of 40. Construction workers would likely live in Laramie or Cheyenne for the short-term construction period and would commute to and from the job site. The transportation system in Laramie is adequate to handle both material hauling and commuter traffic to the proposed site. Traffic delays from construction activity, impacts to emergency access, and/or impacts to roadways or communications systems are not anticipated from construction or operation activities on the proposed Snowy Range Substation or modifications to the Miracle Mile, Cheyenne, or Ault substations.

3.12.2.3 Impacts of Alternatives

CH-MM Alternative Route 1

Impacts would be similar to those described for the CH-MM Transmission Line Rebuild. Construction activity would occur along CH-MM Alternative Route 1 Part A in 2007 and Part B in 2008. Some minor traffic delays may occur along U.S. Highway 287 and on local collector and arterial routes within the City of Laramie during the construction period.

CH-AU Alternative Route 2

The impacts of Alternative Route 2 would be similar to those described for the AU-CH transmission line rebuild.

No Action Alternative

The existing transportation system would remain the same in the region with the No Action Alternative. Traffic volume would increase concurrent with the growth patterns of the area. Current access on improved dirt, four wheel drive, and high clearance roads to the transmission line ROW and substations would not change. However, more frequent failure of the lines would cause increased traffic along state routes and access routes for maintenance purposes.

3.13 Visual Resources

3.13.1 Affected Environment

3.13.1.1 Introduction and Definition of Terms

Visual resources consist of landforms, vegetation, rock and water features and cultural modifications that create the visual character and sensitivity of landscapes. Important visual resources are areas that have landscape qualities of unusual or intrinsic scenic value and areas of human and cultural use that are valued for their visual settings. Factors considered in evaluating the importance of visual resources include the following:

Visual Quality is defined as the overall visual impression or attractiveness of an area, considering the variety, vividness, coherence, harmony or pattern of landscape features. Visual quality is defined according to three levels in the EA – *Distinctive*, resources that are unique or exemplary in quality; *Representative*, resources that are typical of the physiographic region and commonly encountered; and *Indistinctive*, those landscape or cultural areas that either lack visual resource amenities or have been degraded.

Visual Sensitivity is defined as a measure of an area's potential sensitivity to visual change, considering types of viewers and viewer exposure. Visual sensitivity considers viewer types and volumes, as well as viewing distance zones. Areas and associated viewer types considered to be potentially sensitive to visual changes include: park, recreation and wilderness study areas, major travel routes, and residential areas. Three distance zones are discussed for potentially sensitive view areas – *foreground* (within .5 mile), *middleground* (within .5 to 2.0 miles) and *background* (beyond 2.0 miles).

Visual Resource Management Classes – VRM classes are assigned by the BLM through the Resource Management Plans (RMPs). Four classes have been identified by the BLM as described below.

- Class I – The objective of this class is to preserve the existing character of the landscape. The class provides for natural ecological changes. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II – The objective of class II is to retain the existing character of the landscape. The level of visual change should be low. Management activities may be seen, but should not attract the attention of the casual observer.
- Class III – The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer.
- Class IV – The objective of this class is to provide for management activities that require major modification to the existing character of the landscape. The level of change to the characteristic landscape can be high. Overview of the Project Area – Visual Quality, Visual Sensitivity and BLM VRM Classes

Visual Quality

The project area for visual resources includes the proposed project ROW, access roads, substation sites, and surrounding areas where the proposed project may visibly change the character of existing views. Since this proposed project is a rebuild of existing transmission lines, the project area was limited to no more than 2 miles from the project ROW. Beyond this distance, the changes between the existing transmission utility ROW and the proposed transmission ROW would be imperceptible to viewers. Substation site modifications and the new Snowy Range Substation would similarly not be perceived by viewers beyond a two-mile viewing distance.

The project area crosses through south-central Wyoming and northern Colorado. The northern part of the project area near the Seminoe State Park and Bennett Mountain Wilderness Area is characterized by steep and mountainous topography, rock outcroppings, and the Seminoe Reservoir and North Platte River. Scenic quality is Distinctive within the region, and the area provides a variety of opportunities for scenic enjoyment as well as recreational opportunities.

The majority of the project area passes through landscapes that are representative of the south-central Wyoming and northern Colorado landscapes. South and southeast of the Seminoe Reservoir, the landscape is characterized by a series of rugged hills and draws that transition to predominantly rolling to flat grasslands and rangelands, closer to Laramie. A number of intermittent meandering streams, creeks and associated wetlands vegetation cross open rangelands and hay fields, providing localized visual diversity to the otherwise homogeneous landscapes. East of Laramie, the existing line crosses the Laramie Mountains, before transitioning to open rangeland near Cheyenne, Wyoming. Developed commercial, industrial, and residential areas are crossed by, or adjacent to, the CH-MM transmission line, in the vicinities of Laramie and Cheyenne. The visual qualities of these cultural landscapes are also considered to be representative of Wyoming’s communities and subdivisions. Along the AU-CH transmission line, the natural scenic qualities remain similar to the CH-MM ROW, and consist predominantly of open rangeland and irrigated agricultural landscapes. Developed and developing residential subdivisions are increasing becoming more prominent components of the landscape, south of Cheyenne. Overall, the visual qualities of these landscapes are also typical or representative of the region.

Visual Sensitivity

The viewer groups and use areas described below are considered to be of high or moderate visual sensitivity due to the type of use and viewing distance from Western’s existing and proposed transmission facilities. Areas of visual sensitivity are defined to include park, recreation, natural areas, major travel routes and residential areas within a foreground to middleground viewing distance zone (i.e. within 2 miles) of the proposed project: Potentially sensitive uses beyond two miles are not considered in this study since the proposed project changes to Western’s existing ROW and transmission facilities would be visually indiscernible, compared to the existing conditions, beyond two miles.

Park, Recreation and Natural Areas (WSA’s) – Developed park and recreation areas within 2 miles of the project area are located in the northern part of the CH-MM transmission line and ROW . These include the Seminoe State Park, Seminoe Reservoir, and Miracle Mile prime trout fishery. Designated natural areas are Bennett Mountain Wilderness Study Area and the Morgan Creek Big Game Winter Range.

Major Travel Routes – Major travel routes in the project include: Interstate 80, Interstate 25, U.S. Highways 287/30 and US 85, Wyoming State routes SR 223, 210, 13, and 487, and Colorado State Route SR 14.

Residential Areas and Communities – Residential areas, communities and subdivisions within the foreground to middleground viewing distance zones of the project include: Wyoming - Town of Medicine Bow, incorporated cities of Laramie and Cheyenne, Gilchrist residential area, Harmony Point, Harmony, Orchard Valley, Bison Crossing and Winchester Hills subdivisions and dispersed residences primarily found between the towns and Laramie and Cheyenne, and south of Cheyenne.

BLM VRM Classes

The BLM has identified VRM Management Classes I through IV for public lands crossed by, or near the CH-MM Rebuild Project. No public BLM lands are crossed by the project between the AU-CH substations. The following BLM VRM classes apply to lands in the CH-MM project area.

VRM Class I – applies to the Bennett Mountain Wilderness Study Area. The Wilderness Study Area is located adjacent to, and north of, the HJ-MM transmission line ROW , and east of the Seminoe State Park. The CH-MM transmission line passes to the west and south of both the HJ-MM transmission line and the WSA.

VRM Class II – VRM Class II has been designated by BLM for public lands in the vicinity of the Seminoe State Park and Reservoir. VRM Class II lands surround the state park and reservoir, and are crossed by the existing Western transmission lines for approximately 10 miles south of the Miracle Mile Substation.

VRM Class III – VRM Class III has been designated for the majority of public lands crossed by, or adjacent to the CH-MM transmission line. Public lands crossed by the project in this area are predominantly dispersed in checkerboard pattern and are representative of public land visual amenities.

VRM Class IV –VRM Class IV applies to BLM public lands that are available for mineral and energy developments. Class IV VRM lands primarily lie to the south of Western's existing transmission lines.

3.13.2 Environmental Consequences of the Proposed Project and Alternatives

3.13.2.1 Significance Criteria

Visual impacts from the proposed project or alternatives would be significant if:

- the proposed project or alternatives caused long-term visual changes that diminished the value or use of established parks or recreation areas of national and regional importance, or designated scenic areas with recognized regionally important viewsheds.

The assessment of visual impacts is based on BLM criteria and standards for evaluating visual contrasts. The assessment of visual contrasts considers the degree of perceived change in line, form, color, and texture that the project would cause from representative key observation points

(KOPs). Three photographic visual simulations were prepared for the project and alternatives from representative KOPs to illustrate the visual characteristics of the existing 115-kV transmission facilities and the changes that would be caused by the rebuild of the transmission lines to 230kV. The visual simulations illustrate typical structure designs under consideration by Western for the project. These are shown in Figures 3.13-1, 3.13-2 and 3.13-3 at the end of this section. Appendix A contains background technical information that was used for preparing the simulations.

3.13.2.2 Impacts of the Proposed Project

Transmission System – CH-MM Transmission Line Rebuild

Visual impacts from the proposed project would primarily be long-term in nature, lasting the life of the project. Long-term visual changes would result from the visibility of the new overhead 230-kV structures, hardware and conductors. Short-term visual and aesthetic impacts would also result from the presence of construction crews and equipment, and the disruption of soils for access road improvements and for clearing and grading at structure sites where structures are either being installed (e.g. for the 230-kV line) or removed (i.e. for the 115-kV line). Short-term and long-term visual impacts are described below by landscape types and viewer groups.

Short-Term Impacts

Short-term visual and aesthetic impacts would result from the presence of construction crews and equipment, and the temporary disruption of soils. The construction of the project would occur in phases, with 2 to 5 construction crews and equipment moving along the ROW for site clearing and grading, structure excavation and replacement, conductor stringing and tensioning, and structure disposal and clean-up. The construction schedule and sequence of activities are described in Section 2.1.7. Visibility to fugitive dust, as well as construction vehicles and equipment would occur. Visual impacts from construction activities would be minor and less than significant to sensitive residential communities, roadways, and park and recreation areas, due to both the short-term and intermittent nature of these activities. Western would also implement Standard Construction and Mitigation Practice 5 (Table 2.1-3) to reduce construction-related impacts to landscape character.

Long-Term Impacts

The proposed project would result in long-term visual and aesthetic changes that would affect a variety of landscapes and viewer groups. The degree and nature of project-related visual and aesthetic impacts would depend on specific viewer groups affected, the viewing conditions and distances from which the project changes would be seen, the type of transmission changes proposed, and the resulting contrasts that the project would cause. Long-term visual impacts are described below by landscape and viewer types.

BLM VRM Class I and II Areas – The Bennett Mountain WSA is a VRM Class I area. This Class I landscape is located adjacent to Western's existing HJ-MM ROW. VRM Class II landscapes are crossed for approximately 10 miles, where the proposed project would cross BLM lands that surround the Seminoe State Park and Reservoir. For the first 6.6 miles, the proposed project would entail no structural changes to Western's existing facilities, consequently no long-term visual changes, or contrasts would result to either the VRM Class I or II landscapes. From MP 6.6 and 10, the proposed project would entail replacing the existing CH-MM 115-kV H-frame structures with similar design H-frame structures, and the installation of a new 230-kV conductor and hardware. The difference in visual character between the existing and future landscape would be due solely to the increased size for the 230-kV H-frame structures and larger 230-kV conductor. The new H-frame structures would be similar in design, but larger in scale. Typical heights for the 230-kV H-frame structures would be 70 feet compared to the 52 feet for the existing H-frame structures. Similar increases in width would also occur, with the 230-kV H-frame structures having a width of 24 feet, compared to 12 feet for the 115-kV H-frames. Overall, these scale changes would be slightly adverse, and not significant from a visual perspective. The new H-frame structures and associated hardware and conductor would not be located within the Class I VRM area, and therefore would not directly conflict with the VRM Class I area and visual management objectives. Impacts to VRM Class II landscapes would be slightly adverse, and less than significant, due to the relatively weak changes in form and line that would result. Other visual aspects of color and texture would remain the same as the existing transmission facilities.

Park and Recreation Areas – The proposed CH-MM Rebuild Project would have minor, and less than significant visual impacts on developed park and recreation areas due to the relatively weak visual contrasts that the proposed project would create. Very weak to no identifiable visual impacts would result to the Seminoe State Park Reservoir and Miracle Mile prime trout fishery. The proposed project would be located to the east of these recreation areas. No visual impacts would result for the first 6.6 miles, where the existing lattice structures and conductors would be used and uprated. Beyond the first 6.6 miles, the line would primarily be viewed at middleground distances from the reservoir and other developed park facilities, and visual changes resulting from the rebuilt H-frame structures and new conductor would be perceived as minor structure and line changes to an existing utility corridor. Visual contrasts of the proposed project would be weak, when viewed at from a middleground distance zone, and compared to the existing setting.

Residential Areas and Communities – Residential areas, communities and subdivisions are within the foreground to middleground viewing distance zones of the CH-MM Rebuilt Project. Residential viewers are most concentrated in and around Laramie and Cheyenne, Wyoming, including the Gilchrist residential area. Visual impacts to these viewing locations would be less than significant due to the weak to moderate changes in form and line contrasts that would result from the proposed rebuild project. Near Laramie Wyoming, the proposed project would consist of replacing the existing 115-kV H-frame structures with similar design, new 230-kV H-frame structures. The new structures would be 70 feet tall, on average, and 22 feet wide, compared to the 115-kV structures that are 52 feet tall, on average, and 12 feet wide. Visual contrasts would be weak to moderate, due to the relative changes in structure dimensions. The visual contrasts of the new, larger 230-kV conductor would also result in weak line contrasts when compared to the existing 115-kV conductor that would be replaced. Figure 3.13-1 shows an existing setting near a residential area in Laramie, Wyoming and a simulation of the proposed project. These types of visual changes would also be seen in areas of both predominantly open space and mixed land uses, including residential, commercial, industrial and public school developments.

Near the City of Cheyenne, visual impacts would also be less than significant due to moderate visual changes in line and form contrasts. From the Happy Jack Substation to the Cheyenne Substation, the proposed project would entail removing both the existing CH-MM and HJ-MM 115-kV H-frame structures and replacing both sets of structures with one new set of new double circuit 230/115-kV single pole steel structures. Overall, the single pole steel structures would be approximately 115 feet tall, compared to 52 feet for the existing H-frame structures, and therefore, would be noticeable by the public. The visual impacts of the increased structure heights would be offset, however, by a reduction in the overall number of structures, as well as the design of the single pole steel structure. Visually, the single pole steel structure design would be more compatible with urban design features (e.g. light poles, distribution lines, etc.), than the two sets of H-frames that would be replaced. Furthermore, since the proposed project would result in only one set of transmission structures for the CH-MM and HJ-MM transmission lines, rather than the existing two sets, the proposed CH-MM Rebuild Project would result in some beneficial visual effects by reducing the overall number of transmission structures that are currently visible in the Cheyenne area. Some minor increase in line contrasts would also result, due to the replacement of the 115-kV conductor with the slightly larger 230-kV conductor. Overall, these changes would result in weak contrasts, and would not draw viewers attention.

Travel Routes – The long-term visual impacts to local roads, including U.S. and State Routes, as well as public roads providing access to BLM lands, would be slightly adverse and less than significant. Visual changes to roadside views would be similar to those described above for residential areas, and would be most evident when seen within a foreground viewing distance. Visual changes to roadside views would be most evident to interstate travelers along I-80 where the proposed CH-MM rebuild project would pass north of, and parallel to I-80, northwest of Laramie, and where the proposed CH-MM Rebuild Project would cross I-80 near its intersection with I-25 in Cheyenne, Wyoming. A special structure design and increased structure heights may be required at the interstate crossing in Cheyenne, Wyoming to provide adequate clearances. Western anticipates that the maximum height of the structures at this crossing would not exceed 120 feet. These changes would be viewed in the context of numerous existing distribution lines and other transmission lines that converge in this location, however. In addition, Western would implement Standard Construction and Mitigation Practice 34 (Table 2.1-3) to reduce long-term visual contrasts to the extent feasible. Overall, , the degree of visual change would be moderate when viewed in conjunction with other utility (transmission and railroad) corridors, and not significant since the visual change would be less than strong.

In summary, the CH-MM Transmission Line Rebuild would result in less than significant visual/aesthetic impacts. Short-term construction impacts would be less than significant due to the short-term nature of visual effects, and since no new access roads would be constructed in areas requiring landform alterations.

Long-term visual and aesthetic impacts would also be less than significant due to the comparatively minor, or weak changes in line, form, color and texture that the rebuild project would cause.

Transmission System – AU-CH Transmission Line Rebuild

Visual impacts between the Ault and Cheyenne Substations would range from adverse to minor depending on the types of structure modifications proposed. Short-term construction impacts would be adverse, but less than significant due to the short-term nature of visual effects that would result from the presence of construction crews, equipment, and related ground disturbances. Western would also implement Standard Construction and Mitigation Practice 5 (Table 2.1-3) to minimize impacts to landscape character. Long-term visual and aesthetic impacts would be adverse, but less than significant due to the incremental changes in line, form, color and texture that the AU-CH transmission rebuild project would cause, with implementation of Mitigation Practice 34.

There are no public lands or park and recreation areas that would be visually impacted by the AU-CH Rebuild Project. Visual changes would primarily occur to local residents, developing residential areas, and travelers on local roads.

Residential Areas and Communities – The proposed AU-CH Rebuild Project would visually affect views from a number of existing and developing residential subdivisions, including Harmony Point, Harmony, Orchard Valley, Bison Crossing and Winchester. Representative visual changes from the proposed AU-CH Rebuild Project are shown in Figures 3.13-2 and 3.13-3. South of the Cheyenne Substation, Western would replace the existing H-frame structures with new single pole steel structures. The single pole steel structures would be approximately 115 feet tall, compared to the existing H-frames that have typical heights of 52 feet. This change in height would constitute a strong visual contrast where the new structures are openly visible and within a foreground viewing distance. The strong visual contrasts of the new structures would be partially mitigated, however, by the reduction in the overall number of structures that would be required. The existing H-frame structures have typical spans of 700 to 800 feet, compared to 1000 feet for the single pole steel structures. In addition, the single pole steel structure design would also be more visually compatible with community design standards, when compared to the H-frame structures. The single pole steel structures would also be constructed of neutral, non-reflective steel, of a neutral tone compatible with the surrounding residential areas (Mitigation Practice 34, Table 2.1-3). Consequently, on balance, while the increased height of the new structures is considered substantial, overall visual impacts would be adverse, and less than significant, since the number of structures would be reduced and the design would be more visually compatible with developing residential areas.

Substations - Proposed Snowy Range Substation and Miracle Mile, Cheyenne and Ault Substation Modifications

Proposed Snowy Range Substation – The proposed Snowy Range Substation would result in slightly adverse visual impacts. The substation site is located north of Laramie, Wyoming, where the visual landscape character is most influenced by open space rangelands and existing utility corridors. Landscape impacts would be minimal and require little to no changes in overall topography. With respect to viewers, the proposed site lies to the north of developing residential areas of Laramie. Residences are located within .5 mile of the site; however, views from the residential areas are mostly screened to the north by intervening topography. Consequently, no visual impacts are anticipated to these areas from the proposed substation.

Modifications to Existing Miracle Mile, Cheyenne and Ault Substations – Since modifications to the existing Miracle Mile, Cheyenne and Ault Substations would be made within existing Western facilities, no adverse visual impacts would result to scenic quality or sensitive viewers.

3.13.2.3 Impacts of the Alternatives

CH-MM Alternative Route 1

The types of visual changes associated with CH-MM Alternative Route 1 would be similar in degree to the proposed project. Compared to the proposed project, CH-MM Alternative Route 1, Part A routes the proposed 230-kV transmission line along the existing HJ-MM ROW, further to the north of Laramie, Wyoming through open rangelands. This part of the alternative would result in slightly adverse long-term visual impacts since the 230-kV wood H-frame structures would be located along an existing utility corridor and there are few residential or roadside views that would be affected within a foreground viewing distance. Overall, Part A of CH-MM Alternative Route 1 would result in weak visual contrasts in structure design and height compared to the existing setting. The new 230-kV wood H-frame structures would be approximately 70 feet tall compared to the existing HJ-MM 115-kV structures, which have average heights of 52 feet.

CH-MM Alternative Route 1, Part B would cause long-term visual changes to the existing visual environment between MPs 97 and 99. From MP 91 to 97, the new 115-kV structures would be the same in design, height and material as the existing 115-kV structures which would be removed. The new structures would be wood H-frame in design and have typical heights of 52 feet. Consequently, no long-term visual effects would occur along this segment of the alternative. From MP 97 to 99, new single pole steel 115-kV structures would replace the existing H-frame wood structures. Along this two mile stretch, the design of the structures would change from H-frame to single pole, and the average height of the structures would increase from 52 feet to 82 feet. Materials would change from wood to steel, and the span length between structures would increase from 800 feet to 900 feet on average. The increased height of the single pole 115-kV structures would primarily be seen in industrial and agricultural areas west of Laramie. Visual impacts from the increased height of the single pole steel structures would be mitigated or offset by both the single pole design and the reduction in the total number of structures. Consequently, on balance, this alternative would result in similar or less visual effects than currently occur from the existing 115-kV structures and lines. It should be noted that a special structure design may be required at the U.S. 287 crossing in Laramie, Wyoming to provide adequate clearances. In this area, new single pole steel structures may reach 100 feet in height. Impacts in this area would be adverse, but less than significant. The single pole steel structures would also be constructed of neutral, non-reflective steel, of a neutral tone compatible with the surroundings. The visual contrast would be weak to moderate in this area.

AU-CH Alternative Route 2

The AU-CH Alternative Route 2 would result in similar minor, and less than significant visual impacts as described above for the proposed AU-CH Rebuild Project. The landscape setting and types of visual changes would be similar to the proposed project. Existing viewers in this part of northern Colorado are scarce and consist of several ranch homes.

With Alternative Route 2, the proposed AU-CH 230-kV circuit would be strung on Western's existing Ault-Archer lattice structures, the same as the proposed project. Visual changes associated with this action would be very minor and not visually evident, thus not a significant impact. This alternative would have long-term visual benefits, however, by realigning the existing and future 115-kV H-frame structures adjacent and parallel to the lattice towers. While these visual benefits would not be realized by many existing viewers, the alternative represents good planning and the potential to minimize visual, as well as land use conflicts should development occur in the future.

No Action Alternative

The No Action Alternative would avoid the adverse and beneficial visual impacts described in this section for the proposed project and Alternatives. Existing visual conditions would remain unchanged. This alternative would result in more maintenance activities seen along Western's existing transmission lines, however. Increased short-term visual effects would occur intermittently due to the presence of maintenance crews, vehicles and dust. These activities would not result in long-term moderate or strong visual changes and would be therefore be less than significant.

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3.14 Electrical Effects and Human Health

A significant impact on safety and health as a result of the proposed project would occur if features of the proposed project have demonstrated adverse health effects. Specifically, these would include increased risk of injuries or deaths resulting from potentially higher risk of adverse health symptoms (including those to pacemaker wearers) resulting from increases in electric and magnetic fields in the area.

Current and voltage are required to transmit electrical energy over a transmission line. Current is flow of an electrical charge measured in amperes and is the source of a magnetic field. Voltage represents the potential for an electrical charge to do work expressed in units of volts (V) or kV and is the source of an electrical field. The proposed 230-kV transmission line would provide a maximum thermal capacity of approximately 1,000 amperes in each of the three phase conductors or wires. The electrical effects of the proposed 230-kV transmission line can be characterized as "corona effects" and "field effects" that are associated with current-induced magnetic fields and voltage-induced electrical fields. Magnetic and electrical field profiles for the existing 115-kV transmission lines and the proposed 230-kV and 115/230-kV transmission line designs are provided in Appendix C as a reference for the following discussion.

Corona Effects

Corona is the electrical breakdown of air into charged particles caused by the electrical field at the surface of conductors, insulators, and hardware of energized high-voltage transmission lines. Corona occurs where the field has been enhanced by protrusions, such as nicks, insects, or water drops. During fair weather, these sources are few and corona is minor. During wet weather, sources increase and corona effects are greater. Effects of corona are audible noise, visible light, radio and television interference, and photochemical oxidants.

Audible noise – Corona-generated audible noise is generally characterized as a crackling/hissing noise, most noticeable during wet-weather conditions. There are no design-specific regulations to limit audible noise from transmission lines. Transmission line audible noise is measured and predicted in decibels (A-weighted) or dBA. Some typical noise levels are: light automobile traffic at 100 feet, 50 dBA; an operating air conditioning unit at 20 feet, 60 dBA; and freeway traffic or freight train at 50 feet, 70 dBA. This last level represents the point at which a contribution to hearing impairment begins. The average noise level during wet weather at the edge of the ROW for the proposed line is anticipated to be 46 dBA at 230-kV.

Visible light – Corona is visible as a bluish glow under conditions of darkness, and probably only with the aid of telescopic devices. Light would be difficult to detect at the operating voltage of 230-kV.

Radio and television interference – Corona-generated radio interference is most likely to affect the amplitude modulated (AM) broadcast band; frequency modulated (FM) radio reception is rarely affected. Only AM-radio receivers near transmission lines are affected by radio interference. An acceptable level of maximum fair-weather radio interference at the edge of a ROW is 40 to 45 dBuV/m (decibels above one microvolt per meter). Average levels during foul weather are typically 16 to 22 decibels higher than average fair-weather levels. The predicted fair-weather level for the proposed transmission line rebuild is 36 dBuV/m. Television interference (TVI) due to corona occurs during foul weather and is generally caused by transmission lines with voltage more than 345-kV. The level of corona-operated TVI expected from the proposed rebuild is 16 dBuV/m at the edge of the ROW. This is a lower level than occurs on many existing lines.

Various techniques exist for eliminating adverse impacts on radio and television reception. Western would address individual complaints concerning radio and television interference as needed.

Corona-generated interference can disrupt communication bands such as the citizen's and mobile bands. However, mobile-radio communications are not susceptible to transmission line interference because they are generally FM. If interference occurs with these types of communications, the same techniques used to alleviate television and radio interference can be used. Shielding, where practicable, would alleviate interference with electronic monitoring equipment.

Photochemical oxidants – When corona is present, the air surrounding the conductors is ionized and many chemical reactions take place, producing small amounts of ozone and other oxidants. Approximately 90 percent of oxidants are ozone and the remainder mainly nitrogen oxides.

The NAAQS for photochemical oxidants, of which ozone is the principal component, is 235 $\mu g/m^3$ or 120 parts per billion (ppb). The maximum incremental ozone levels at ground level calculated for the proposed line would be less than 0.02 ppb for a 0.5 miles per hour perpendicular wind and a .03 inch per hour rain.

Field Effects

The electric field created by high voltage transmission lines extends from the energized conductor to other conducting objects. Resulting field effects include induced current and voltage in the ground, structures, vegetation, buildings, vehicles, and people near the transmission line; spark discharge shocks; steady state current shocks; field perception at ground level; and magnetic field. The electric field or voltage gradient is expressed in units of volts per meter (V/m) or kilovolts per meter (kV/m).

For a 230-kV line single-circuit design an electric field of less than 4-kV/m would result at the point of maximum strength within the ROW. This would decrease to 0.07-kV/m at about 200 feet away. There are no federal standards for transmission line electric fields. Several states have set guidelines for electric and magnetic field levels that must be met for newly constructed transmission lines. These levels at the edge of the ROW are about 2 kV/m for electric fields and 200 mG for magnetic fields. In most cases the values are maximum fields that existing lines produce at maximum load-carrying conditions. Montana has established a one-kV/m edge of ROW standard in residential areas. Field levels for the proposed rebuild would be within the recommended limits of these states.

Primary shocks – The greatest hazard from a transmission line is primary shocks or direct electrical contact with the conductors. Primary shocks can result in physical harm. The lowest category of primary shocks is "let go," which represents the steady-state current that cannot be released voluntarily. The maximum induced current (mA) criterion for vehicles closely approximates the estimated 4.5 mA let-go threshold for 0.5 percent of children (Keesey and Letcher 1969). Caution should be exercised to avoid primary shocks resulting from line strikes with equipment (e.g., drill rigs, farm equipment, electrical service equipment).

Steady-state current shocks – Steady-state currents are those that flow when a person contacts an ungrounded object, providing a path for the induced current to flow to the ground. Potential steady-state-current shocks from vehicles under the proposed line are at or below secondary shock levels. Secondary shocks could cause an involuntary and potentially harmful movement, but cause no direct physiological harm. Steady-state current shocks are infrequent and represent a nuisance rather than a hazard.

Induced current and voltage – When a conducting object, such as a vehicle or person, is placed in an electric field, currents and voltages are induced in that object. The magnitude of the induced current depends on the strength of the electric field and the size and shape of the object. Voltage induction and the creation of currents in long conducting objects, such as fences and pipelines, would be possible near the proposed transmission line. If the object is grounded, the induced current flows into the earth and is called the short-circuit current of the object. In this case, voltage on the object is effectively zero. If the object is insulated (not grounded), then it assumes some voltage relative to ground. These induced currents and voltages represent a potential source of nuisance shocks near a high voltage transmission line. Even under worst case conditions, the short-circuit current resulting from induced voltage of the proposed transmission line to the largest anticipated vehicle would be less than the National Electric Safety Code criterion of 5 mA.

Cardiac pacemakers – Overall risk to cardiac pacemaker wearers as a result of current and voltage induction warrant individual discussion. Induced current and voltage represent a possible source of interference to pacemakers. Internal currents can be caused by electric fields, magnetic fields, or by direct contact.

The interference threshold for the most sensitive pacemaker is estimated at 3.4-kV/m. The maximum induced electrical field of the proposed 230-kV transmission line is estimated at 1.6-kV/m (to be verified by Western). Therefore, the proposed Project, when operated at 230-kV capacity, would not pose a risk to pacemaker wearers.

Spark-discharge shocks – Induced voltage appears on objects that conduct electricity, such as vehicles, fences, and railroad tracks, when there is an inadequate ground. If voltage were sufficiently high, a spark-discharge shock would occur upon contact with the object. This type of shock could occur under the proposed 230-kV transmission line. However, the magnitude of the electric field would be low, and infrequently occur under the line near mid-span.

Carrying or handling conducting objects, such as irrigation pipe, under the proposed line could result in spark discharges that are a nuisance. The primary hazard with irrigation pipe, however, is direct contact with conductors.

Field perception – When the electric field under a transmission line is sufficiently high, persons standing under or near the line may perceive the raising of hair on an upraised hand. At the operating voltage of 230-kV, electric fields from the proposed line should not be detected.

Magnetic field – Magnetic field strength is expressed in terms of teslas or gauss. There are no established limits for magnetic field strength. The proposed 230-kV transmission line, operated at maximum current and thermal capacity, would induce an estimated 60-hertz (Hz) magnetic field maximum of approximately 290 milligauss (mG) (.29 gauss) diminishing to 6 mG about 200 feet away. These magnetic field strengths compare with levels of magnetic field measured near common household appliances, and are much less than the direct current magnetic field of the earth (0.6 gauss). The health effects associated with the upgraded transmission line would be similar to those for the existing line. Since the proposed line design is in keeping with Western's field-reducing guidelines, any exposures within the ROW would be similar to those expected from typical Western designs. The edge of the ROW would mark the beginning of the long-term residential exposure levels at the root of the present health concern. Since there would be no residences or occupied buildings within the ROW, no such long-term exposures would be expected.

Long-term Exposure to Electric and Magnetic Fields

Questions concerning effects of long-term exposure to electric fields from transmission lines on human health are a controversial subject that has been raised primarily in hearings related to 500-kV and 765-kV transmission lines. These high voltage lines induce electrical fields at ground levels more than twice the maximum electrical field estimated under the proposed 230-kV transmission line. Although available evidence has not established that induced electrical fields pose a significant health hazard to exposed humans, the same evidence does not prove there is no hazard. Therefore, in light of the present uncertainty, it is Western's policy to design and construct transmission lines that reduce the EMF to the maximum extent feasible.

While considerable uncertainty remains about the EMF/health effects issue, the following facts have been established from evaluating the results and trends of EMF-related research:

- Any exposure-related health risks to an exposed individual would be small.
- The most biologically significant types of exposures have not been established.
- Most health concerns have been related to magnetic fields.
- The measures employed for field reduction can affect line safety, reliability, efficiency, and maintainability, depending upon the type and extent of such measures.

No federal regulations have established environmental limits on the strengths of EMF from power lines. Some states have set limits on EMF from newly constructed lines, not based on factual health data. Most of Western's lines would meet those standards.

Below are brief summaries of some past and current studies on EMF health studies:

Electric and Magnetic Fields from 60-Hz Powerlines: What do We Know about Possible Health Risks? Morgan (1989) concluded that 60-Hz EMF do not pose a significant risk to agriculture, animals, or ecosystems.

The Electric Power Research Institute (1998) (along with the Veterans Affairs Medical Center and the Bonneville Power Administration) conducted a four-phase study that exposed sheep to fields from a 500-kV transmission line. The research was done to determine whether long-term EMF exposures impacted melatonin levels, immune function, and animal health. Early phase studies of exposed groups of animals showed no impact on melatonin levels. In later studies, immune cells were monitored in two exposed groups of animals to find out if exposure to fields resulted in immune cells reduction in the exposed animals. Cell reduction would affect immune function and animal health. Final results showed that immune cells were not consistently or significantly reduced in exposed sheep.

A team of Canadian researchers led by McBride reported in the May 1999 issue of the American Journal of Epidemiology that if there is a risk (of childhood leukemia from EMF exposure) it is undetectable through epidemiological studies.

A study sponsored by the National Institute of Health (NIH), National Institute of Environmental Health Sciences (NIEHS) was published in June 1999, The *Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields*, stated that all theories concerning biological effects of EMF "suffer from a lack of detailed, quantitative knowledge," and concluded that laboratory data using a variety of animals, such as non-human primates, pigeons, and rodents, are inadequate to conclude that EMF field exposure alters cancer pattern rate and has not been adequately demonstrated for non-cancer health issues (e.g. birth defects) (NIEHS 1999). As a precaution regarding human health issues, the report recommends that the electrical field at the edge of a ROW measured one meter above ground not exceed 1-kV/m, and considered this recommendation conservative.

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3.15 Cumulative Impacts

Cumulative impacts are those additive or interactive effects that would occur due to the proposed project or alternative's incremental impact when added to other past, present, and reasonable foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions. This section of the EA summarizes reasonably foreseeable projects that could be developed within the project area and the proposed project or alternative's potential contribution to cumulative effects that could result. The proposed CH-MM transmission line rebuild would disturb 414 acres, plus 16 acres for the Snowy Range Substation. The AU-CH transmission line rebuild would disturb 87 acres. The total disturbance for the transmission line rebuild is 501 acres most of which would be impacted for the short-term.

3.15.1 Reasonably Foreseeable Development

Table 3.15-1 (at the back of this section) identifies the Reasonably Foreseeable Projects throughout the CH-MM and AU-CH Transmission Line Rebuild project area, and describes the planned projects and their location by county and city. The projects listed are either proposed, approved, or currently under development. The timeframe for the commercial, industrial, and residential projects is within the immediate future, with full built-out occurring within the next few years. The natural resource projects listed may have a longer timeframe due to the need to complete environmental analyses before the projects can be permitted. Many of the natural resource projects listed are in the preliminary planning stages and may take years to permit and be built out. In addition to the transmission line that parallels much of this project, a variety of utility corridors (e.g., gas pipelines, well pads, waterlines, wind generation, other transmission facilities) exist in the area. The number of such facilities is growing, reflecting increased population, and thus the cumulative impacts of these undertakings would likely continue. Increased commercial and residential development is also likely in portions of the project area.

3.15.2 Cumulative Environmental Impacts for Resource Topic

Climate and Air Quality – Because of the nature of the proposed project and alternatives, any contribution of the proposed project to cumulative air quality effects would be minor, localized, and temporary. There is little likelihood of cumulative impacts occurring with other sources of air pollution, and neither the proposed project nor the alternatives would cause or contribute to a violation of any applicable standards. Because the proposed project or alternatives would not affect local climatic conditions there would be no cumulative impacts on climate.

Soils – The proposed project or alternatives would contribute a minor and insignificant amount to cumulative soil disturbances. Since the proposed project or alternatives would require a small amount of disturbance at each structure site, and no new access roads would be built, soil disturbances would be very minor, compared to other types of large-scale utility projects, such as pipelines. In addition, the proposed project or alternatives would entail the restoration of disturbed areas to approximate pre-disturbance conditions. These requirements are firmly bedded in state and federal rules and regulations and land owner and land management agency requirements. The cumulative impact to regional soils from the proposed project or alternatives and potential projects is anticipated to be small when considered in the context of the total project area.

Paleontology – With the application of appropriate mitigation practices (see Table 2.1-3) this project, and other projects planned and executed with similar sensitivity to paleontology, are likely to have only a small cumulative adverse impact on paleontological resources. This and additional development in the region may result in paleontologic discoveries which would otherwise not occur.

Surface Water – The proposed rebuild project or alternatives would not directly impact surface water and thus no direct cumulative impacts would occur. The project would cause a small incremental increase in the potential for indirect surface water impacts such as stream sedimentation and possible pollution from spills, over and above those impacts expected from coalbed methane development, construction of the EnTrega pipeline, and the smaller county projects. Because the overall disturbance area is small (414 acres) for the CH-MM Transmission Line Rebuild, 87 acres for the AU-CH Transmission Line Rebuild (see Table 2.1-2), and 16 acres permanent disturbance for the proposed Snowy Range Substation and dispersed over 146 miles and 35 miles, respectively, and because Western would use best management practices to avoid surface water pollution, indirect cumulative impacts to surface waters would be minor and of short duration. Operations would not impact surface waters and thus would not cause additional cumulative impacts.

Floodplains and Wetlands – Waters of the U.S. are protected under the *Clean Water Act*; wetlands are defined as waters of the U.S. and many floodplains also meet this definition. The rebuild project or alternatives and each reasonably foreseeable project described above would comply with *Clean Water Act* regulations to protect these areas; therefore, cumulative impacts to floodplains and wetlands would be minimal and of short duration. Operations would not impact floodplains or wetlands and thus would not cause additional cumulative impacts.

Vegetation – The proposed CH-MM and AU-CH transmission line rebuild project or alternatives, in conjunction with the other reasonably foreseeable developments in the project vicinity, would cause the loss of vegetation potentially over large areas (as with the proposed coal mine and coalbed methane projects). The proposed project would contribute a small amount to regional vegetation disturbances (approximate 495 acres temporarily disturbed for the CH-MM and AU-CH transmission line rebuild. Of the total 495 acres disturbed for the transmission line rebuild during construction, less than 1 acre would be permanently disturbed, (plus an additional 16 acres permanent disturbance for the proposed Snowy Range Substation). The project would have a much-reduced impact on total vegetation losses for the life of the project. Vegetation types and associated wildlife habitats that would be impacted are common within the region. Therefore, cumulative impacts would be minor and not significant. Operations would not impact vegetation and thus would not cause additional cumulative impacts.

Wildlife – Cumulative impacts to wildlife would be similar to those described for the proposed project or alternatives. Although impacts from other projects would be widespread and could affect considerable acreage, the proposed project would impact little habitat (495 acres plus an additional 16 acres permanent disturbance for the proposed Snowy Range Substation) and thus contribute little to cumulative impacts. Furthermore, since the project would be constructed in phases, the amount of disturbance and disruption in any one year would be minimal and fairly localized.

Special Status and Sensitive Species – Cumulative impacts to TEP&C and other sensitive species would be similar to those described for the proposed project or alternatives. Although impacts from other projects would be widespread and could affect considerable acreage, each project must be conducted in compliance with the ESA and thus none of the reasonably foreseeable projects is likely to jeopardize the continued existence of any threatened or endangered species, and proposed and candidate species would be protected to the fullest extent possible. Since the larger actions (Anadarko's coal bed methane development and EnTrega's pipeline) have a federal component including BLM involvement, impacts to BLM-sensitive and WNDD-tracked species would be evaluated, and these species would be afforded the level of protection the federal agencies deem necessary. Since the rebuild project would also be constructed and operated in a way to minimize adverse impacts to TEP&C and other sensitive species, cumulative impacts to these species would be minor to none.

Cultural – Cumulative impacts to cultural resources would be minor since the proposed project or alternatives are within an existing utility ROW. Use of existing utility corridors results in few, if any, new sites with each intervening project. Cumulative impacts are also minimized through implementation of federal laws and regulations to protect historic, prehistoric resources and sites important to Native American heritage.

Land Use and Recreation – The proposed project would make a minor contribution to cumulative land use effects resulting from the reasonably foreseeable future projects shown on Table 3.15-1. Future actions that could impact the land use character of the region to the greatest degree are the Anadarko coalbed methane projects. Impacts from these reasonably foreseeable projects would not likely occur for upwards to 20 years, but if these energy and resource developments are built-out, the project area would change considerably. For the short-term, the proposed reasonably foreseeable projects would not have a dramatic impact on the region. However, the proposed project or alternatives would not change the land use character of the area since the proposed project or alternatives consist of replacing and modifying existing transmission lines within established utility corridors.

The project would provide a reliable source of power that would allow future development to occur; and the availability of adequate power supplies could contribute to growth and development in the region. Most development in rural Carbon County would be resource development that would contribute to the rural character of the project area changing to a more industrial type of landscape. Because of the vast amount of public and private agricultural and range land in Carbon County, Albany, Laramie, and Weld Counties, land use activities and characteristics are likely to remain in spite of the proposed reasonably foreseeable development. The proposed project or alternatives would not directly cause or contribute to the long-term cumulative impacts to land uses.

Socioeconomics and Community Resources – The proposed project or alternatives would make a minor and short-term contribution to the cumulative socioeconomic impacts that would result from construction and operation of other reasonably foreseeable projects listed in Table 3.15-1. Build-out of these projects would contribute to changes in local population, employment, housing, public services and facilities, the economy, and the transportation network. Many of these projects would affect the overall socioeconomic environment of the project area, primarily in the areas of increased population and employment, increased demand for scarce temporary and permanent housing, increased income in the project area, and increased revenues generated particularly in Carbon County, but also in Albany, Laramie, and Weld Counties and the towns of Laramie and Cheyenne. Specific projects that would affect the socioeconomic character of the project area the most are the Anadarko coalbed methane project and the DKRW Energy project coal liquefication process. These two projects, if developed to full build-out, could spur substantial growth in Carbon County. Most of the projects contributing to reasonably foreseeable cumulative impacts mentioned here have a greater direct impact during the construction phase; however, it is difficult to identify the secondary growth effects related to development of new coalbed methane projects, and induced growth in commercial and residential activity.

Demand for employment could reduce the unemployment rate in the area, the previously sluggish economy would be stimulated, personal income area-wide would increase due to increased employment, direct expenditures from development activity, and indirect expenditures from the employed workforce to the local area businesses, and revenues to local and state government coffers would increase from increased property, income, and sales taxes. In addition to these positive impacts, the potential influx of new population would put extra pressure on an already tight housing market in Carbon County. Certain projects could affect the provision of services by the local governments.

The CH-MM and AU-CH Rebuild Project would have a very minor contribution to these cumulative socio-economic changes since project-related effects would be short-term and occur primarily during project construction in the next 4 to 5 years.

Transportation – During construction, the proposed project would result in short-term and less than significant impacts to local transportation systems including Wyoming State Route 210, U.S. 287/30 and 85 and adjoining local roads. Impacts to transportation systems would result from the intermittent presence of construction crews and vehicles and associated increased traffic. These effects could occur simultaneously with other proposed developments, however. The proposed projects contribution to cumulative impacts is considered short-term, and could be partially mitigated through the coordination with other local agencies regarding construction plans and schedules, particularly in areas where suburban development is occurring in Cheyenne. Over the long-term, the proposed project would not change traffic-related activity throughout the project area.

Visual – The proposed project or alternatives would contribute to regional changes in land use character and related visual quality that would result from the reasonably foreseeable projects outlined in Table 3.15-1. Overall, cumulative visual changes would entail the conversion of natural landscapes to cultural areas of greater industrial and community character. The proposed project's contribution to these regional, long-term aesthetic changes would be very minor and incremental, since Western is proposing to utilize established utility corridors, and upgrade existing facilities. As reasonably foreseeable residential and community projects develop, there would be increased areas of visual sensitivity, due primarily to greater numbers of residents located near the ROW and utility facilities. While visual sensitivity may increase, the project's contribution to cumulative adverse impacts would remain minor compared to the existing conditions.

Table 3.15-1. Reasonably Foreseeable Projects

Project Name	Time frame	Type of Project	Location
Carbon County, WY			
Seminoe Road Gas Development Project	2006 (start construction)	1,240 natural gas development on 137,000 acres. 30 year project life.	T21R84 north to T24R86, just west of Seminoe Reservoir, 20 miles NE of Rawlins.
Anadarko	2005	Coal bed Methane Pilot Project – 9-16 wells	In vicinity of MP 26 to 28, south approximately 5 miles. Section 2 T23NR81W.
DKRW Energy	2006-2008	Coal fuel conversion Wind generation	15 miles northwest of Medicine Bow. Adjacent to CH-MM transmission line.
Entrega Gas Pipeline	2005	330-mile, 42-inch gas pipeline.	Meeker, CO through Wamsutter, WY to Rockport, CO. Parallels I-80 through Carbon County.
Clipper Wind Power	2004	Wind Turbine	5 miles south of Medicine Bow. T21R79N1/2N1/2S1.
Albany County, WY			
Entrega Pipeline	2005	Same as above	Parallels I-80 through Albany County
Single family	na	Large lot single family parcels for development	9th St. in county, north of Laramie landfill and CH-MM existing transmission line.
City of Laramie			
Montview Addition	2005	Multi-family housing	7th St. to 9th St. south of CH-MM existing line.
Lot Division	2005	Single family lots (2)	No. of 9th St. past landfill. Roger's Canyon Rd. South of existing CH-MM line.
Mobile Homes	2005	Mobile Homes and commercial development	Just south of Laramie substation.
Single family housing	2005	10 lot single family housing	Thaxton Ct. South of CH-MM existing line.
Single family housing	2005-2006	3 plats, 20 lots	No. 23rd between Nighthawk and Beaufort. South of existing CH-MM line.
Annexation request	2005		Between N. 23rd and N. 30th , south of Beaufort proposed extension. South of existing CH-MM line.
Single Family housing	2005	10-15 lots	No. of N. Inca. South of existing CH-MM line.
University golf course expansion	2006	Golf course	Near 45th St. South of existing CH-MM transmission line
Elderly housing	2005-2006	Group elderly housing	Inca St., north of Hayford Ave. South of CH-MM existing transmission line.
Laramie County, WY			
Xcel Energy	2005-2006	Renewable Energy	Could include wind turbines near existing wind turbines at Ponnequin, which parallels the existing AU-CH transmission line south of Cheyenne
City of Cheyenne			
St. Brendan's Court Sub	2006	Church (under construction)	No. of Terry Ranch Rd. and So. Of Ashford Dr. Just east of existing AU-CH transmission line
North Range Business Park formerly Veta Tracts	2006	Commercial/Industrial Park (40 tracts)	Corner of I-80 and No. Frontage Rd. Just south of existing CH-MM transmission line
North Range Business Park - West I-80 Business Park replatted	2006	Industrial Park (25 lots) Wal-Mart Distribution center currently under construction	South of Happy Jack Rd. and west of No. Frontage Rd. And SW corner of intersection of Happy Jack and Round Top Rd. Just south of existing CH-MM transmission line.
Laramie County Fire District 1 Station #2	2005-2006	Fire Station (under construction)	North of Terry Ranch Rd., east of Winchester Blvd. Just east of AU-CH transmission line.
Foxhaven Sub	2005	Rural residential	4 miles north of CH-MM transmission line, northwest of Warren AF Base

Table 3.15-1. Reasonably Foreseeable Projects

Project Name	Time frame	Type of Project	Location
Harmony Meadows	200-2006	Residential (190 lots) under construction	SW corner Walterscheid Blvd. and W. Allison. AU-CH transmission line ROW runs through subdivision just south of Cheyenne substation.
Harmony Center	2002	Commercial (19 lots) Approved, but not under construction	No. of West College Dr. west of Walterscheid. AU-CH transmission line ROW runs through subdivision just south of Cheyenne substation.
Triumph Addition	2005-2006	Triumph High School	No. of West College Dr. west of Walterscheid. AU-CH transmission line ROW runs through subdivision just south of Cheyenne substation.
Bison Crossing Sub	2004-2005	Residential- 31 tracts – 2.9 acre/tract	AU-CH transmission line ROW runs through subdivision south of Cheyenne substation.
Overland Trails	2005-2006	Industrial/Commercial	I-25 and SW corner College. 3 miles west of AU-CH transmission line
Harmony Point	2005-2006	Residential	East of Snyder, north of Allison. AU-CH and CH-MM transmission line ROW adjacent to development.
Capitol Tracts	na	Residential (2 tracts)	NW corner York and Hellwig. Just south and west of Cheyenne Sub near AU-CH transmission line.
DS Sub	2005-2007	Residential (3 tracts	No. of College Dr. between Southwest Dr. and Broken Arrow. Near CH-MM transmission line and intersection of I-25 and I-80.
Weld County, CO			
Recorded Exemption	2004-2005	Residential	Northwest of Ault Substation, near AU-CH transmission line
Single Family housing	2005-2006	Residential – 9 lot prelim. sketch for PUD	East of Ault Substation, near AU-CH transmission line

na – not available

4.0 List of Preparers

Western Area Power Administration

Rodney Jones

Education:	M.S.E. Environmental Engineering
Project Responsibility:	Project Management, Coordination, Review, and Environmental Compliance
Experience:	36 years professional experience

Viola G. Michaelis

Education:	Masters, Project Management; BS - Electrical Engineer
Project Responsibility:	Project Management
Experience:	21 years - Electrical Engineering, 12 years - Project Management

Steve Webber

Education:	BS, Business
Project Responsibility:	Land Acquisition and Land Management
Experience:	20 years of acquisition and management experience at Western

Alpine Archaeological Consultants, Inc.

Kimberly L. Redman

Education:	M.A., Anthropology and B.A., Anthropology
Project Responsibility:	Cultural Resource Principal Investigator (EA)
Experience:	14 years of archaeological experience, 6 years of archaeological project management, and 2 years experience managing cultural and environmental compliance.

Alan D. Reed

Education:	M.A., Anthropology and B.A., Anthropology
Project Responsibility:	Cultural Resource Principal Investigator and Project Director (Cultural Resource Inventory)
Experience:	25 years of archaeological experience and project management for projects in Colorado, Utah, New Mexico, Wyoming, and Kansas

Asoian Associates

Mark J. Asoian

Education:	B.S. (Meteorology) Lowell Technological Institute
Project Responsibility:	Climate and Air Quality
Experience:	26 years providing professional meteorological and air quality assessment services

Geo/Graphics Inc.

Gerald C. Hughes

Education;	B.A. Geography
Project Responsibility:	GIS, GIS Project Management Administration
Experience:	President, Geo/Graphics. 20 years experience in Cartography and GIS Consulting

Inberg-Miller Engineers

Larry Wright

Education:	B.A. Engineering Science and M.S. Civil Engineering
Project Responsibility:	Principal Researcher and Author, Geology, Soils, Paleontology
Experience:	22 years professional Experience.

Robert Carpenter

Education:	B..S. Architectural Engineering
Project Responsibility:	Project Manager, Researcher
Experience:	40 years experience

Kathol & Company

Jennifer Kathol

Education:	B.S. Natural Resource Economics
Project Responsibility:	Assistant Project Manager, Land Use, Recreation, Socioeconomics, Environmental Justice, Transportation
Experience:	President, Kathol & Company. 24 years of NEPA experience completing and managing projects and Human Resources sections of EIS, EA, EIR, and international environmental documents

View Point West

Christine Keller

Education:	M.A. Geography, conservation of Environmental Quality, and B.A. Sociology
Project Responsibility:	EA Project Manager responsible for coordination of consultant resource specialists, EA document preparation, Visual Resources and Electrical Effects and Human Health
Experience:	Partner, View Point West. 31 years experience in managing environmental compliance programs for energy projects within the western United States.

Tony J. Kovacic

Education:	A.S. Computer Technology
Project Responsibility:	Visual Simulation Specialist
Experience:	Partner, View Point West. 19 years as a computer specialist in Auto-Cad, Land Cad, Hi-Res QFX,and Truevision Imaging Software

TRC Mariah Associates Inc.

Karyn Coppinger

Education: M.S. (Botany) University of Wyoming; MS (Geology) Colorado State University; BA (Geology) Hampshire College

Project responsibility: Surface water, floodplains and wetlands, vegetation, wildlife, special status and sensitive species

Experience: 19 years professional experience

Jan Hart

Education: M.S. (Water Resources / Rangeland Ecology and Watershed Management) University of Wyoming; B.S., (Wildlife Conservation and Management) University of Wyoming; A.A.S. (Natural Resources Conservation) Muskingum Area Technical College

Project Responsibility: Field reconnaissance, Cheyenne to Ault; surface water, floodplains and wetlands, vegetation, wildlife, special status and sensitive species

Experience: 11 years professional experience

Randy Blake

Education: A.S. (Biology) Dodge City Community College; B.S. (Wildlife Biology, Aquatic Option) University of Wyoming

Project Responsibility: Field reconnaissance, Cheyenne to Miracle Mile; raptor nest inventory, GIS mapping

Experience: 17 years professional experience

Craig Kling

Education: M.S. Wildlife Biology, Colorado State University; B.S. (Zoology/Wildlife Biology) North Dakota State University

Project Responsibility: Quality Assurance

Experience: 30 years professional experience

Roger Schoumacher

Education: M.S. (Fisheries) University of Michigan; B.S. (Wildlife Management) Utah State University

Project Responsibility: Quality Assurance

Experience: 40 years professional experience

Mindy Teters

Education: B.A. (in progress) University of Wyoming

Project Responsibility: GIS mapping

Experience: 4 years professional experience

Tamara Linse

Education: M.A. (English) University of Wyoming; B.A. (English) University of Wyoming

Project Responsibility: Document production and editing

Experience: 11 years professional experience

Genial DeCastro

Education:	B.S. (Business Administration) University of Wyoming
Project Responsibility:	Document production and scheduling
Experience:	19 years professional experience

Ron L. Arrigo

Education:	B.S. (Computer Science) University for Nebraska, B.A. (Psychology) University of Nebraska
Project Responsibility:	Desktop Publishing, Graphics integration
Experience:	1 year desktop publishing, editing, layout and design.

5.0 Consultation and Coordination

Alpine Archaeological Consultants, Inc.

Bureau of Land Management, Rawlins District Office
1300 N. Third
Rawlins, WY 82301-4376

Wyoming Cultural Records Office
State Historical Preservation Office
Department 3431
1000 E. University Avenue
Laramie, WY 82071

Colorado Historical Society
Office of Archaeology and Historic
Preservation
1300 Broadway
Denver, CO 80203-2137

TRC Mariah Associates Inc.

Fish and Wildlife Service
Wyoming Ecological Services Field Office
Cheyenne, Wyoming

Fish and Wildlife Service
Colorado Ecological Services Field Office
Lakewood, Colorado

Bureau of Land Management
Rawlins Field Office
Rawlins, Wyoming

Wyoming Natural Diversity Database
Laramie, Wyoming

Colorado Natural Heritage Program
Fort Collins, Colorado

Inberg- Miller

Wyoming State Geological Survey
Laramie, WY

U.S. Bureau of Land Management
Cheyenne, WY

Kathol & Company

Wyoming Game and Fish
Casper, WY

Albany County/Laramie Planning
Laramie, WY.

Laramie County/Cheyenne Planning
Cheyenne, WY

Carbon County Planning
Rawlins, WY

Weld County Planning
Greeley, CO

Bureau of Land Management, Rawlins District Office
Recreation Specialist
1300 N. Third
Rawlins, WY 82301-4376

Seminoe State Park
Wyoming State Parks
Cheyenne, WY

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Appendix A. Proposed CH-MM and AU-CH-MM Transmission Line Rebuild Project, and CH-MM Alternative Route 1 Transmission Line Rebuild Project Location Map Exhibits and Cross Section Figures

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Proposed CH-MM and AU-CH-MM Transmission Line Rebuild Project Location Map Exhibits and Cross Section Figures

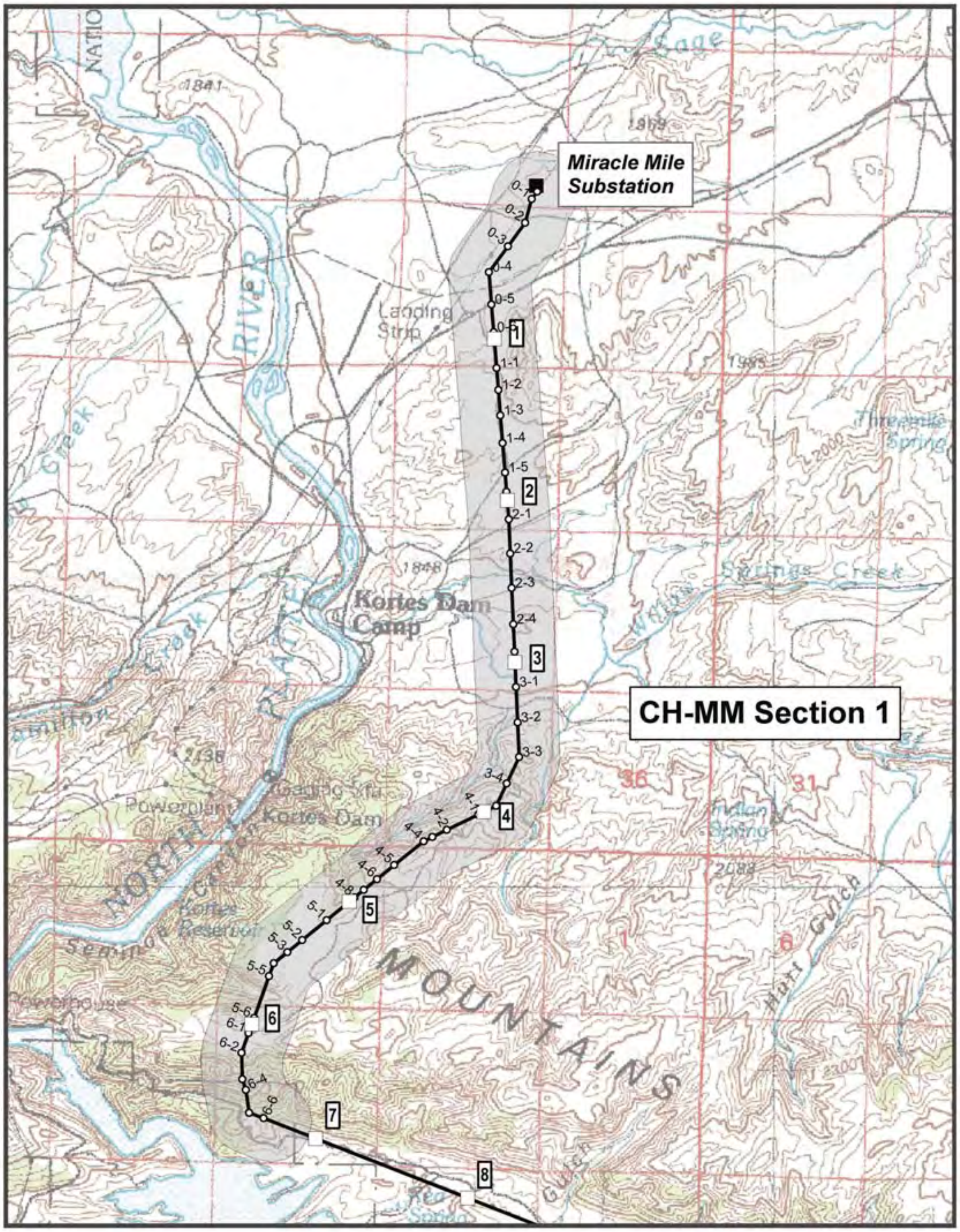


Exhibit A-1

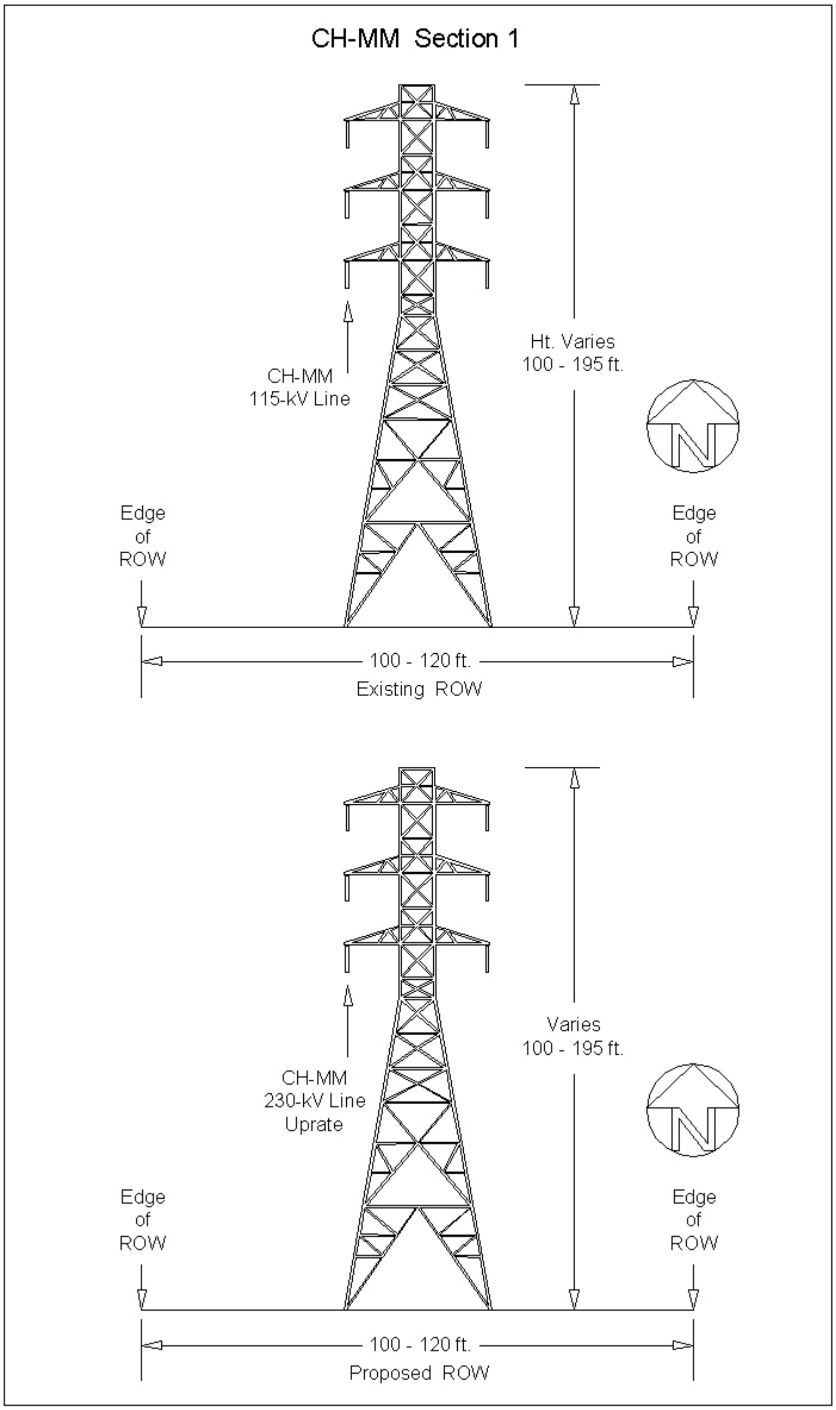

CH-MM Section 1
Ht. Varies
100 - 195 ft.
CH-MM
115-kV Line
Edge
of
ROW
Edge
of
ROW
100 - 120 ft.
Existing ROW
Varies
100 - 195 ft.
CH-MM
230-kV Line
Uprate
Edge
of
ROW
Edge
of
ROW
100 - 120 ft.
Proposed ROW

Figure A-1

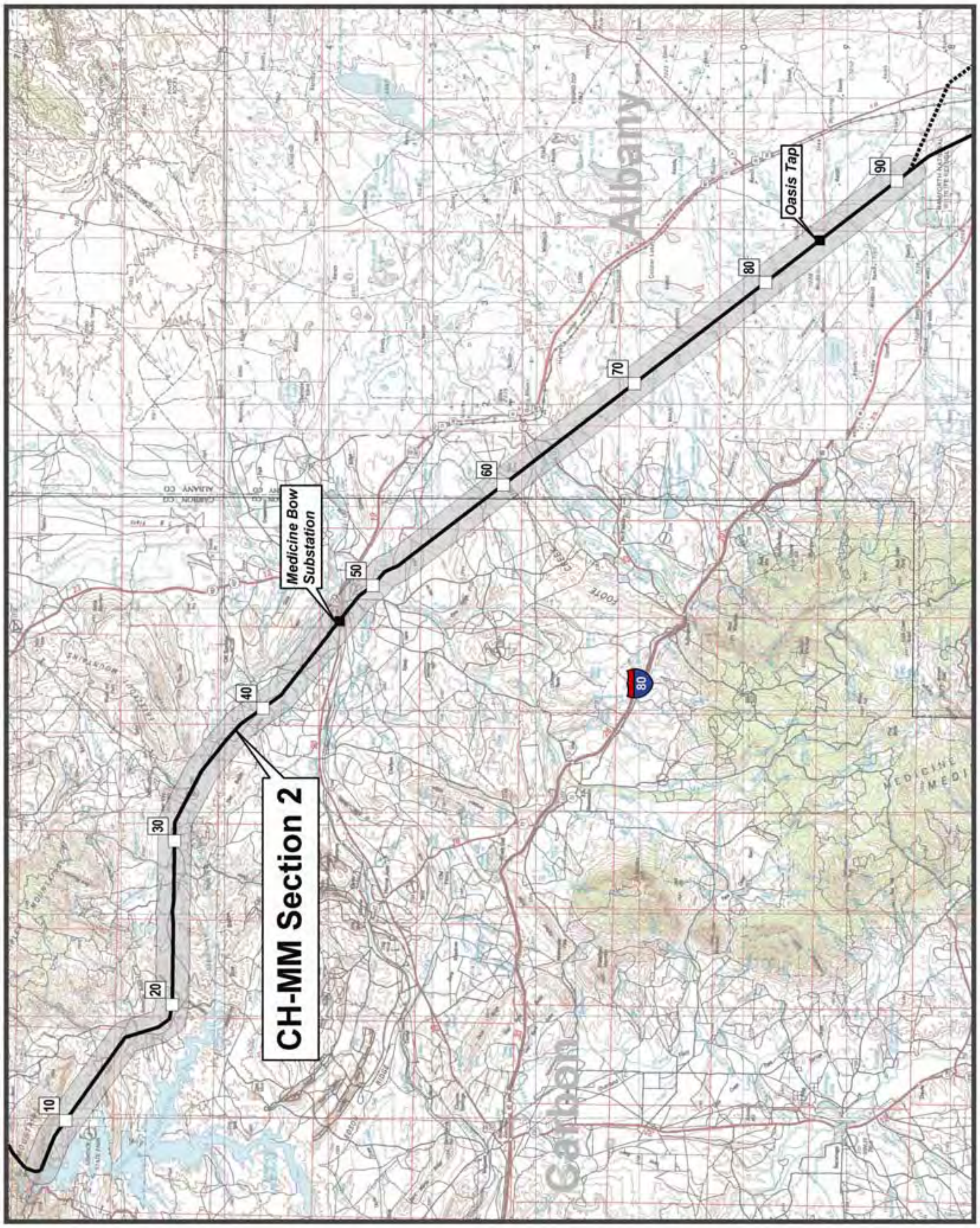

CH-MM Section 2
Medicine Bow Substation
Oasis Tap
Albany
Carbon
10
20
30
40
50
60
70
80
90
80

Exhibit A-2

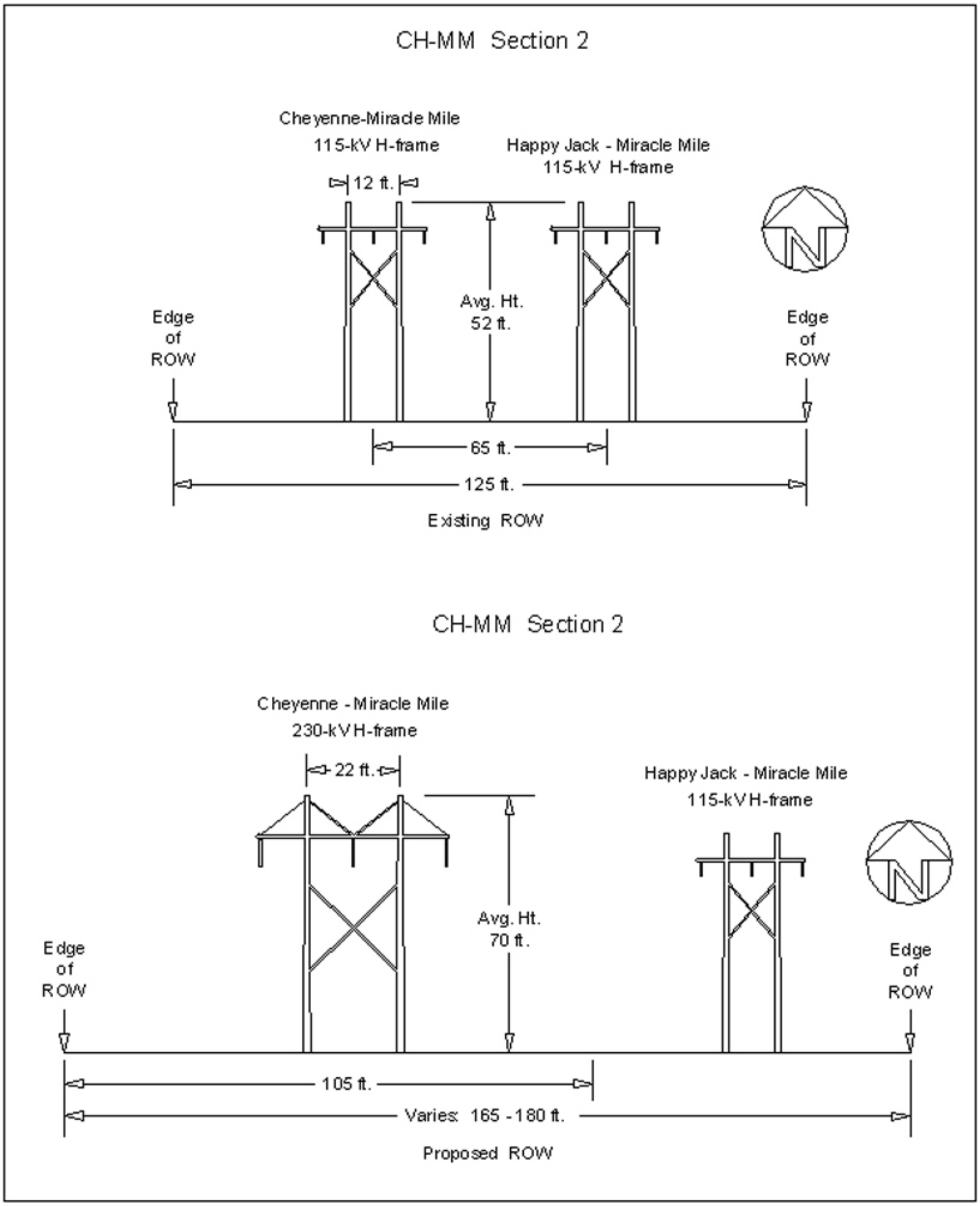

CH-MM Section 2
Cheyenne-Miracle Mile
115-kV H-frame
Happy Jack - Miracle Mile
115-kV H-frame
12 ft.
Avg. Ht.
52 ft.
Edge
of
ROW
Edge
of
ROW
65 ft.
125 ft.
Existing ROW
CH-MM Section 2
Cheyenne - Miracle Mile
230-kV H-frame
22 ft.
Happy Jack - Miracle Mile
115-kV H-frame
Avg. Ht.
70 ft.
Edge
of
ROW
Edge
of
ROW
105 ft.
Varies: 165 - 180 ft.
Proposed ROW

Figure A-2

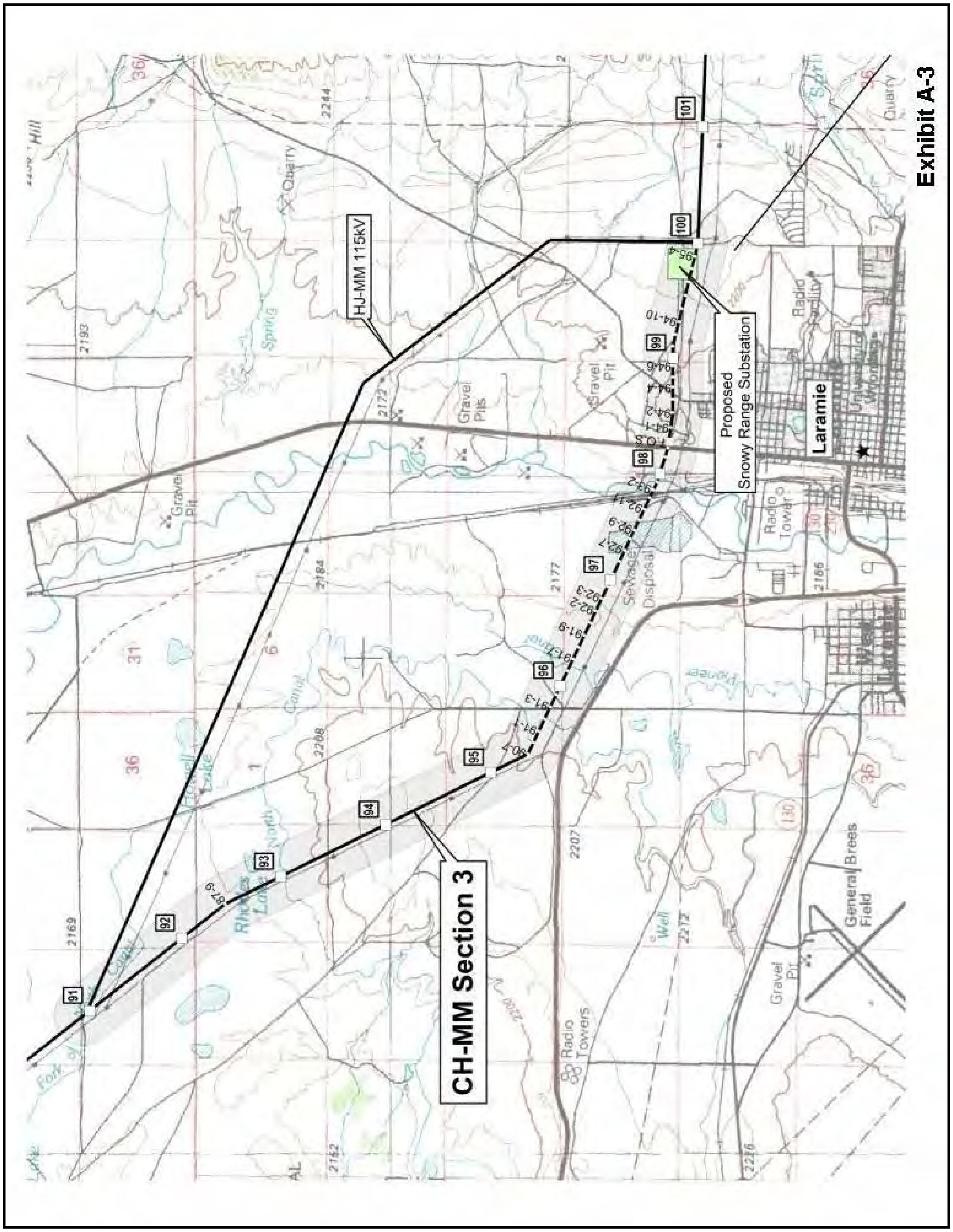


Exhibit A-3
CH-MM Section 3
HJ-MM 115kV
Proposed
Snowy Range Substation
Laramie
West Laramie
General Brees Field
Radio Towers
Gravel Pit
Sewage Disposal

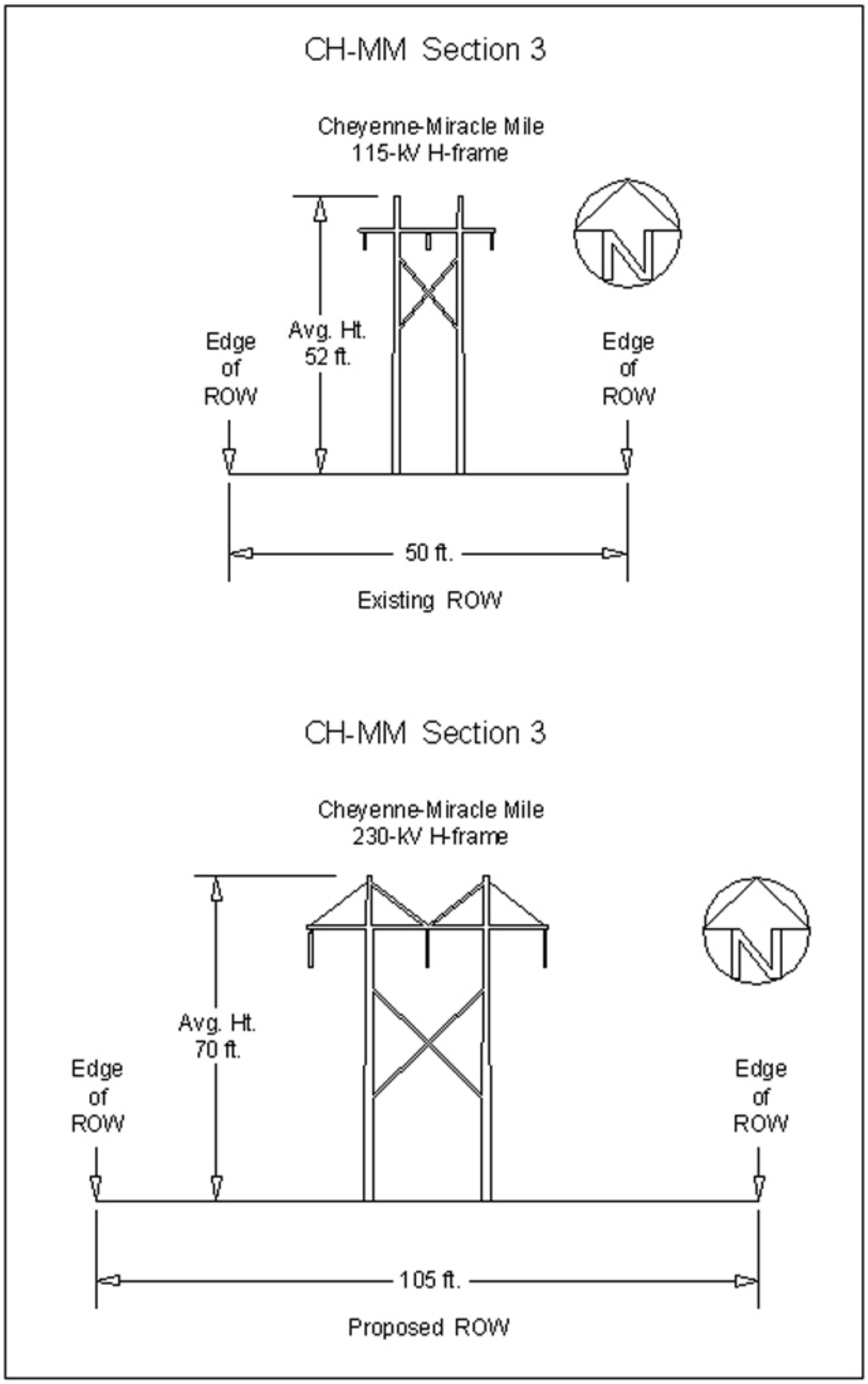

CH-MM Section 3
Cheyenne-Miracle Mile
115-kV H-frame
Avg. Ht.
52 ft.
Edge
of
ROW
Edge
of
ROW
50 ft.
Existing ROW
CH-MM Section 3
Cheyenne-Miracle Mile
230-kV H-frame
Avg. Ht.
70 ft.
Edge
of
ROW
Edge
of
ROW
105 ft.
Proposed ROW

Figure A-3

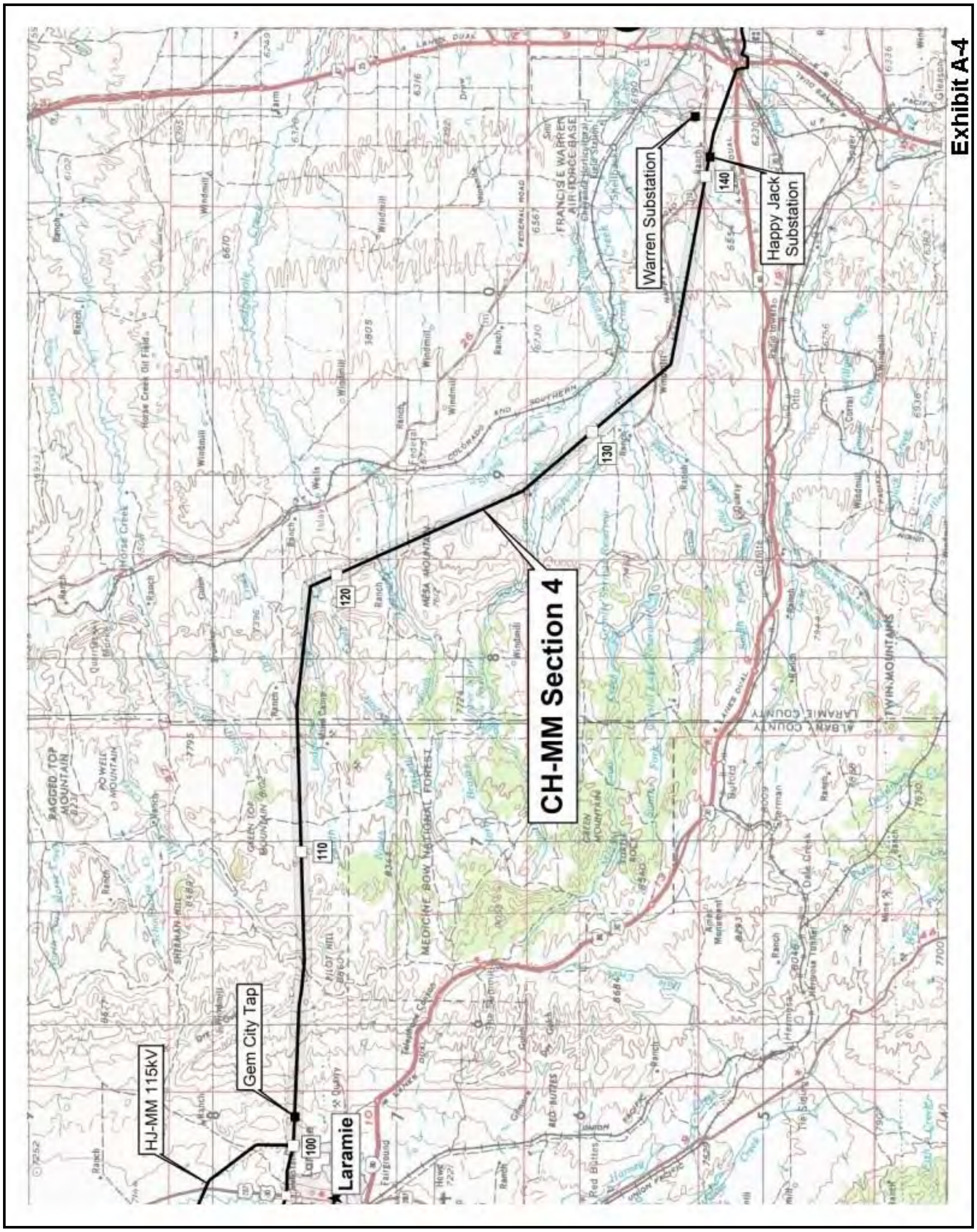


Exhibit A-4
CH-MM Section 4
Warren Substation
Happy Jack
Substation
Gem City Tap
HJ-MM 115kV
Laramie
100
110
120
130
140
MEDICINE BOW NATIONAL FOREST
FRANCIS E WARREN
AIR FORCE BASE
LARAMIE COUNTY
ALBANY COUNTY

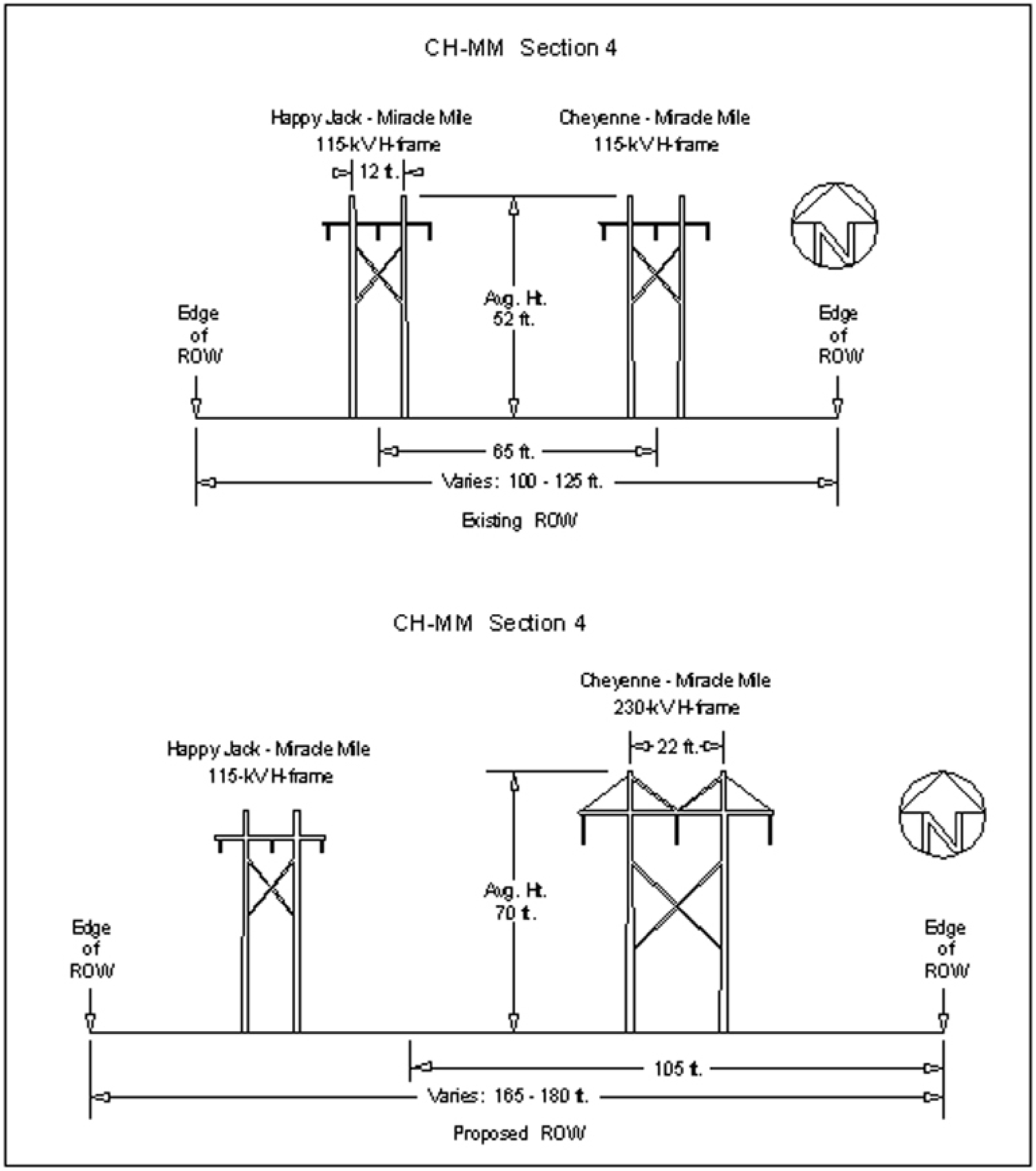

CH-MM Section 4
Happy Jack - Miracle Mile
115-kV H-frame
12 ft.
Cheyenne - Miracle Mile
115-kV H-frame
Avg. Ht.
52 ft.
Edge
of
ROW
Edge
of
ROW
65 ft.
Varies: 100 - 125 ft.
Existing ROW
CH-MM Section 4
Cheyenne - Miracle Mile
230-kV H-frame
22 ft.
Happy Jack - Miracle Mile
115-kV H-frame
Avg. Ht.
70 ft.
Edge
of
ROW
Edge
of
ROW
105 ft.
Varies: 165 - 180 ft.
Proposed ROW

Figure A-4

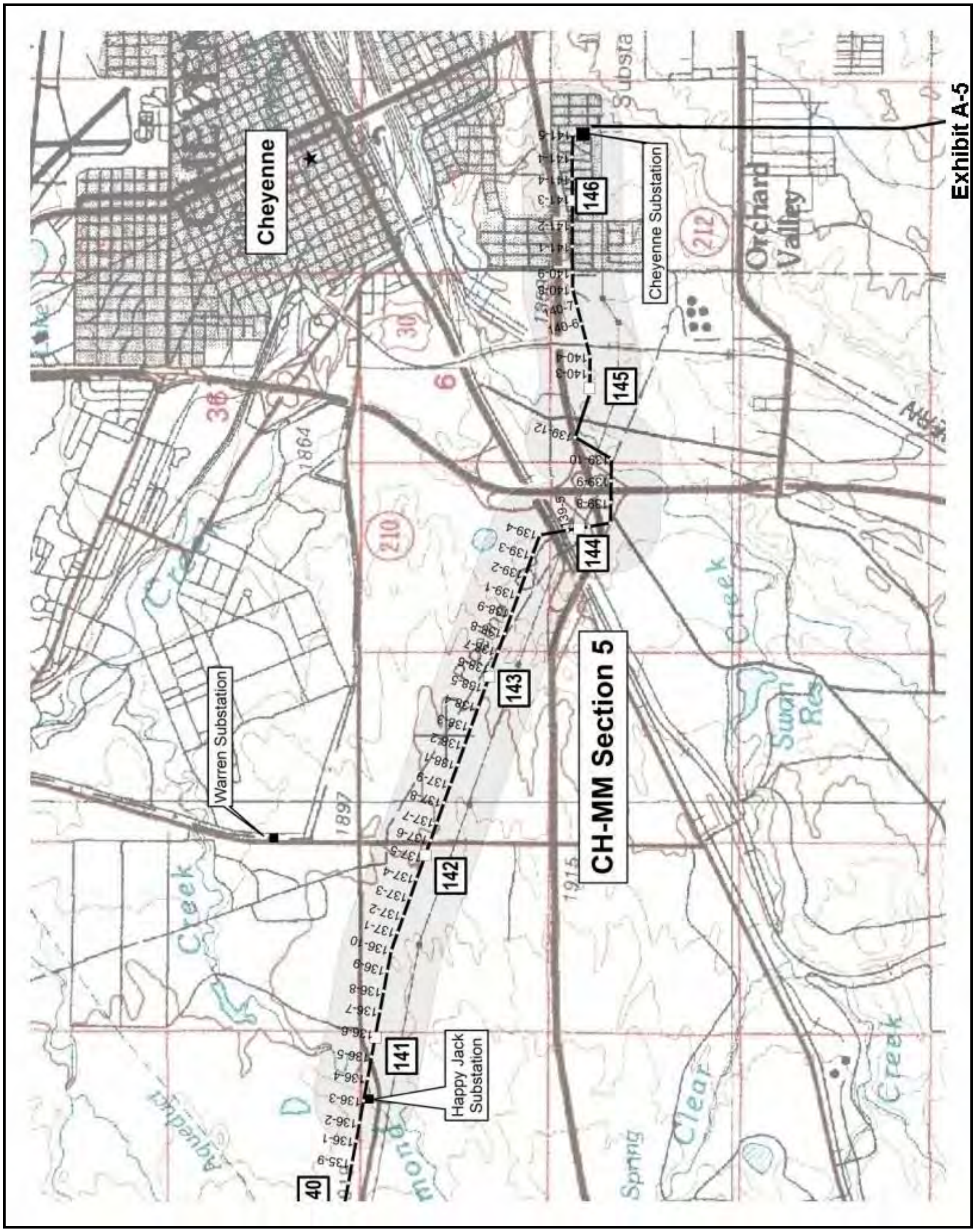


Exhibit A-5
CH-MM Section 5
Cheyenne
Cheyenne Substation
Warren Substation
Happy Jack Substation
Orchard Valley
40
141
142
143
144
145
146

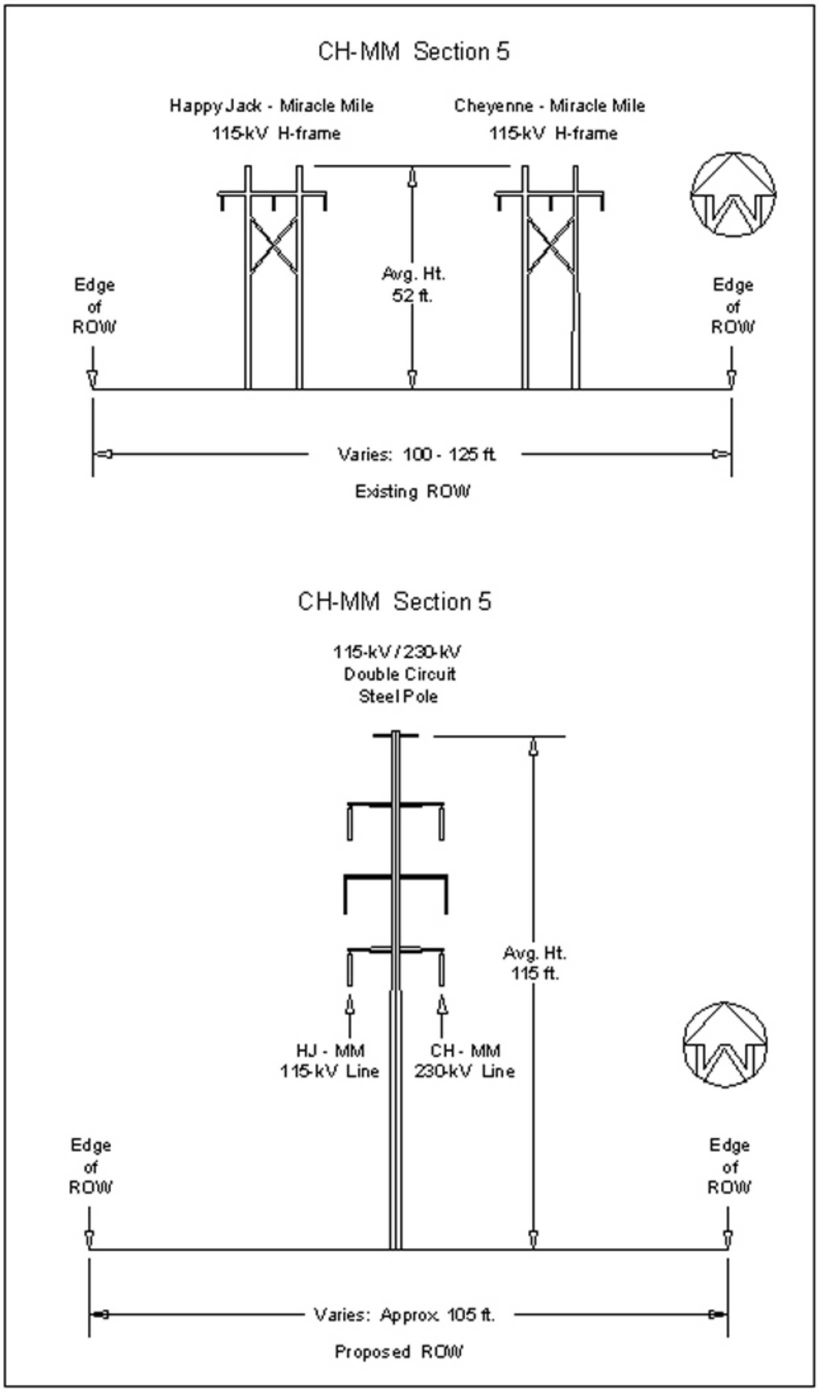

CH-MM Section 5
Happy Jack - Miracle Mile
115-kV H-frame
Cheyenne - Miracle Mile
115-kV H-frame
Edge of ROW
Avg. Ht. 52 ft.
Edge of ROW
Varies: 100 - 125 ft.
Existing ROW
CH-MM Section 5
115-kV / 230-kV
Double Circuit
Steel Pole
Avg. Ht. 115 ft.
HJ - MM
115-kV Line
CH - MM
230-kV Line
Edge of ROW
Edge of ROW
Varies: Approx. 105 ft.
Proposed ROW

Figure A-5

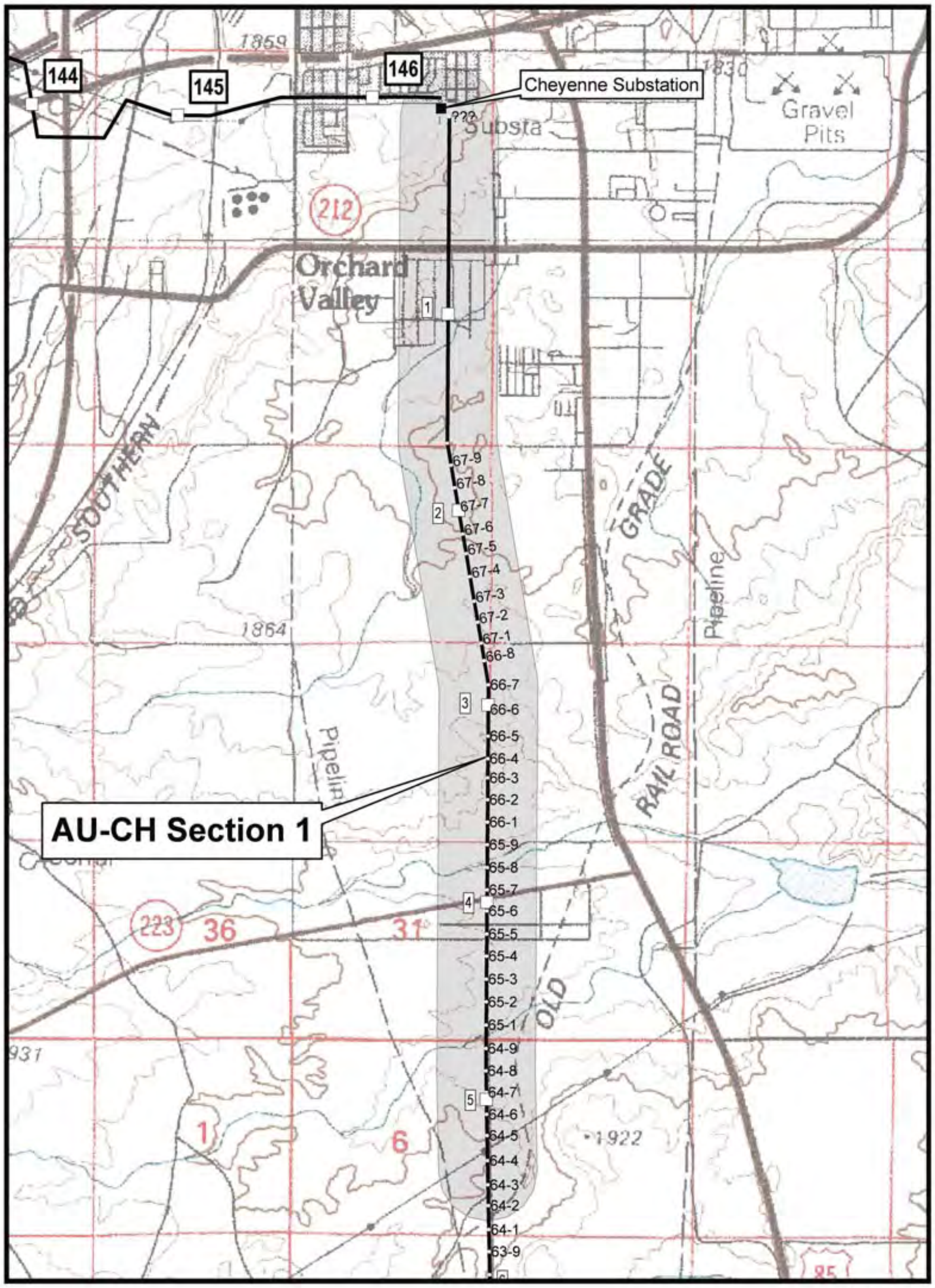

144
145
146
Cheyenne Substation
Substa
Gravel Pits
212
Orchard Valley
SOUTHERN
GRADE
Pipeline
RAIL ROAD
OLD
AU-CH Section 1
1864
1859
1922
223
36
31
1
6
67-9
67-8
67-7
67-6
67-5
67-4
67-3
67-2
67-1
66-8
66-7
66-6
66-5
66-4
66-3
66-2
66-1
65-9
65-8
65-7
65-6
65-5
65-4
65-3
65-2
65-1
64-9
64-8
64-7
64-6
64-5
64-4
64-3
64-2
64-1
63-9

Exhibit A-6

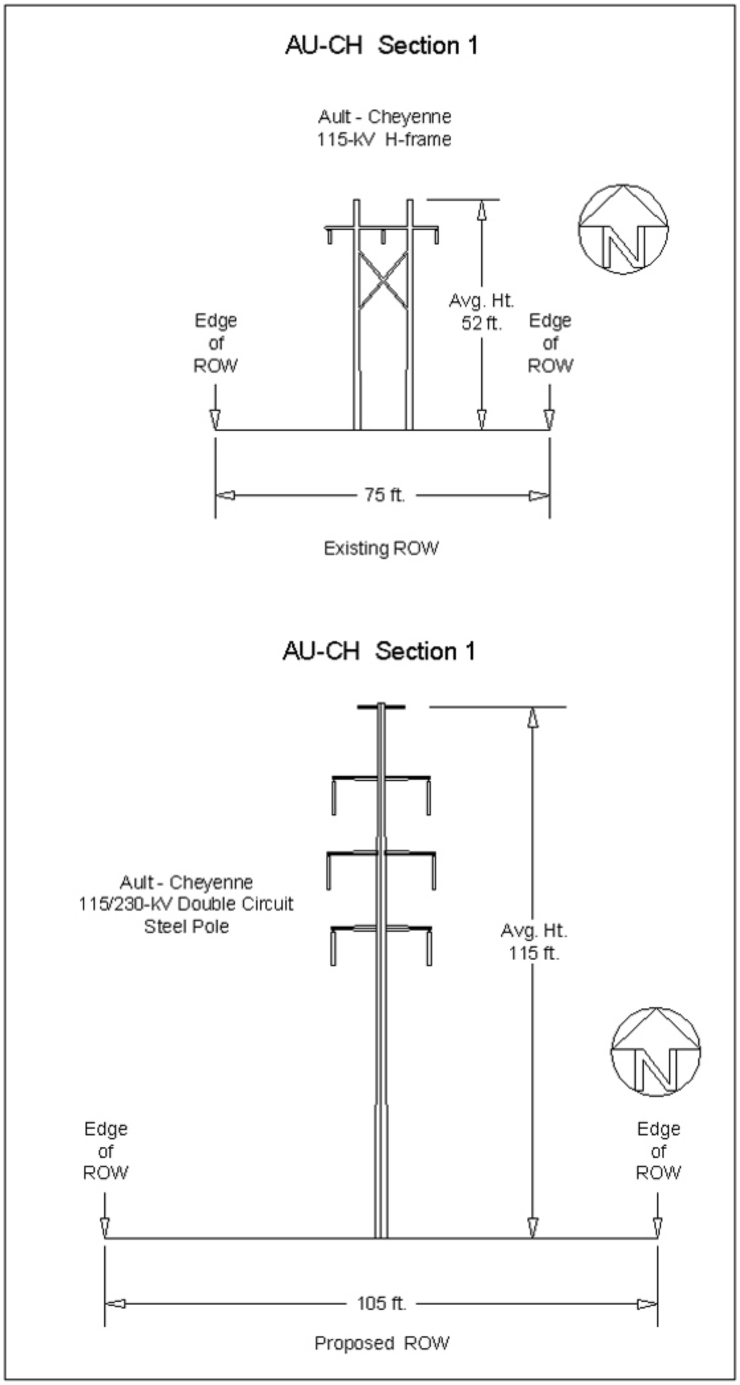

AU-CH Section 1
Ault - Cheyenne
115-kV H-frame
Avg. Ht.
52 ft.
Edge
of
ROW
Edge
of
ROW
75 ft.
Existing ROW
AU-CH Section 1
Ault - Cheyenne
115/230-kV Double Circuit
Steel Pole
Avg. Ht.
115 ft.
Edge
of
ROW
Edge
of
ROW
105 ft.
Proposed ROW

Figure A-6

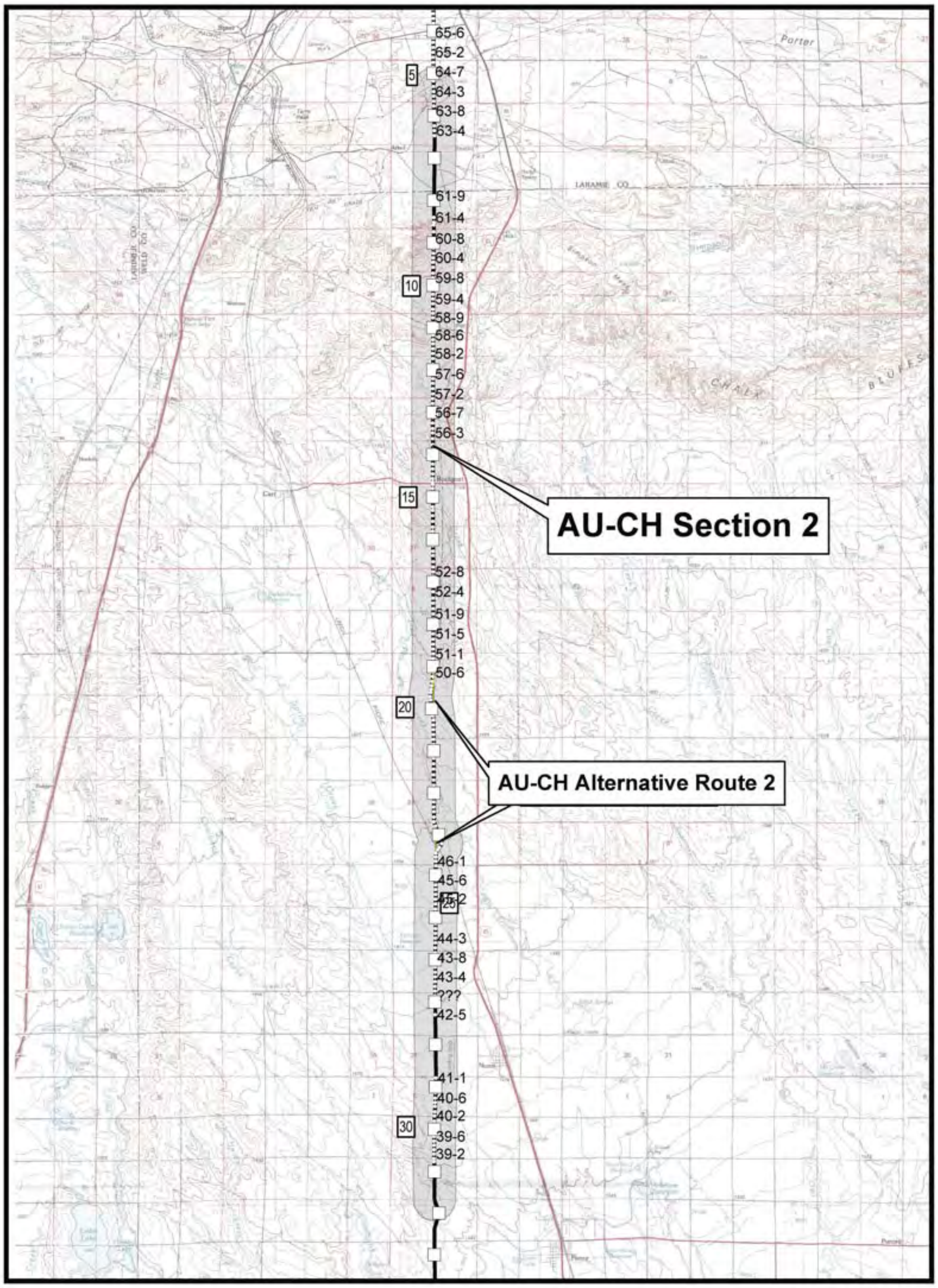

65-6
65-2
5
64-7
64-3
63-8
63-4
61-9
61-4
60-8
60-4
10
59-8
59-4
58-9
58-6
58-2
57-6
57-2
56-7
56-3
15
AU-CH Section 2
52-8
52-4
51-9
51-5
51-1
50-6
20
AU-CH Alternative Route 2
46-1
45-6
25
44-3
43-8
43-4
???
42-5
41-1
40-6
40-2
30
39-6
39-2
Porter
LARAMIE CO

Exhibit A-7

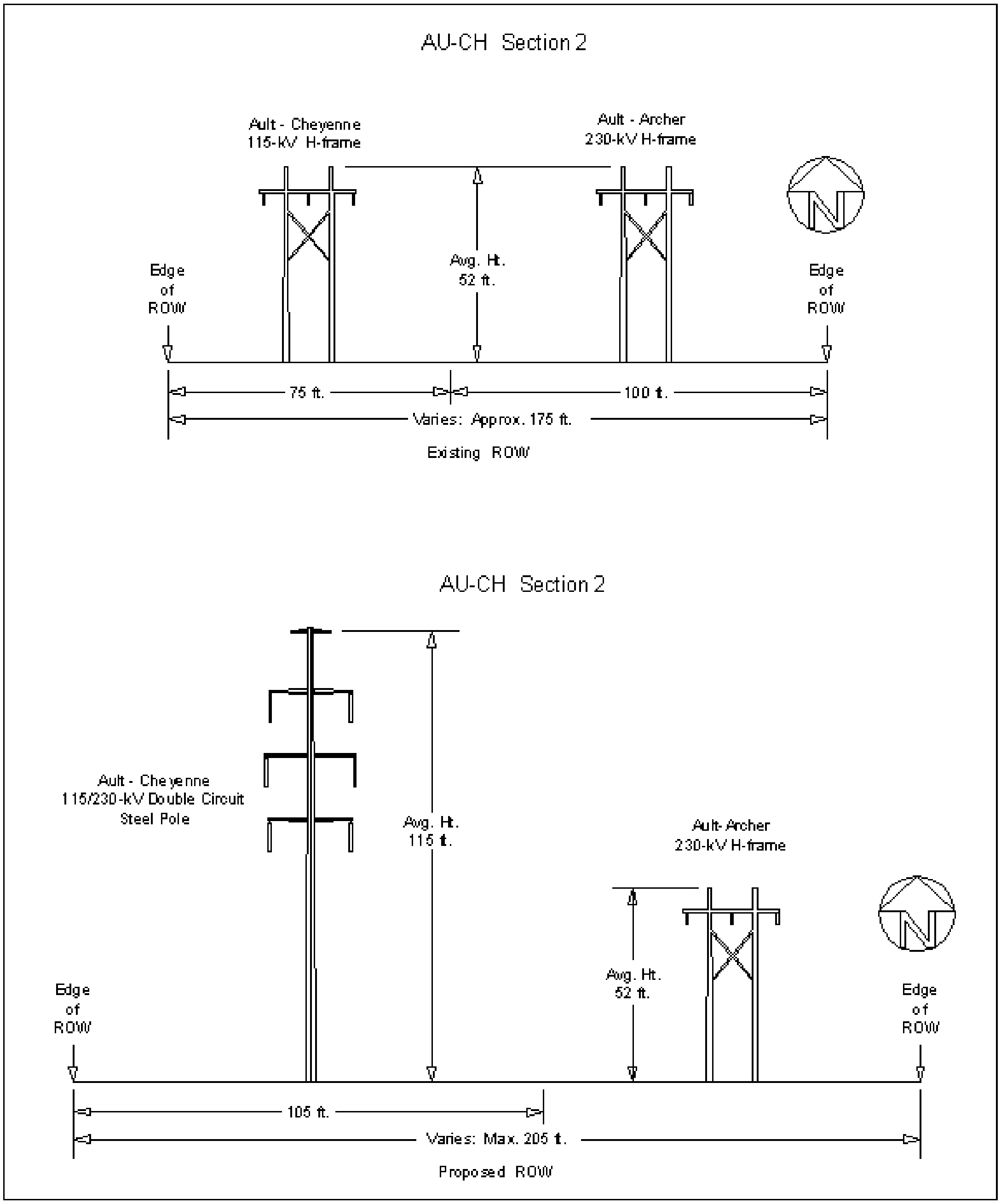

AU-CH Section 2
Ault - Cheyenne
115-kV H-frame
Ault - Archer
230-kV H-frame
Avg. Ht.
52 ft.
Edge
of
ROW
Edge
of
ROW
75 ft.
100 ft.
Varies: Approx. 175 ft.
Existing ROW
AU-CH Section 2
Ault - Cheyenne
115/230-kV Double Circuit
Steel Pole
Avg. Ht.
115 ft.
Ault-Archer
230-kV H-frame
Avg. Ht.
52 ft.
Edge
of
ROW
Edge
of
ROW
105 ft.
Varies: Max. 205 ft.
Proposed ROW

Figure A-7

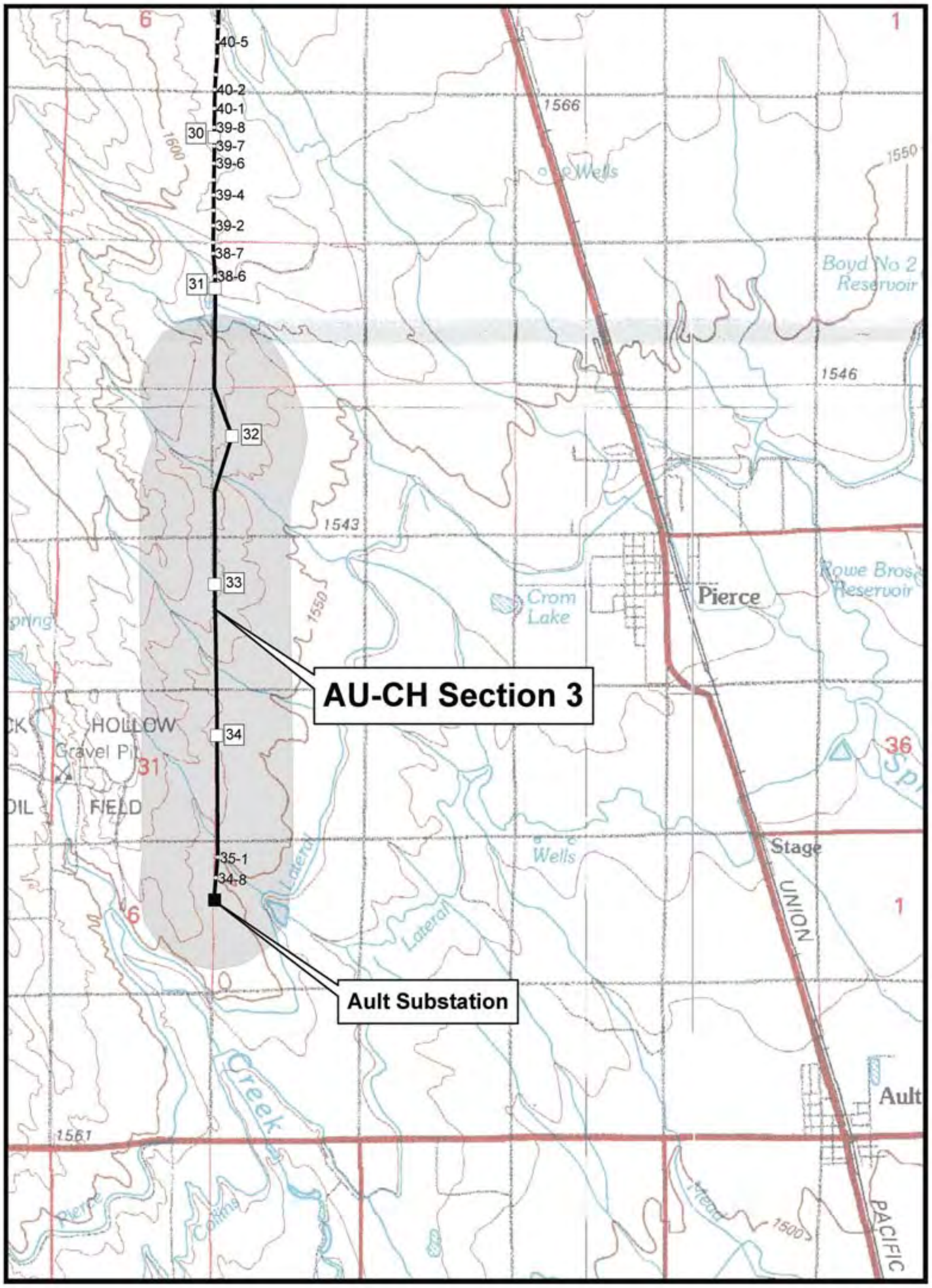

40-5
40-2
40-1
39-8
39-7
39-6
39-4
39-2
38-7
38-6
30
31
32
33
34
35-1
34-8
AU-CH Section 3
Ault Substation
1566
1550
Wells
Boyd No 2 Reservoir
1546
1543
1550
Crom Lake
Pierce
Rowe Bros Reservoir
HOLLOW
Gravel Pit
OIL
FIELD
Stage
UNION
Lateral
Creek
Ault
1561
Collins
PACIFIC
1500
36
1
6
31

Exhibit A-8

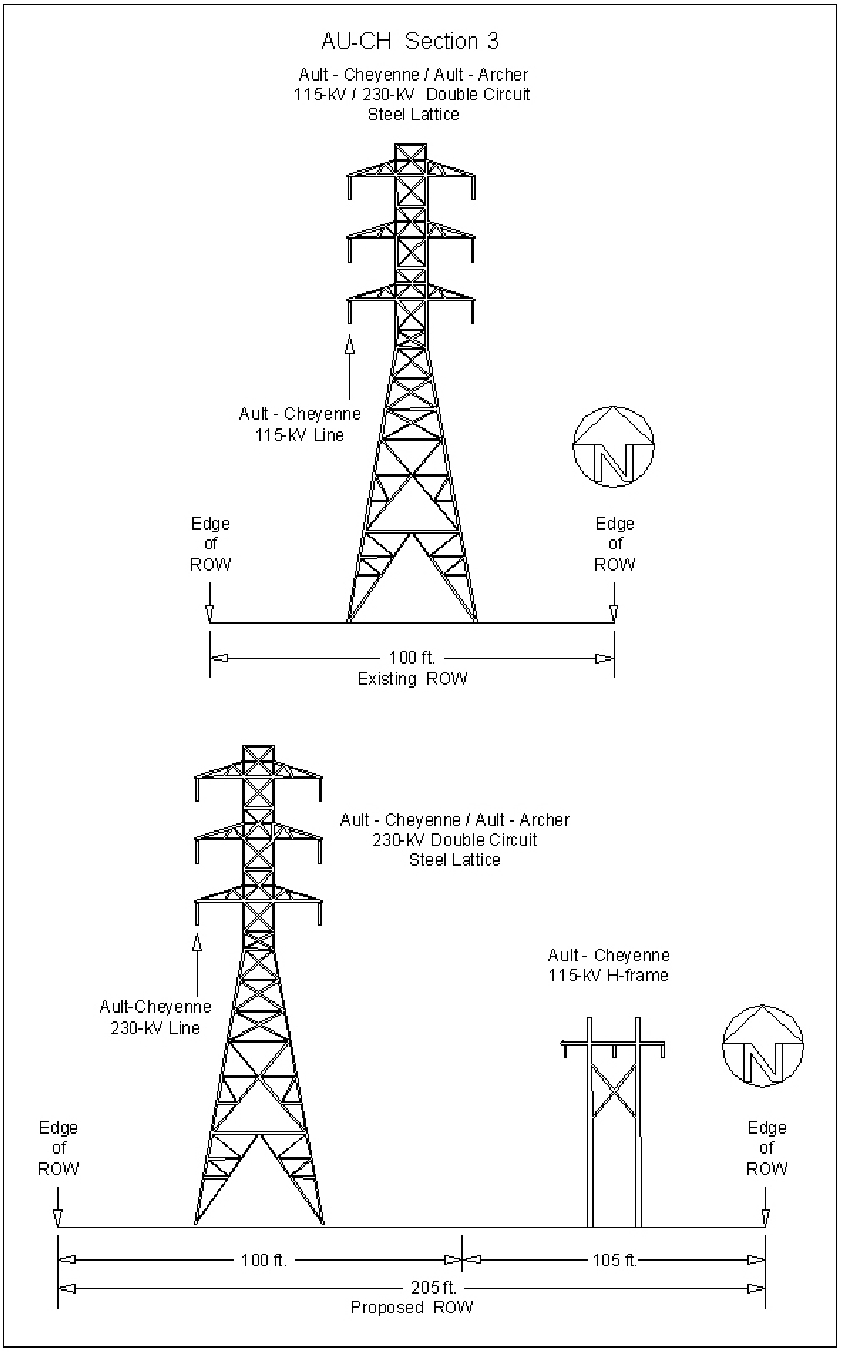
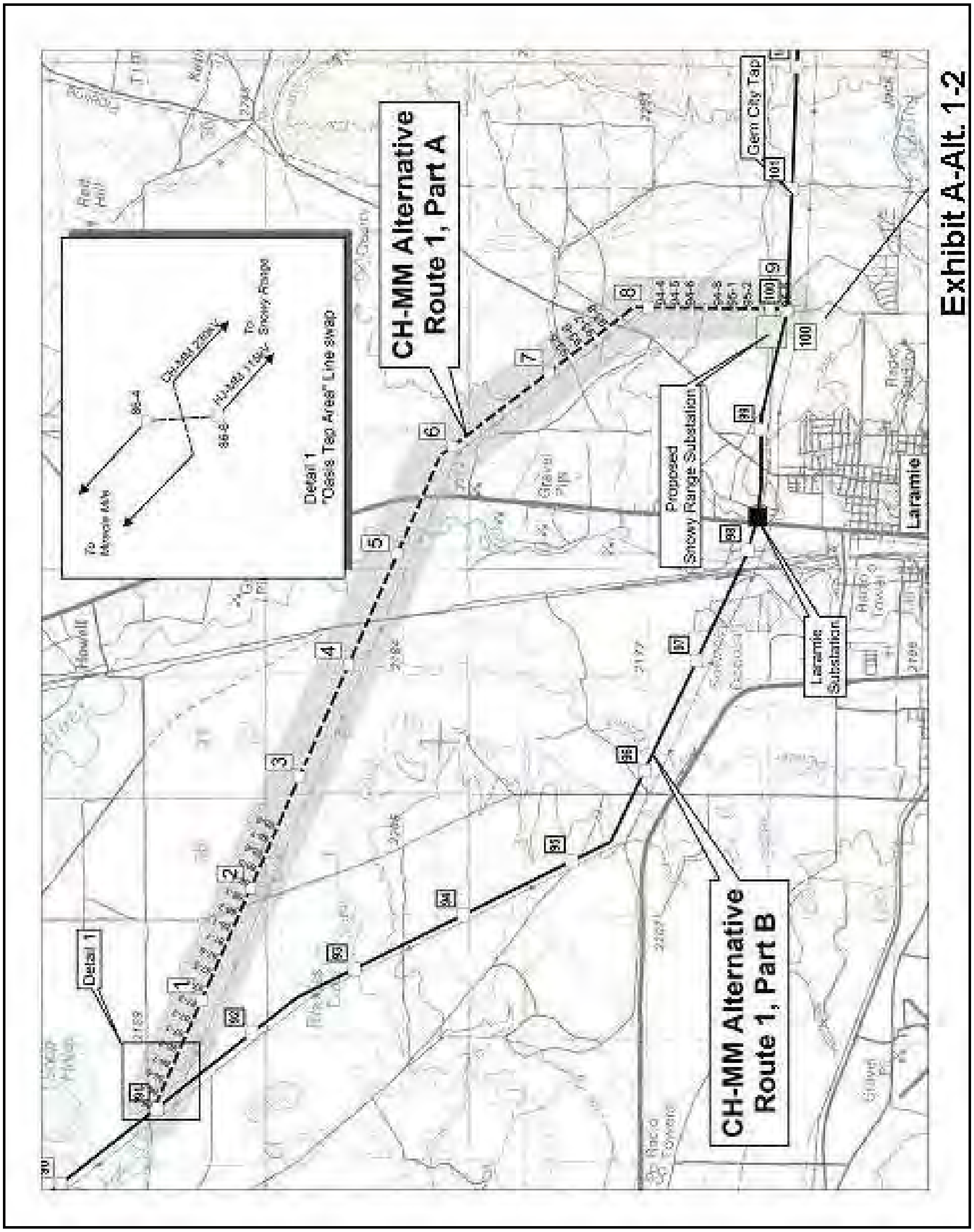

AU-CH Section 3
Ault - Cheyenne / Ault - Archer
115-kV / 230-kV Double Circuit
Steel Lattice
Ault - Cheyenne
115-kV Line
Edge
of
ROW
Edge
of
ROW
100 ft.
Existing ROW
Ault - Cheyenne / Ault - Archer
230-kV Double Circuit
Steel Lattice
Ault - Cheyenne
115-kV H-frame
Ault-Cheyenne
230-kV Line
Edge
of
ROW
Edge
of
ROW
100 ft.
105 ft.
205 ft.
Proposed ROW

Figure A-8

CH-MM Alternative Route 1 Transmission Line Rebuild Project Location Map Exhibits and Cross Section Figures and Table


CH-MM Alternative
Route 1, Part A
CH-MM Alternative
Route 1, Part B
Detail 1
"Oasis Tap Area" Line swap
To Miracle Mile
To Snowy Range
Proposed
Snowy Range Substation
Laramie
Substation
Gem City Tap
Laramie
Exhibit A-Alt. 1-2

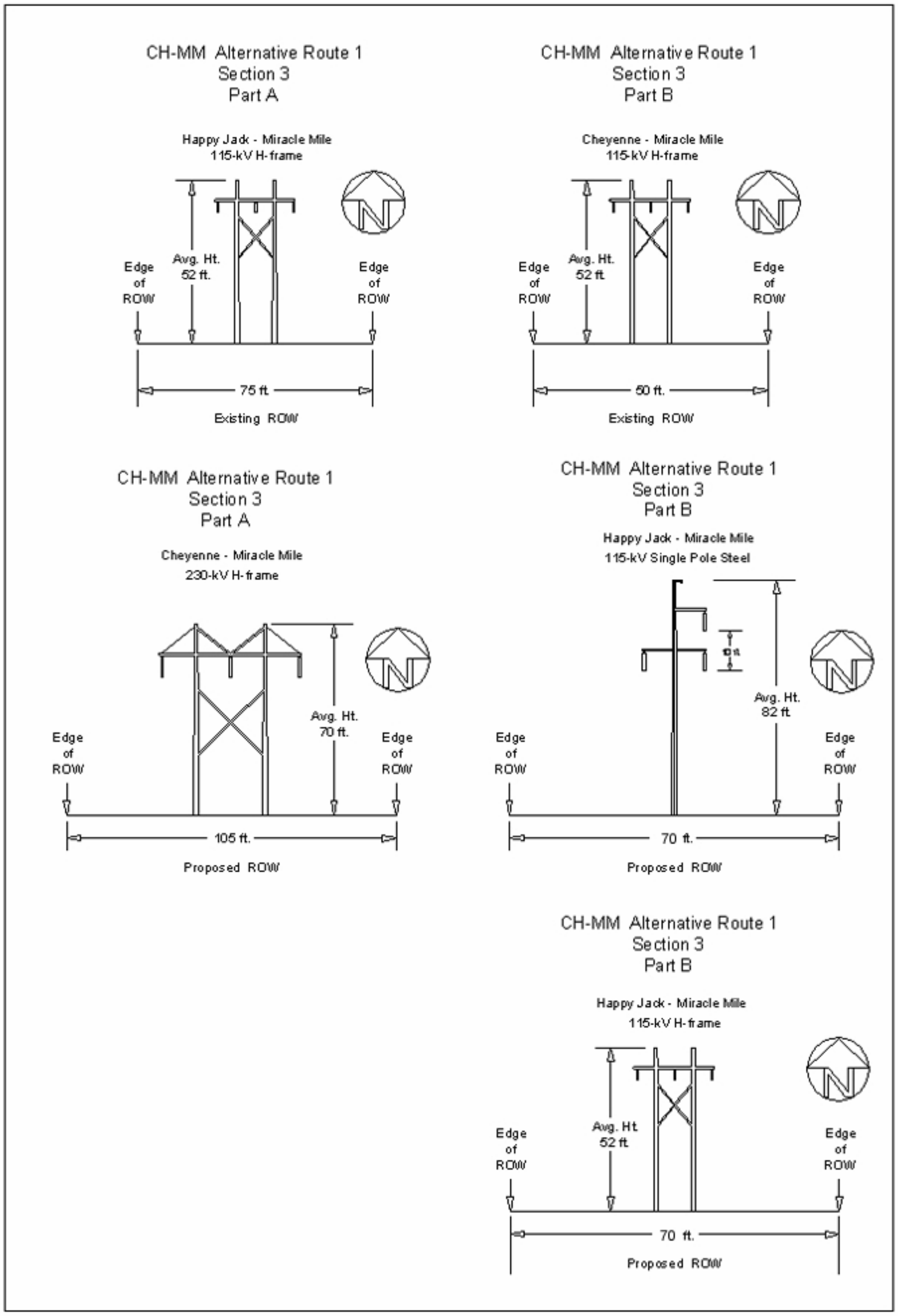


Figure A-Alt. 1-1

Table A – Alt 1- 1 Summary of Short-Term and Long-Term Surface Disturbance from CH-MM Alternative Route 1 Transmission Line Construction

Project Component	**Quantity (Number of Structures)**	**Short-Term Disturbance (Acres)**	**Long-Term Disturbance (Acres)**
Part A (CH-MM)			
230-kV H-frame structures	67	10.0 acres	0.06 acres
Conductor stringing sites	3	3	N/A
Staging Areas	1	5	N/A
Removal of Existing H-frame structures	80	11.9	N/A
New Access Roads	N/A	N/A	N/A
Total		**29.9**	**0.06**
Part B (HJ-MM)			
115-kV H-frame structure sites	38	5.7	0.02 acres
115-kV single pole structure sites	10	1.5	0.002 acres
Conductor stringing sites	2	2	N/A
Staging Areas	1	5	N/A
Removal of Existing H-frame structures	68	10.2	N/A
New Access Roads	N/A	N/A	N/A
Total		**24.4**	**0.02**

Notes: N/A: Not Applicable
Source: Western Area Power Administration

Appendix B. Tables 3.3, 3.4 and 3.8

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Appendix B Table 3.3 Summary of Geology, Soils and Paleontology

Milepost	Geology (Period)	Paleontology	Geologic Hazards	Soils
CH MM 6.5	Medicine Bow (Cretaceous) Lewis Shale (Cretaceous) Mesaverde Group(Cretaceous) Steele Shale (Cretaceous) , Niobrara (Cretaceous), Frontier (Cretaceous) Mowry Shale (Cretaceous), Thermopolis Shale(Cretaceous) Cloverly (Cretaceous) Morrison Formation (Jurassic)	Mixed geologic units, identified dinosaur fossil sites within Cloverly Formation, Sundance Formation, and Morrison Formation	None noted.	Torriorthenty, Shallow Torriorthenty Association
7.0				
8.0			Relatively small seismic activity.	
9.0				
10.0				
11.0				
12.0				
13.0				
14.0				
15.0				
16.0				
17.0				
18.0				
19.0	Farris (Cretaceous and Paleocene Epoch of Tertiary) Hanna (Cretaceous and Paleocene Epoch of Tertiary)	Study area is north of known vertebrate fossil bearing zones.		
20.0				
21.0				
22.0				
23.0				
24.0				
25.0				
26.0				
27.0				
28.0				
29.0				
30.0			None noted.	
31.0				
32.0	Steele Shale (Cretaceous) Niobrara (Cretaceous)	Marine deposits of sedimentary rock Vertebrate fossils unlikely.		
33.0				
34.0				
35.0				
36.0				
37.0				
38.0				
39.0				
40.0				
41.0				
42.0				
43.0				
44.0				
45.0	Steele Shale (Cretaceous) Niobrara (Cretaceous)	Marine deposits of sedimentary rock Vertebrate fossils unlikely.	None noted.	Torriorthenty, Shallow Torriorthenty Association
46.0				
47.0				
48.0				
49.0				
50.0				
51.0				
52.0				
53.0				
54.0				
55.0				
56.0				
57.0				
58.0				
59.0				Forelle-Poposhia-Diamondville (F-P-D)
60.0	Almond (Cretaceous)			

Appendix B Table 3.3 Summary of Geology, Soils and Paleontology

Milepost	Geology (Period)	Paleontology	Geologic Hazards	Soils
61.0				Borollic Camborthids-Pahlow-Alcova (BC-P-A)
62.0	Steele (Cretaceous)			
63.0				Forelle-Poposhia-Diamondville (F-P-D)
64.0	Almond (Cretaceous)			
65.0				
66.0	Lewis Shale (Cretaceous)			
67.0				
68.0	Medicine Bow (Cretaceous)	Tertiary Period vertebrate fossils possible.		
69.0	Wind River (Eocene Epoch of the Tertiary Period)			
70.0				
71.0				
72.0				GF-T-E
73.0				F-P-D
74.0				Gerdrum Family-Tisworth-Elkol (GF-T-E)
75.0				
76.0				
77.0				
78.0				
79.0				
80.0				
81.0	Almond (Cretaceous)	Vertebrate fossils unlikely.		
82.0	Recent Depositional Activity (Tertiary)	Tertiary Period vertebrate fossils possible.	None noted.	GF-T-E
83.0				
84.0				
85.0				
86.0				
87.0				Redrob-Grenoble
88.0		Vertebrate fossils possible.		
89.0	Recent Depositional Activity			F-P-D
90.0				
91.0				
92.0				
93.0	Frontier (Cretaceous)			
94.0	Recent Depositional Activity (Tertiary)			
95.0				
96.0				
97.0				BC-P-A
98.0	98.0 to 99.0 and from 100.0 to 100.6, Chugwater Formation (Triassic); 99.0 to 100.0, Alluvial fan (Tertiary); 100.6 to 101.0, Forelle Limestone (Permian); 101.0 to 101.1, Satanka Shale; 101.0 to 101.3 (Permian), Recent Deposition (Tertiary); 101.3 to 105.6 and from 106.0 to 106.7, Casper and Fountain Formations (Pennsylvanian); 105.6 to 106.0, Laramie Mountains Anorthesite and Norite (Precambrian Era)	Vertebrate fossils unlikely.	Relatively small seismic activity from 98.0 to 104.0; normal and reverse faults from 100.8.	Wycolo-Tieside-Fiveoh
99.0				
100.0				
101.0				Pilotpeak-Canwall-Rock Outcrop
102.0				
103.0				
104.0				Cheadle-Nathale-Rock Outcrop
105.0				
106.0				Rogert-Rock Outcrop
107.0	Sherman Granite (Precambrian Era)		None noted.	
108.0				
109.0				
110.0				

Appendix B Table 3.3 Summary of Geology, Soils and Paleontology

Milepost	**Geology (Period)**	**Paleontology**	**Geologic Hazards**	**Soils**
111.0				
112.0				
113.0	Sherman Granite (Precambrian Era)	Vertebrate fossils unlikely.	None noted.	Boyle-Lininger-Rock Outcrop
114.0				
115.0				Ipson-Evanston-Trimad
116.0				
117.0	White River Formation (Eocene Epoch of Tertiary Period)	Tertiary Period vertebrate fossils possible.	Reverse fault.	
118.0			None noted.	
119.0				Ipson-Evanston-Trimad
120.0				
121.0				
122.0		Tertiary Period vertebrate fossils possible.	None noted.	
123.0	White River Formation (Eocene Epoch of Tertiary Period)			
124.0				
125.0				
126.0				
127.0				Poposhia-Blazon-Trimad
128.0				
129.0				
130.0				
131.0				Merden-Evanston-Chivington
132.0				Evanston-Trinidad-Poposhia
133.0				
134.0				
135.0	Ogallala Formation (Oligocene Epoch of the Tertiary)			
136.0				
137.0				
138.0				
139.0				Ascalon-Altvan-Treon
140.0				
141.0				
142.0				
143.0				
144.0				
145.0				
146.0				Cheyenne Urban Area CH MM145.5 to AU CH 1.5
CH MM 146.2 /0.0 AU CH				
1.0				
2.0				
3.0				
4.0				
5.0	Ogallala Formation (Oligocene Epoch of the Tertiary)	Tertiary Period vertebrate fossils possible	None Noted	Ascalon-Altvan-Treon
6.0				
7.0				
8.0				Ascalon-Peetz
9.0				
10.0				
11.0	White River Formation (Eocene Epoch of Tertiary Period)			Argiustolls – Rock Outcrop – Ustic
12.0				

Appendix B Table 3.3 Summary of Geology, Soils and Paleontology

Milepost	**Geology (Period)**	**Paleontology**	**Geologic Hazards**	**Soils**
				Torriorthents
13.0	Laramie Formation (Cretaceous)	Vertebrate fossils possible		Olney – Ascalon-Platner
14.0				
15.0				Renohill – Terry-Shingle
16.0	Older gravels and alluvium (Pre – Bull Lake, Quaternary Age)	Tertiary Period vertebrate fossils possible		Ascalon-Peetz
17.0				
18.0				
19.0				
20.0				
21.0				Olney – Ascalon-Platner
22.0				
23.0				Altvan - Dacono
24.0				
25.0				
26.0				
27.0		Tertiary Period vertebrate fossils possible		
28.0				Olney – Ascalon-Platner
29.0				Renohill – Terry-Shingle
30.0	Laramie Formation (Cretaceous)	Vertebrate fossils possible		
31.0				
32.0				Olney – Ascalon-Platner
33.0				Renohill – Terry
AU CH 34.0				

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
1	No name (tributary to Seminoe Reservoir)	Seminoe Dam NE	NENW Sec. 14, T25N, R84W	WUS (7)
2	No name (tributary to Seminoe Reservoir)	Seminoe Dam NE	NENE Sec. 14, T25N, R84W	Non-WUS[1]
3	No name (tributary to Seminoe Reservoir)	Seminoe Dam NE	SWNW Sec. 13, T25N, R84W	Non-WUS
4	No name (tributary to Seminoe Reservoir)	Seminoe Dam NE	NESW Sec. 13, T25N, R84W	Non-WUS
5	No name (tributary to Seminoe Reservoir)	Seminoe Dam NE	SESE Sec. 13, T25N, R84W	Non-WUS
6	No name (tributary to Seminoe Reservoir)	Seminoe Dam NE	SWSW Sec. 18, T25N, R83W	WUS (15)
7	Sipps Creek	Seminoe Dam SE	SWNE Sec. 19, T25N, R83W	WUS (3)
8	Sipps Creek	Seminoe Dam SE	SENE Sec. 19, T25N, R83W	Non-WUS
9	Sipps Creek	Seminoe Dam SE	SWNW Sec. 20, T25N, R83W	Non-WUS
10	No name (tributary to Seminoe Reservoir)	Seminoe Dam SE	NWNE Sec. 29, T25N, R83W	Non-WUS
11	No name (tributary to Seminoe Reservoir)	Seminoe Dam SE	NWNW Sec. 28, T25N, R83W	Non-WUS
12	Saylor Creek	Seminoe Dam SE	NWSE Sec. 28, T25N, R83W	WUS (20)
13	McNees Draw	Seminoe Dam SE	SESE Sec. 28, T25N, R83W	Non-WUS
14	Beaver Jimmy Creek	Seminoe Dam SE	SWSW Sec. 27, T25N, R83W	Non-WUS
15	Saylor Creek	Seminoe Dam SE	NWNE Sec. 34, T25N, R83W	WUS (10)
16	No name (tributary to Saylor Creek)	Seminoe Dam SE	SENE Sec. 34, T25N, R83W	Non-WUS
17	Homestake Draw	Schneider Ridge	SENE Sec. 34, T25N, R83W	Non-WUS
18	Saylor Creek	Schneider Ridge	NESW Sec. 35, T25N, R83W	WUS (3)
19	Caton Creek	Schneider Ridge	NENE Sec. 3, T24N, R83W	Non-WUS
20	Austin Creek	Schneider Ridge	NWSW Sec. 12, T24N, R83W	WUS (4)
21	No name (tributary to Austin Creek)	Schneider Ridge	NWNW Sec. 13, T24N, R83W	WUS (2)
22	No Name (tributary to Austin Creek)	Schneider Ridge	NWNW Sec. 13, T24N, R83W	Non-WUS
23	No name (tributary to Austin Creek)	Schneider Ridge	SENW Sec. 13, T24N, R83W	Non-WUS

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
24	No name (tributary to Seminoe Reservoir)	Schneider Ridge	SWSE Sec. 13, T24N, R83W	WUS (2)
25	No name (tributary to Cottonwood Draw)	Schneider Ridge	SWNW Sec. 20, T24N, R82W	Non-WUS
26	Cottonwood Draw	Schneider Ridge	SENE Sec. 20, T24N, R82W	WUS (5)
27	No name (tributary to Charlie Brooks Draw)	Schneider Ridge	SWNW Sec. 22, T24N, R82W	Non-WUS
28	No name	TE Ranch	SENE Sec. 22, T24N, R82W	Non-WUS
29	No name	TE Ranch	SENW Sec. 23, T24N, R82W	Non-WUS
30	No name (tributary to Medicine Bow River)	TE Ranch	SENW Sec. 24, T24N, R82W	WUS (30)
31	Dry Creek	TE Ranch	SENE Sec. 20, T24N, R81W	Non-WUS
32	Ditch	TE Ranch	SWNE Sec. 21, T24N, R81W	Ditch
33	Troublesome Creek	TE Ranch	SENE Sec. 21, T24N, R81W	WUS (8), potential wetland[3]
34	No name	TE Ranch	SENE Sec. 22, T24N, R81W	Non-WUS
35	Dry Creek	Difficulty	SESE Sec. 19, T24N, R80W	WUS (15)
36	No name (tributary to Dry Creek)	Difficulty	SESE Sec. 19, T24N, R80W	Non-WUS
37	Canal	Difficulty	NENW Sec. 29, T24N, R80W	Canal
38	Difficulty Creek	Difficulty	SWNE Sec. 29, T24N, R80W	WUS (8), potential wetland[3]
39	No name (tributary to Medicine Bow River)	Difficulty	NESW Sec. 28, T24N, R80W	Non-WUS
40	No name (tributary to Medicine Bow River)	Difficulty	NESW Sec. 28, T24N, R80W	Non-WUS
41	No name (tributary to Medicine Bow River)	Difficulty	SWSE Sec. 28, T24N, R80W	WUS (6)
42	No name (tributary to Medicine Bow River)	Difficulty	SESE Sec. 28, T24N, R80W	WUS (2)
43	No name (tributary to Medicine Bow River)	Difficulty	SENW Sec. 34, T24N, R80W	Non-WUS
44	Sledge Creek (tributary to Medicine Bow River)	Difficulty	NESE Sec. 34, T24N, R80W	WUS (30)
45	No name (tributary to Medicine Bow River)	Difficulty	SESW Sec. 35, T24N, R80W	Non-WUS
46	Medicine Bow River	Como East	SENE Sec. 2, T23N, R80W	WUS (30), potential wetland[3]

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
47	No name (tributary to Medicine Bow River)	Como East	SWSE Sec. 1, T23N, R80W	Non-WUS
48	No name (tributary to Medicine Bow River)	Como East	NENE Sec. 12, T23N, R80W	Non-WUS
49	Pine Draw	Como East	NENW Sec. 20, T23N, R79W	WUS (30)
50	No name (tributary to Pine Draw)	Como East	SWNE Sec. 20, T23N, R79W	Non-WUS
51	No name (tributary to Medicine Bow River)	Como East	SWSE Sec. 27, T23N, R79W	Non-WUS
52	No name	Como East	NENE Sec. 2, T22N, R79W	Non-WUS
53	No name	Medicine Bow	SWNE Sec. 7, T22N, R78W	Potential wetland[4]
54	No name	Medicine Bow	NWSW Sec. 8, T22N, R78W	Potential wetland[4]
55	Vandiver Ditch	Pine Ridge	SENE Sec. 21, T22N, R78W	Potential wetland[4]
56	Medicine Bow River	Pine Ridge	NESE Sec. 21, T22N, R78W	WUS (30), potential wetland[3]
57	No name (tributary to Medicine Bow River)	Pine Ridge	NWSW Sec. 22, T22N, R78W	Non-WUS
58	No name	Pine Ridge	SESE Sec. 27, T22N, R78W	Potential wetland[4]
59	No name (tributary to Medicine Bow River)	Pine Ridge	SESE Sec. 27, T22N, R78W	Non-WUS[5]
60	No name (tributary to Iron Hill Lake)	Foote Creek Lake	NESW Sec. 1, T21N, R78W	WUS (8)
61	No name (tributary to Iron Hill Lake)	Foote Creek Lake	SWSE Sec. 1, T21N, R78W	WUS (8)
62	No name	Foote Creek Lake	SWSE Sec. 1, T21N, R78W	WUS (4)
63	No name	Foote Creek Lake	SENE Sec. 12, T21N, R78W	WUS (4)
64	No name	Foote Creek Lake	SENE Sec. 12, T21N, R78W	Non-WUS
65	Ditch	Foote Creek Lake	NENW Sec. 18, T21N, R77W	Ditch
66	No name	Foote Creek Lake	SWNE Sec. 18, T21N, R77W	WUS (8)
67	No name	Foote Creek Lake	SWSW Sec. 17, T21N, R77W	Non-WUS
68	Foote Creek	Foote Creek Lake	SESE Sec. 20, T21N, R77W	WUS (12)
69	No name (tributary to Foote Creek)	Foote Creek Lake	NWNW Sec. 28. T21N, R77W	Non-WUS

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
70	No name	Pierce Reservoir	NESW Sec. 34, T21N, R77W	Non-WUS
71	No name	Pierce Reservoir	NWNW Sec. 3, T20N, R77W	Non-WUS
72	No name	Pierce Reservoir	NENE Sec. 10, T20N, R77W	Non-WUS
73	Bosler Ditch	Pierce Reservoir	SWNW Sec. 11, T20N, R77W	Ditch
74	Rock Creek	Pierce Reservoir	NESW Sec. 11, T20N, R77W	WUS (20); potential wetland[4]
75	Three Mile Creek	Pierce Reservoir	SESW Sec. 11, T20N, R77W	WUS (20); potential wetland[4]
76	Coalbank Creek	Pierce Reservoir	NWNE Sec. 14, T20N, R77W	WUS (4), potential wetland[3]
77	No name playa	Rock River	SESW Sec. 13 and NENW Sec. 24, T20N, R77W	Potential wetland[4]
78	Coalbank Creek	Rock River	NESE Sec. 24, T20N, R77W	Non-WUS, potential wetland[3]
79	Coalbank Creek	Rock River	SESE Sec. 24, T20N, R77W	Non-WUS, potential wetland[3]
80	Coalbank Creek	Rock River	NWSE Sec. 30, T20N, R76W	Non-WUS, potential wetland[3]
81	No name (tributary to Coalbank Creek)	Rock River	NWNW Sec. 32, T20N, R76W	Non-WUS
82	No name (tributary to Coalbank Creek)	Rock River	SENW Sec. 32, T20N, R76W	Non-WUS
83	No name	Rock River	SWNW Sec. 4, T19N, R76W	Non-WUS
84	No name	Rock River	SWSE Sec. 4, T19N, R76W	Non-WUS
85	Ditch	Rock River	SENE Sec. 9, T19N, R76W	Ditch
86	No name	Rock River	SWSW Sec. 10, T19N, R76W	Non-WUS
87	Dutton Creek	Rock River	NENW Sec. 15, T19N, R76W	WUS (25), potential wetland[3]
88	King Ditch No. 2	Big Judson	SENW Sec. 23, T19N, R76W	Ditch
89	No name	Big Judson	SESE Sec. 23, T19N, R76W	Non-WUS; potential wetland[3]
90	No name playa and Homer Ditch	Big Judson	NWNW and SENW Sec. 25, T19N, R76W	Potential wetland and ditch[3]
91	Cooper Creek	Cooper Lake South	SWNW Sec. 31, T19N, R75W	WUS (20), potential wetland[3]

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
92	Cooper Creek	Cooper Lake South	SWNW Sec. 31, T19N, R75W	Non-WUS
93	No name	Cooper Lake South	NWSW Sec. 5, T18N, R75W	WUS (6), potential wetland[3]
94	No name	Cooper Lake South	NENW Sec. 16, T18N, R75W	WUS (6)
95	No name playa	Cooper Lake South	E½ Sec. 16, T18N, R75W	Potential wetland[4]
96	No name playa, no name stream	Cooper Lake South	SWNW and SENW Sec. 22, T18N, R75W	Potential wetland[3], Non-WUS
97	James Lake North Canal	Cooper Lake South	NWSE Sec. 22, T18N, R75W	Canal
98	James Lake North Canal	Cooper Lake South	NENE Sec. 27, T18N, R75W	Canal
99	No name	Cooper Lake South	NWSW Sec. 26, T18N, R75W	Non-WUS
100	No name	Alsop Lake	SWSE Sec. 26, T18N, R75W	Non-WUS
101	Ditch	Alsop Lake	SWSE Sec. 26, T18N, R75W	Ditch
102	No name playa	Alsop Lake	NENE Sec. 35, T18N, R75W	Non-wetland
103	No name	Alsop Lake	NWSW Sec. 36, T18N, R75W	WUS (4)
104	Four Mile Creek	Alsop Lake	NENW Sec. 1, T17N, R75W	WUS (6), potential wetland[3]
105	No name	Alsop Lake	NESE Sec. 1, T17N, R75W	Non-WUS
106	No name	Alsop Lake	SESE Sec. 1, T17N, R75W	Non-WUS
107	No name (tributary to Little Laramie River)	Bamforth Lake	NWNW Sec. 7, T17N, R74W	Non-WUS
108	No name (tributary to Little Laramie River)	Bamforth Lake	NWSE Sec. 7, T17N, R74W	Non-WUS
109	Little Laramie River	Bamforth Lake	SESE Sec. 7, T17N, R74W	WUS (25), potential wetland[3]
110	Browns Creek	Bamforth Lake	NWNW Sec. 17, T17N, R74W	WUS, potential wetland[3]
111	No name (tributary to Browns Creek)	Bamforth Lake	SENW Sec. 17, T17N, R74W	WUS, potential wetland[3]
112	Ditch	Bamforth Lake	NESW Sec. 17, T17N, R74W	Ditch
113	Ditch	Bamforth Lake	SWSE Sec. 17, T17N, R74W	Ditch

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
114	Ditch	Bamforth Lake	NENE Sec. 20, T17N, R74W	Ditch
115	No name playas	Bamforth Lake	SESW Sec. 21 and E½ Sec. 28, T17N, R74W	Dry playas, potential wetlands[3]
116	Ditch	Bamforth Lake	SENE Sec. 28, T17N, R74W	Ditch
117	North Canal	Bamforth Lake	NENW Sec. 34, T17N, R74W	Canal
118	North Canal	Bamforth Lake	NESW Sec. 2, T16N, R74W	Canal
119	No name	Laramie SW	NWNW Sec. 13, T16N, R74W	Non-WUS
120	No name	Laramie SW	NWSE Sec. 13, T16N, R74W	Non-WUS
121	North Canal	Laramie SW	SESE Sec. 13, T16N, R74W	Non-WUS
122	Canal	Laramie	SENE Sec. 19, T16N, R73W	Ditch
123	No name	Laramie	SESE and NWSW Sec. 20, T16N, R73W	Potential wetland[4]
124	Laramie River	Laramie	SESE Sec. 20, T16N, R73W	WUS (30)
125	No name	Laramie	SENW Sec. 25, T16N, R73W	WUS (10)
126	No name (tributary to Jack Spring Rabbit Creek)	Pilot Hill	SENE Sec. 29, T16N, R72W	Non-WUS
127	No name	Pilot Hill	NESE Sec. 27, T16N, R72W	Non-WUS
128	Horse Creek	Pilot Hill	NWSW Sec. 25, T16N, R72W	ND[2], potential wetland[3]
129	No name	Pilot Hill	NESE Sec. 25, T16N, R72W	ND
130	No name	Pilot Hill	SWNW Sec. 30, T16N, R71W	ND
131	No name	Pilot Hill	SWNW Sec. 30, T16N, R71W	ND
132	No name	Pilot Hill	SWNW Sec. 29, T16N, R71W	ND
133	No name	Pilot Hill	SENW Sec. 29, T16N, R71W	ND
134	Meadow Fork Branch	Green Top Mountain	SENW Sec. 26, T16N, R71W	ND, potential wetland[3]
135	Dry Creek	Green Top Mountain	SWNW Sec. 25, T16N, R71W	ND

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
136	Dry Creek	Green Top Mountain	SWNE Sec. 25, T16N, R71W	ND, potential wetland[3]
137	No name (tributary to North Lodgepole Creek)	Islay	SENW Sec. 28, T16N, R70W	ND, potential wetland[3]
138	No name (tributary to North Lodgepole Creek)	Islay	SENE Sec. 28, T16N, R70W	ND, potential wetland[3]
139	No name (tributary to North Lodgepole Creek)	Islay	SENW Sec. 27, T16N, R70W	ND
140	No name (tributary to North Lodgepole Creek	Islay	NWSE Sec. 27, T16N, R70W	ND
141	North Lodgepole Creek	Islay	NESE Sec. 27, T16N, R70W	ND, potential wetland[3]
142	No name (tributary to North Lodgepole Creek)	Islay	NESW Sec. 26, T16N, R70W	ND
143	North Lodgepole Creek	Islay	NWSE Sec. 26, T16N, R70W	ND, potential wetland[3]
144	Middle Lodgepole Creek	Islay	SWSW Sec. 25, T16N, R70W	ND, potential wetland[3]
145	Ditch	Islay	NWNW Sec. 36, T16N, R70W	Ditch
146	No name	Islay	SENW Sec. 36, T16N, R70W	Non-WUS
147	No name	Islay	NWSE Sec. 36, T16N, R70W	Non-WUS
148	No name	Islay	SWSE Sec. 36, T16N, R70W	Non-WUS, potential wetland[3]
149	No name	Islay	NENE Sec. 1, T15N, R70W	Non-WUS
150	No name	Islay	NESE Sec. 1, T15N, R70W	Non-WUS
151	No name	Islay	NESE Sec. 1, T15N, R70W	Non-WUS
152	No name	Islay	SWSW Sec. 6, T15N, R69W	Non-WUS
153	South Lodgepole Creek	Islay	SENW Sec. 7, T15N, R69W	WUS (4), potential wetland[3]
154	No name (tributary to South Lodgepole Creek)	Islay	NESW Sec. 7, T15N, R69W	Non-WUS
155	No name	Islay	SENE Sec. 18, T15N, R69W	Non-WUS
156	No name	Islay	NESE Sec. 18, T15N, R69W	Non-WUS
157	No name	Islay	SESE Sec. 18, T15N, R69W	Non-WUS, potential wetland[3]
158	No name	Islay	NWSW Sec. 20, T15N, R69W	Non-WUS

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
159	No Name	Hecla	NWNE Sec. 29, T15N, R69W	Non-WUS
160	No name	Hecla	SWNE Sec. 29, T15N, R69W	Non-WUS
161	No name	Hecla	NWSE Sec. 29, T15N, R69W	Non-WUS
162	No name	Hecla	SESE Sec. 29, T15N, R69W	WUS (3), potential wetland[3]
163	No name	Hecla	NENE Sec. 32, T15N, R69W	WUS (6)
164	No name	Hecla	NWNW Sec. 33, T15N, R69W	Non-WUS
165	No name	Silver Crown	NWNE Sec. 4, T14N, R69W	Non-WUS
166	North Fork Crow Creek	Silver Crown	NESE Sec. 4, T14N, R69W	Non-WUS, potential wetland[3]
167	No name	Silver Crown	SWSW Sec. 3, T14N, R69W	Non-WUS, potential wetland[3]
168	No name	Silver Crown	SESE Sec. 14, T14N, R69W	Non-WUS, potential wetland[3]
169	Crow Creek	Silver Crown	SESE Sec. 14, T14N, R69W	WUS (4), potential wetland[3]
170	Crow Creek	Silver Crown	NWNW Sec. 24, T14N, R69W	WUS (4), potential wetland[3]
171	Gilchrist Ditch No. 4	Silver Crown	NESW Sec. 24, T14N, R69W	Ditch
172	No name (tributary to Crow Creek)	Silver Crown	SESE Sec. 24, T14N, R69W	Non-WUS
173	No name (tributary to Crow Creek)	Silver Crown	NWNW Sec. 30, T14N, R68W	Non-WUS
174	No name (tributary to Crow Creek)	Silver Crown	NWNW Sec. 30, T14N, R68W	Non-WUS
175	Ditch	Silver Crown	NESW Sec. 30, T14N, R68W	Ditch
176	No name	Silver Crown	SESE Sec. 30, T14N, R68W	Non-WUS
177	No name	Silver Crown	SWSW Sec. 29, T14N, R68W	Non-WUS
178	No name	Silver Crown	NENE Sec. 32, T14N, R68W	Non-WUS
179	No name	Silver Crown	NENE Sec. 32, T14N, R68W	Non-WUS
180	No name	Silver Crown	NWNE Sec. 33, T14N, R68W	Non-WUS
181	No name	Silver Crown	SENE Sec. 33, T14N, R68W	Non-WUS

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
182	No name (tributary to Spring Creek)	Round Top Lake	SWNW Sec. 34, T14N, R68W	Non-WUS
183	No name (tributary to Spring Creek)	Round Top Lake	SWNE Sec. 34, T14N, R68W	Non-WUS
184	No name (tributary to Spring Creek)	Round Top Lake	NESE Sec. 34, T14N, R68W	Non-WUS
185	No name	Round Top Lake	NESE Sec. 35, T14N, R68W	Non-WUS
186	No name	Round Top Lake	SWSW Sec. 31, T14N, R67W	Non-WUS
187	No name	Round Top Lake	NENE Sec. 6, T13N, R67W	Potential wetland[4]
188	No name	Round Top Lake	NWNE Sec. 5, T13N, R67W	Potential wetland[4]
189	No name	Round Top Lake	SWNE, Sec. 4, T13N, R67W	Non-WUS
190	No name	Cheyenne South	SESW Sec. 2, T13N, R67W	Potential wetland[4]
191	Ditch (or channeled)	Cheyenne South	SWSE Sec. 2, T13N, R67W	Ditch
192	Clear Creek	Cheyenne South	SENE Sec. 11, T13N, R67W	Non-WUS, potential wetland[3]
193	No name	Cheyenne South	SWNW Sec. 12, T13N, R67W	Potential wetland
194	No name (tributary to closed basin)	Cheyenne South	SENE Sec. 18, T13N, R66W	Non-WUS[1]
195	No name (tributary to Porter Draw)	Cheyenne South	SWNW Sec. 29, T13N, R66W	Non-WUS
196	No name (tributary to Porter Draw)	Cheyenne South	NWNW Sec. 32, T13N, R66W	WUS (2)
197	No name (tributary to Porter Draw)	Cheyenne South	SWSW Sec. 32, T13N, R66W	Wetland
198	No name (tributary to Porter Draw)	Cheyenne South	SWSW Sec. 5, T12N, R66W	Non-WUS
199	No name (tributary to Porter Draw)	Cheyenne South	NWNW Sec. 17, T12N, R66W	Non-WUS
200	No name (tributary to Porter Draw)	Cheyenne South	SWNW Sec. 17, T12N, R66W	Non-WUS
201	No name (tributary to Porter Draw)	Cheyenne South	SWSW Sec. 17, T12N, R66W	Non-WUS
202	No name (tributary to Porter Draw)	Cheyenne South	SWSW Sec. 17, T12N, R66W	WUS (2)
203	No name (tributary to Owl Creek)	Carr East	SWSW Sec. 20, T12N, R66W	WUS (20)
204	No name (tributary to Owl Creek)	Carr East	SWSW Sec. 29, T12N, R66W	WUS (2)

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
205	No name (tributary to Owl Creek)	Carr East	NWNW Sec. 32, T12N, R66W	Non-WUS
206	No name (tributary to Owl Creek)	Carr East	SWSW Sec. 32, T12N, R66W	WUS (5)
207	No name (tributary to Owl Creek)	Carr East	NWNW Sec. 5, T11N, R55W	Non-WUS
208	No name (tributary to Owl Creek)	Carr East	SWSW Sec. 5, T11N, R66W	Non-WUS
209	No name (tributary to Owl Creek)	Carr East	NWNW Sec. 8, T11N, R66W	WUS (10)
210	No name (tributary to Owl Creek)	Carr East	SWSW Sec. 8, T11N, R66W	WUS (16)
211	No name (tributary to Little Owl Creek)	Carr East	NWNW Sec. 32, T11N, R66W	Wetland
212	No name (tributary to Little Owl Creek)	Carr East	SWSW Sec. 32, T11N, R66W	Non-WUS
213	No name (tributary to Lone Tree Creek)	Carr East	NWSW Sec. 29, T10N, R66W	Non-WUS
214	No name (tributary to Lone Tree Creek)	Carr East	NWNW Sec. 32, T10N, R66W	Wetland, WUS (10)
215	No name (tributary to Lone Tree Creek)	Carr East	NWNW Sec. 32, T10N, R66W	Wetland, WUS (25)
216	No name (tributary to Spring Creek)	Dover	NWSW Sec. 17, T9N, R66W	Non-WUS
217	No name (tributary to Spring Creek)	Dover	SWSW Sec. 17, T9N, R66W	Non-WUS
218	No name (tributary to Spring Creek)	Dover	NWNW Sec. 20, T9N, R66W	Non-WUS
219	Spring Creek	Dover	NWSW Sec. 32, T9N, R66W	Non-WUS
220	No name (tributary to Spring Creek)	Dover	SWNW Sec. 5, T8N, R66W	Dredged WUS –ditch (5)
221	No name (tributary to Spring Creek)	Dover	SWNW Sec. 5, T8N, R66W	Dredged WUS -ditch (5)
222	No name (tributary to Spring Creek)	Dover	NWSW Sec. 8, T8N, R66W	Non-WUS
223	No name (tributary to Spring Creek)	Dover	NWNW Sec. 17, T8N, R66W	Dredged WUS -ditch (15)
224	No name (tributary to Spring Creek)	Nunn	SWNW Sec. 17, T8N, R66W	Non-WUS
225	No name (tributary to Spring Creek)	Nunn	SWNW Sec. 17, T8N, R66W	Non-WUS
226	No name (tributary to Pierce Lateral Ditch System)	Nunn	NWNW Sec. 20, T8N, R66W	Non-WUS
227	No name (tributary to Pierce Lateral Ditch System)	Nunn	NWNW Sec. 20, T8N, R66W	Non-WUS

Appendix B Table 3.4 Stream and Wetland Crossings

Feature No.	Name	U.S. Geological Survey 7.5' Quadrangle	Location	Water of the U.S. (width in ft) or Wetland[1]
228	No name (tributary to Pierce Lateral Ditch System)	Nunn	NWNW Sec. 29, T8N, R66W	Non-WUS
229	No name (tributary to Pierce Lateral Ditch System)	Nunn	NWNW Sec. 29, T8N, R66W	Non-WUS
230	No name (tributary to Pierce Lateral Ditch System)	Nunn	SWSW Sec. 29, T8N, R66W	Non-WUS
231	No name (tributary to Pierce Lateral Ditch System)	Nunn	SWSW Sec. 29, T8N, R66W	Non-WUS
232	No name (tributary to Pierce Lateral Ditch System)	Severance	NWNW Sec. 5, T7N, R66W	Non-WUS

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Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Mammals					
Abert's squirrel	*Sciurus aberti*	Ponderosa pine connected to the main population in northern Colorado	WY	--	None
Black-tailed prairie dog	*Cynomys ludovicianus*	Shortgrass prairie, usually with loose, sandy soils; can form large, dense colonies	CO, WY	NSS3 SC	Potential
Botta's pocket gopher	*Thomomy bottae rubidus*	Southwestern Colorado	CO	SC	None
Dwarf shrew	*Sorex nanus*	Historically, found in alpine rubble slopes and conifer forests above 4,000 m; sometimes found in prairie and pinyon-juniper at lower elevations	WY	--	Unlikely
Eastern cottontail	*Sylvilagus floridanus*	Nation-wide they are habitat generalists, but in Wyoming are restricted to riparian or brushy habitats	WY	--	Potential
Eastern mole	*Scalopus aquaticus*	Found in southeast Wyoming in areas of soft, deep soil and where moisture keeps soil relatively loose; collections in Lingle and Horse Creeks	WY	--	Potential
Fringed myotis	*Myotis thysanodes*	Found in mid-elevation grasslands, deserts and woodlands; sometimes found in higher forests; roosts: caves, mines, rock crevices, buildings	WY	NSS2	Potential
Hoary bat	*Lasiurus cinereus*	Widespread and mobile, hoary bats are found in shrublands, grasslands, and aspen-pine forests near roosting habitat; roosts: deciduous trees	WY	--	Potential
Kit fox	*Vulpes macrotis*	Western Colorado	CO	SE	None
Long-eared myotis	*Myotis evotis*	Found in conifer forests, especially ponderosa pine; forage over water holes and possible openings in conifer forest; roosts: caves, buildings, mines	WY	--	Potential
Northern pocket gopher	*Thomomys talpoides macrotis*	Meadows and along streams	CO	SC	Potential
Pallid bat	*Antrozous pallidus*	Generally found in desert and grassland habitats	WY	NSS2	Potential
Plains (eastern) spotted skunk	*Spilogale putorius interruptua*	Usually occur near riparian areas, but also found near human settlements (fence rows, barns, brush piles, etc.)	WY	--	Potential
River otter	*Lontra canadensis*	Upper Colorado River, Dolores River, and upper Platte River	CO	ST	None
Spotted bat	*Euderma maculatum*	Cliff roosting, generally near perennial water in a variety of habitats (including desert, shrub-steppe, and evergreen forest)	WY	NSS2	Potential
Swift fox	*Vulpes velox*	Shortgrass prairie, but can be found in sage-grasslands; they are particularly found in sparely vegetated areas such as prairie dog towns	WY, CO	NSS3 SC	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Townsend's big-eared bat	*Corynorhinus townsendii [Plecotus townsendii]*	Hibernates and day-roosts in caves and mines and will use buildings as day roosts; typical habitat includes desert shrublands, pinyon-juniper woodlands, and dry conifer forests, generally near riparian or wetland areas	WY, CO	NSS2 SC	Potential
White-footed mouse	*Peromyscus leucopus*	Found along forest riparian corridors that extend into Wyoming from the east, although they are sometimes caught in grasslands adjacent to these forests (where deer mice are more common)	WY	--	None
White-tailed prairie dog (Large towns only)	*Cynomys leucurus*	Found in grassland and shrub-grass communities, often with loose, sandy soils; colonies are usually not as large or dense as black-tailed prairie dog colonies	WY	--	Known to occur
Wolverine	*Gulo gulo*	High elevations with heavy timbers	CO	SE	Unlikely
Wyoming pocket gopher	*Thomomys clusius*	Meadow with loose soil	WY	--	Likely
Birds					
American avocet	*Recurvirostra americana*	Marshes, ponds, and shores, especially alkaline areas	WY	--	Potential
American bittern	*Botaurus lentiginosus*	Marshes and vegetated shorelines, especially cattails and bulrushes	WY	NSS3	Potential
American dipper	*Cinclus mexicanus*	Fast flowing rocky streams mostly in mountains, moves to lower elev. streams and rivers in winter	WY	--	Potential
American peregrine falcon	*Falco peregrinus anatum*	Mountainous zones or cliffs near large lakes and rivers	WY, CO	NSS3 SC	Likely
American three-toed woodpecker	*Picoides dorsalis [Picoides tridactylus]*	Old-growth conifer forest, especially spruce-fir and ponderosa pine or recently burned forest	WY	--	Potential
American white pelican (Breeding colonies only)	*Pelecanus erythrorhynchos*	Ponds, lakes, rivers, and reservoirs	WY	NSS3	Likely
Baird's sparrow	*Ammodramus bairdii*	Mid-grass prairie and meadows	WY, CO	NSS4	Potential
Bald eagle	*Haliaeetus leucocephalus*	Wooded areas usually along rivers, lakes, reservoirs; sometimes in open country	WY	--	Likely
Barn owl	*Tyto alba*	Open country around abandoned buildings, barns, holes in cut banks, and cliffs	WY	--	Unlikely
Black tern (Breeding colonies only)	*Chlidonias niger*	Ponds, lakes, reservoirs, and marshes	WY	NSS3	Potential
Black-billed cuckoo	*Coccyzus erythropthalmus*	Deciduous woods and thickets, usually along large streams	WY	--	Potential
Black-crowned night-heron	*Nycticorax nycticorax*	Marshes and wooded streams	WY	--	Potential
Black-necked stilt	*Himantopus mexicanus*	Marshes, ponds, and shores	WY	--	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Black-rosy finch [Rosy finch]	*Leucosticte atrata [Leucosticte arctoa]*	Above timberline, usually near cliffs, rocky areas and snowfields; can be found in open country and towns in the winter	WY	--	Unlikely
Black-throated gray warbler	*Dendroica nigrescens*	Juniper woodlands	WY	--	None
Blue grosbeak	*Guiraca caerulea*	Thickets, stream sides, and woodland edges	WY	--	Potential
Bobolink	*Dolichonyx oryzivorus*	Tall grass, usually with overlooking perch	WY	NSS4	Unlikely
Brewer's sparrow	*Spizella breweri*	Sagebrush foothills and medium-height sagebrush in basins; also, mountain mahogany hills	WY, CO	--	Likely
Bufflehead	*Bucephala albeola*	Lakes, ponds, rivers, and reservoirs	WY	--	Potential
Burrowing owl	*Athene cunicularia [Speotyto cunicularia]*	Plains and basins, often associated with prairie dog towns	WY, CO	NSS4 ST	Likely
Bushtit	*Psaltriparus minimus*	Juniper woodlands	WY	NSS3	None
California gull (Breeding colonies only)	*Larus californicus*	Lakes, reservoirs, wet meadows, fields, and garbage dumps	WY	--	Potential
Canyon wren	*Catherpes mexicanus*	Rocky canyons and cliffs	WY	--	Unlikely
Caspian tern	*Sterna caspia*	Lakes, reservoirs, and rivers	WY	NSS3	Potential
Chestnut-collared longspur	*Calcarius ornatus*	Medium height grass, especially meadows around ponds	WY	NSS4	Unlikely
Chimney swift	*Chaetura pelagica*	Cities and towns, usually over buildings	WY	--	Potential
Clark's grebe	*Aechmophorus clarkii [Achemophorus occidentalis]*	Ponds, lakes, and reservoirs	WY	NSS4	Potential
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	Grasslands	WY, CO	SC	Potential
Common goldeneye	*Bucephala clangula*	Lakes, rivers, and reservoirs	WY	--	Potential
Common loon	*Gavia immer*	Nests on medium to large lakes not disturbed by humans; during migration found on ponds, lakes, and reservoirs	WY	NSS1	Potential
Eastern bluebird	*Sialia sialis*	Open woodlands	WY	--	Unlikely
Eastern screech-owl	*Otus asio*	Wooded river and stream bottoms, usually with cottonwoods	WY	NSS3	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Ferruginous hawk	*Buteo regalis*	Open grasslands and shrublands	WY, CO	SC	Known to occur
Forster's tern	*Sterna forsteri*	Lakes, reservoirs, and marshes	WY	NSS3	Potential
Golden eagle	*Aquila chrysaetos*	Open grasslands and shrublands especially around cliffs and canyons	WY	--	Known to occur
Golden-crowned kinglet	*Regulus satrapa*	Mature spruce forest, usually along streams; descend to lower elevations in winter	WY	--	Unlikely
Grasshopper sparrow	*Ammodramus savannarum*	"Mid-grass" prairie, tall-grass prairie, hay meadows, and open savanna	WY	--	Unlikely
Greater prairie-chicken	*Tympanuchus cupido*	Taller grasslands	WY	--	Unlikely
Greater sage-grouse	*Centrocercus urophasianus*	Sagebrush basins and foothills, generally close to water	WY, CO	SC	Known to occur
Greater sandhill crane	*Grus canadensis tabida*	Mud flats around reservoirs, moist meadows, and agricultural areas, parks with grassy hummocks and watercourses, beaver ponds, and natural ponds lined with willow or aspen, wetlands, and shallow marshes	CO	SC	Potential
Gunnison sage-grouse	*Centrocercus minimus*	Southwestern Colorado	CO	SC	None
Hammond's flycatcher	*Empidonax hammondii*	Tall, moist montane conifer forest, especially along streams	WY	--	Unlikely
Herring gull (Breeding colonies only)	*Larus argentatus*	Lakes, reservoirs, wet meadows, and fields	WY	--	Potential
Lesser prairie-chicken	*Tympanuchus pallidicinctus*	Grasslands with an abundance of midgrasses and sand sage	CO	ST	Potential
Lewis' woodpecker	*Melanerpes lewis*	Open, mature ponderosa pine forest and recently burned forest	WY	NSS3	Potential
Loggerhead shrike	*Lanius ludovicians*	Open country with scattered trees and shrubs	WY, CO	--	Known to occur
Long-billed curlew	*Numenius americanus*	Meadows, pastures, shorelines, and marshes	WY, CO	NSS3 SC	Potential
McCown's longspur	*Calcarius mccownii*	Sparsely vegetated shortgrass prairie	WY	NSS4	Potential
Merlin	*Falco columbarius*	Open woodlands, grasslands, and shrublands sometimes in cities in winter	WY	--	Potential
Mountain plover	*Charadrius montanus*	Sparse shortgrass or mixed grass prairie; also in short-sagebrush plains; often associated with prairie dog towns	WY, CO	NSS4 SC	Potential
Northern bobwhite (Native populations only)	*Colinus virginianus*	Brushy areas and open woodlands	WY	--	Potential
Northern goshawk	*Accipiter gentilis*	Open montane conifer forest or aspen	WY, CO	NSS4	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Osprey	*Pandion haliaetus*	Wooded areas along lakes and rivers	WY	--	Unlikely
Plains sharp-tailed grouse	*Tympanuchus phasianellus jamesii*	Douglas County	CO	SE	None
Pygmy nuthatch	*Sitta pygmaea*	Mature ponderosa pine forest	WY	NSS4	Unlikely
Ring-billed gull (Breeding colonies only)	*Larus delawarensis*	Lakes, reservoirs, fields, garbage dumps, and wet meadows	WY	--	Potential
Ring-necked duck	*Aythya collaris*	Rivers, lakes, and reservoirs	WY	--	Potential
Rose-breasted grosbeak	*Pheucticus ludovicianus*	Riparian woodlands and cities and towns	WY	--	Potential
Sage sparrow	*Amphispiza belli*	Medium to tall sagebrush shrubland	WY, CO	--	Likely
Sage thrasher	*Oreoscoptes montanus*	Tall sagebrush and greasewood	WY, CO	--	Likely
Short-eared owl	*Asio flammeus*	Open grasslands, meadows, marshes, and farmland, especially around tall grass or weeds	WY	--	Potential
Snowy egret	*Egretta thula*	Ponds, lakes, and reservoirs	WY	--	Potential
Snowy plover	*Charadrius alexandrinus*	Sandy beaches and shores of alkaline ponds	WY	--	Potential
Trumpeter swan	*Cygnus buccinator*	Ponds, lakes, and streams	WY	NSS2	Potential
Tundra swan	*Cygnus columbianus*	Ponds, lakes, and reservoirs	WY	--	Potential
Virginia rail	*Rallus limicola*	Densely vegetated marshes, especially cattails and bulrushes	WY	--	Potential
Virginia's warbler	*Vermivora virginiae*	Riparian woodlands and brushy slopes	WY	--	Potential
Western scrub-jay	*Aphelocoma californica [Aphelocoma coerulescens]*	Juniper woodlands	WY	NSS3	None
Western snowy plover	*Charadrius alexandrinus*	Sandy beaches, alkaline lakes	CO	SC	Potential
White-faced ibis	*Plegadis chihi*	Marshes, wet meadows, and vegetated shorelines	WY	NSS3	Potential
White-winged crossbill	*Loxia leucoptera*	Conifer forest with an abundance of cones, especially mature spruce on high ridges	WY	--	Potential
White-winged junco	*Junco hyemalis aikeni*	Open woodlands and woodland edges; cities and towns in winter	WY	--	Potential
Williamson's sapsucker	*Sphyrapicus thyroideus*	Old-growth conifer forest, especially a mixture of spruce and lodgepole pine	WY	--	Potential
Winter wren	*Troglodytes troglodytes*	Brushy stream-sides in conifer forest	WY	--	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Yellow-billed cuckoo	*Coccyzus americanus*	Deciduous woods and thickets, usually along large streams	WY, CO	NSS2 SC	Potential
Amphibians					
Boreal toad	*Bufo boreas boreas*	Montane habitats, spruce fir forest, alpine, pond margins, wet meadows, and riparian areas	WY, CO	NSS2 SE	None
Couch's spadefoot	*Scaphiopus couchii*	Shortgrass plains, mesquite savanna, creosote bush desert, other areas of low rainfall	CO	SC	None
Great Basin spadefoot	*Spea intermontana*	Spring seeps, permanent and temporary waters	WY	NSS4	Potential
Great plains narrowmouth toad	*Gastrophryne olivacea*	Damp burrows, crevices, under rocks, bark, and boards in the vicinity of streams, springs, and rain pools	CO	SC	Unlikely
Northern cricket frog	*Acris crepitans*	Shortgrass plains of eastern Colorado along rivers	CO	SC	None
Northern leopard frog	*Rana pipiens*	Found near permanent water in areas up to about 9,000 feet; lower elevation sites are usually swampy cattail marshes and higher ones tend to be beaver ponds	WY, CO	SC	Potential
Plains leopard frog	*Rana blairi*	Arid regions of plains and prairies near shallow streams and ponds	CO	SC	Potential
Wood frog (Southern Rocky Mountain population)	*Rana sylvatica* (undescribed taxon)	Wood frogs are found in ponds, lakes, and slow-moving streams at higher elevations (e.g., usually over 8,500 feet above sea level), often in the vicinity of conifer forests	WY, CO	SC	None
Reptiles					
Common garter snake	*Thamnophis sirtalis*	Ponds, marshes, prairie swales, roadside ditches, streams, sloughs, damp meadows, woods, farms, and city lots	CO	SC	Likely
Common kingsnake	*Lampropeltis getula*	Deserts, riparian areas, woodlands, forests, and farmland from sea level to 7,000 ft	CO	SC	None
Lesser earless lizard	*Holbrookia maculata*	The northern earless lizard is usually found in grassland communities, preferring exposed, sandy areas with yucca	WY	--	Unlikely
Longnose leopard lizard	*Gambelia wislizenii*	Arid and semiarid plains with bunchgrass, alkalibush, creosote bush, or other scattered low plants	CO	SC	Unlikely
Massasauga	*Sistrurus catenatus*	River bottoms, wet prairies, swamps, bogs, woodlands	CO	SC	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Midget faded rattlesnake	*Crotalus viridis concolor*	Rocky arid areas up to 8,000 ft in elevation	CO	SC	None
Milk snake	*Lampropeltis triangulum*	Milk snakes can be found in woodlands along escarpments in prairie communities below about 6,000 feet	WY	--	Potential
Northern many-lined skink	*Eumeces multivirgatus multivirgatus*	The many-lined skink occurs in grassland communities or open scarp woodlands; lives on the ground and often hides under loose objects (e.g., boards, logs, rocks, etc.)	WY	--	Potential
Northern prairie lizard	*Sceloporus undulatus garmani*	The northern prairie lizard is mostly found in grasslands, but also in low shrublands and in woodlands along rock escarpments (not among large rocks and cliffs, as the red-lipped prairie lizard)	WY	--	Potential
Red-lipped prairie lizard	*Sceloporus undulatus erythrocheilus*	The red-lipped prairie lizard is restricted to rock and cliff habitats along the Front Range	CO	--	None
Roundtail horned lizard	*Phrynosoma modestum*	Sandy or gravelly soils of plains, desert flats and washes in arid or semiarid habitats with cedar, ocotillo, oak, mesquite, creosote bush, or sumac	CO	SC	None
Texas blind snake	*Leptotyphlops dulcis*	Rocky hillsides with patches of loose soil and canyon bottoms or washes near permanent or intermittent streams	CO	SC	Potential
Texas horned lizard	*Phrynosoma cornutum*	Arid and semiarid open country with sparse plant growth of bunchgrasses, cactus, juniper, acacia, and mesquite	CO	SC	None
Triploid checkered whiptail	*Cnemidophorus neotesselatus*	Hillsides, arroyos, canyons, shrubby areas, roadsides, and transition areas near the Arkansas, Huerfano, Apishapa, and Purgatoire Rivers and tributaries	CO	SC	None
Yellow mud turtle	*Kinosternon flavescens*	Highly aquatic turtle of semiarid grasslands and open woodlands, frequenting both permanent and intermittent streams	CO	SC	Unlikely
Fish					
Arkansas darter	*Etheostoma cragini*	Streams and river habitats of eastern plains and South Platte basin	CO	ST	Potential
Brassy minnow	*Hybognathus hankinsoni*	Streams and river habitats of eastern plains and South Platte basin	CO	ST	Potential
Colorado river cutthroat trout	*Oncorhynchus clarki pleuriticus*	Colorado River basin	CO	SC	None
Colorado roundtail chub	*Gila robusta*	Colorado River basin	CO	SC	None
Common shiner	*Luxilus cornutus*	Front Range and transition zone between montane and plains habitats, South Platte basin	CO	ST	None
Flathead chub	*Platygobio gracilus*	Large and small plains streams with turbidity	CO	SC	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	Greenback cutthroat trout are now thought to be extirpated from Wyoming; historic range was mostly in Colorado, extending into Wyoming tributaries of the South Platte River, including Dale Creek and Lonetree Creek	WY,CO	ST	Potential
Hornyhead chub	*Nocomis biguttatus*	Found in clear, gravel-bottomed streams; it has been collected in the Sweetwater River and in the North Platte River drainage including the tributaries of the Laramie River, but is now very rare in Wyoming	CO	--	Unlikely
Iowa darter	*Etheostoma exile*	Clear sluggish or standing water with vegetation	CO	SC	Potential
Lake chub	*Couesius plumbeus*	Front range and transition zone between montane and eastern plains habitat, South Platte basin	CO	SE	None
Mountain sucker	*Catostomus playtrhynchus*	Smaller rivers and streams with gravel, sand, and mud bottoms	CO	SC	None
Northern redbelly dace	*Phoxinus eos*	Front Range and transition zone between montane and eastern plains habitat, South Platte basin, West Plum Creek, Saint Vrain Creek	CO	SE	None
Orangethroat darter	*Etheostoma spectabile*	In Wyoming, orangethroat darters have been found in Lodgepole Creek (Laramie County); they prefer small streams with sand or gravel bottoms, including intermittent streams, but may also be found in small lakes	WY	NSS2	Known to occur
Plains minnow	*Hybognathus placitus*	Stream and river habitats in the eastern plains of Colorado, South Platte basin	CO	SE	Potential
Plains orangethroat darter	*Etheostoma spectabile*	In Wyoming, orangethroat darters have been found in Lodgepole Creek (Laramie County); they prefer small streams with sand or gravel bottoms, including intermittent streams, but may also be found in small lakes	WY, CO	SC	Potential
Rio grande chub	*Gila pandora*	Pools of small to moderate streams near areas of current and in association with undercut banks, overhanging bank vegetation, and aquatic plants	CO	SC	None
Rio grande cutthroat trout	*Oncorhynchus clarki virginalis*	Clear cold water, naturally fluctuating flows, low levels of fine sediment in channel bottoms, well-distributed pools, stable streambanks, and abundant stream cover	CO	SC	None
Rio grande sucker	*Catostomus plebeius*	Rio Grande basin	CO	SE	None
Southern redbelly dace	*Phoxinus erythrogaster*	Front Range and transition zone between montane and eastern plains habitats, South Platte basin	CO	SE	None
Stonecat	*Noturus flavus*	Areas of good current in streams and rivers and may be found in rocky gravel-covered bays	CO	SC	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Sturgeon chub	*Macrhybopsis gelida [Hybopsis gelida]*	The sturgeon chub is found in large, turbid rivers, usually where fast currents form riffles over sand, gravel, or rubble; in Wyoming it currently occurs in the Powder River north of Salt Creek and it occurred historically in the Bighorn, North Platte, and Missouri Rivers	WY	NSS1	None
Suckermouth minnow	*Phenacobius mirabilis*	Found in clear water riffles with sand or gravel substrate, but sometimes in lakes; occurs in Wyoming in the tributaries of the North Platte River; South Platte basin	WY, CO	SE	Potential
Mollusks					
Cylindrical papershell	*Anodontoides ferussacianus*	Mud and sands of small creeks and headwaters of large streams, upper Mississippi River	CO	SC	None
Rocky mountain capshell	*Acroloxus coloradensis*	Aquatic or riparian habitat in mountains	CO	SC	None
Plants					
Alpine fever-few	*Parthenium alpinum*	*Parthenium alpinum* is endemic to northeastern Colorado and southeastern Wyoming; in Wyoming it is known only from the North Platte River valley and southeast plains of Carbon, Goshen, Natrona, Niobrara, and Platte Counties; it is found in cushion plant communities on open, stony slopes and ridges, often on calcareous substrates	WY	--	Potential
Bedstraw milkweed	*Asclepias subverticillata*	*Asclepias subverticillata* is known from Utah to Oklahoma and south to Mexico; there is one historical record in Wyoming, from the Hanna Basin in Carbon County; it is found on roadsides and in other disturbed sites; it is vulnerable to road development and maintenance activities	WY	--	Potential
Bigelow's tansy-aster	*Machaeranthera bigelovii* var. *Bigelovii*	*Machaeranthera bigelovii* var. *bigelovii* is a regional endemic of southeastern Wyoming, central Colorado, and north-central New Mexico; in Wyoming it is known from only three populations in the Laramie Range in Albany County; it occurs in open shortgrass prairie on dry granite gravels	WY	--	Potential
Blunt-leaf spike-moss	*Selaginella mutica*	*Selaginella mutica* occurs from southern Wyoming to eastern Utah south to Arizona and southwest Texas; in Wyoming it occurs in the Laramie and Medicine Bow ranges and Green River Basin in Carbon, Laramie, and Sweetwater counties; it grows in cracks on cliffs and on ledges and boulder outcrops of granite or sandstone with thin patches of soil amid lichens and other cryptogams	WY	--	Potential
Cedar Rim thistle	*Cirsium aridum*	Barren, chalky hills, gravelly slopes, and fine textured, sandy-shaley draws at 6,700-7,200 ft	WY	--	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Colorado tansy-aster	*Machaeranthera coloradoensis* var. *Coloradoensis*	*Machaeranthera coloradoensis* var. *coloradoensis* is a regional endemic of southeastern Wyoming and central Colorado; in Wyoming it is found in the foothills of the Laramie and Medicine Bow ranges and Sierra Madre in Albany and Carbon counties; it occurs in barren cushion plant and sparsely vegetated communities on limey-sandstone, shaley-gypsum, or redbed slopes and outcrops	WY	--	Potential
Colorado watercress	*Rorippa coloradoensis*	Actual habitat unknown but thought to occur in lower montane woodland shrub community, along margins of rivers and lakes	CO	--	Unlikely
Crawe sedge	*Carex crawei*	*Carex crawei* is a widespread species but is known from only one historical population in Goshen County and one extant population in Laramie County in Wyoming; it is found in moist meadows and boggy areas	WY	--	Unlikely
Cusick's alkali-grass	*Puccinellia cusickii*	*Puccinellia cusickii* is known from Washington and Oregon, east to Montana, North Dakota and Wyoming; in Wyoming it is known from the Wind River and Laramie basins and the foothills of the Bighorns and Black Hills in Albany, Crook, Johnson, and Natrona counties; it is found in moist riparian areas and alkaline seeps and draws	WY	--	Potential
Daggett rock cress	*Arabis pendulina* var. *Russeola*	*Arabis pendulina* var. *russeola* is endemic to Wyoming, Colorado, and Utah; in Wyoming it is known from the southern and central parts of the state; it usually occurs in open sagebrush grasslands and juniper woodlands	WY	--	Potential
Dissected bahia	*Bahia dissecta*	*Bahia dissecta* occurs from southeastern Wyoming and northern Utah to Baja California, Sonora, and southwest Texas; in Wyoming it is restricted to the Laramie and Medicine Bow ranges and Sierra Madre in Albany and Carbon counties; it grows on gravelly, granite slopes in sagebrush and juniper grasslands, open Ponderosa pine woods, and along rocky streambanks	WY	--	Potential
Dog parsley	*Aletes nuttallii*	Eroded barren dry hills, dark shale	CO	--	None
Dwarf bilberry	*Vaccinium myrtillus* var. *Oreophilum*	*Vaccinium myrtillus* var. *oreophilum* is a widespread species but is only peripheral in Wyoming, in Wyoming it is known from only three extant occurrences in the Laramie Range and Sierra Madre in Albany and Carbon counties; it is found in lodgepole pine and aspen woods, often with *Vaccinium scoparium* (grouseberry)	WY	--	Unlikely
Dwarf milkweed	*Asclepias uncialis*	Shortgrass prairie, often on sandstone-derived soils and gravelly or rocky slopes; 4,000-6,000 ft	CO	--	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Fendler cloak-fern	*Argyrochosma fendleri*	*Argyrochosma fendleri* is known from southeastern Wyoming to Arizona, western New Mexico, and Sonora, Mexico; in Wyoming it is known from only one population in the Laramie Range in Laramie County; it grows in dry crevices of granite cliffs and rocks	WY	--	Unlikely
Flat-top fragrant goldenrod	*Euthamia graminifolia* var. *Major*	*Euthamia graminifolia* var. *major* is a widespread taxon; in Wyoming it is known from only two historic and three extant populations in the Laramie Range and Southeast Plains in Platte and Albany counties; it is found mostly on stony sandbars and streambanks	WY	--	Unlikely
Gibbens' beardtongue	*Penstemon gibbensii*	Sparsely vegetated shale or sandy-clay slopes at 5,500-7,700 ft	WY	--	Potential
Great basin downingia	*Downingia laeta*	*Downingia laeta* is known from southern Alberta and Saskatchewan to eastern Oregon, northern California, and central Nevada to southern Wyoming; in Wyoming it is known from the Laramie Basin, Sweetwater River Plateau, and Overthrust Belt in Albany, Carbon, and Uinta counties; it is found in moist clay or sandy openings along ditch banks and reservoirs	WY	--	Potential
Halls sedge	*Carex parryana* var. *Unica*	*Carex parryana* var. *unica* occurs from southwestern Manitoba to Nebraska and Colorado; in Wyoming it is known from the Southeastern Plains, Hartville Uplift, Laramie Basin, and Laramie Range in Albany, Carbon, Laramie, and Platte counties; it is found in cold springs and montane wet meadows	WY	--	Potential
Howard's evening-primrose	*Oenothera howardii*	*Oenothera howardii* is known from Nevada, Utah, Wyoming, Colorado, and Kansas, in Wyoming it is known from only one population, in the southeast plains in Laramie County; it is usually found in shrub and open forest communities and on chalky banks	WY	--	Unlikely
Illinois pondweed	*Potamogeton illinoensis*	*Potamogeton illinoensis* is widespread throughout North America; in Wyoming, however, it is known from only four populations, all of which are historical, and it may have been extirpated; it is an aquatic species and is found in ponds, riverbanks, and marshes	WY	--	Unlikely
James nailwort	*Paronychia jamesii*	*Paronychia jamesii* is a species of the southern and central Great Plains and Arizona; it is at the northern limit of its distribution in Wyoming and is known from only two populations in Albany and Goshen counties; it occurs in rocky or sandy hills in grassland, often where the soil is and is often found along roadsides; it is vulnerable to road development and maintenance activities	WY	--	Unlikely

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Jeweled blazingstar	*Mentzelia speciosa*	*Mentzelia speciosa* is a regional endemic of Colorado and Wyoming; in Wyoming it is known from only one population on the southeast plains in Laramie County; it is found in gravelly and disturbed areas, and it is vulnerable to road development and maintenance activities	WY	--	Unlikely
Laramie columbine	*Aquilegia laramiensis*	Crevices of granite boulders and cliffs, 6,400-8,000 ft	WY	--	Potential
Laramie false sagebrush	*Sphaeromeria simplex*	*Sphaeromeria simplex* is endemic to southeast Wyoming in the western foothills of the Laramie Range, Shirley Basin, and Shirley Mountains in Albany, Carbon, Converse, and Natrona counties; it is found on gentle slopes or rims of dry, rocky limestone-sandstone “pebble plains” in wind-scoured openings dominated by cushion plant communities within more densely vegetated juniper, limber pine, big sagebrush, or mountain mahogany stands	WY	--	Potential
Lesser bladderwort	*Utricularia minor*	*Utricularia minor* is widespread in Canada and the northern United States; in Wyoming it is known from three historical and two extant populations on the Yellowstone Plateau, Jackson Hole, Laramie Valley, and Bighorn, Absaroka, and Laramie ranges, in Albany, Park, Teton, and Washakie Counties; it is found submerged in shallow ponds, lakes, and slow-moving streams	WY	--	Potential
Many-flowered gromwell	*Lithospermum multiflorum*	*Lithospermum multiflorum* is known from Arizona, Colorado, New Mexico, Oklahoma, Texas, Utah, and one historical population in Laramie County, Wyoming; it is found in shrubland, ponderosa pine, and woodland communities	WY	--	Unlikely
Marsh felwort	*Lomatogonium rotatum*	*Lomatogonium rotatum* is a widespread species of northern North America and Greenland; in Wyoming there are six extant populations known from the Sierra Madre, Medicine Bow and Laramie ranges and the Laramie and Saratoga valleys in Albany, Carbon, and Laramie counties; it occurs along the margins of salt marshes, along lakeshores, flooded meadows, and moist hummocks within willow thickets and sedge marshlands; changes in hydrology may be threat to this species	WY	--	Unlikely
Mat grama	*Bouteloua simplex*	*Bouteloua simplex* is known from Arizona, Colorado, Kansas, Maine, New Mexico, Texas, Utah, and Wyoming; in Wyoming it is known from only three populations in Laramie County; it is found in sandy gravel in draws and along roadsides; it is vulnerable to road development and maintenance activities	WY	--	Unlikely
Mountain cateye	*Oreocarya cana*	Gravelly loam soils	CO	--	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Mountain larkspur	*Delphinium ramosum*	*Delphinium ramosum* is known from New Mexico, Colorado, and one population in the Laramie Range in Laramie County, Wyoming; it is found in moist meadows in the mountains	WY	--	Unlikely
Mountain muhly	*Muhlenbergia montana*	*Muhlenbergia montana* is found in many western states but is known from only two historical and one extant population in Wyoming, in the Laramie Range of Laramie County and the Saratoga Valley in Carbon County; it grows on prairies and foothills on grassy slopes and in forest openings	WY	--	Potential
Mountain-loving sedge	*Carex oreocharis*	*Carex oreocharis* is a regional endemic of the southern Rocky Mountains from southeastern Wyoming to northern Arizona; in Wyoming it is known from only five populations in the southern Laramie Range in Albany and Laramie counties; it occurs primarily on dry, gravelly, rolling plains of granite in sagebrush grassland	WY	--	Unlikely
Nelson's milkvetch	*Astragalus nelsonianus*	Alkaline clay flats, shale bluffs and gullies, pebbly slopes, and volcanic cinders in sparsely vegetated sagebrush, juniper, and cushion plant communities at 5200-7600 ft	WY	--	Potential
Pale blue-eye-grass	*Sisyrinchium pallidum*	*Sisyrinchium pallidum* is a regional endemic of southeastern Wyoming and north-central Colorado; it grows in wet meadows, along streambanks, and in other marshy areas	WY	--	Potential
Perennial rockcress	*Boechera perennans*	*Boechera perennans* is a species of the southwestern United States and Mexico; it is at the northern limit of its distribution in Wyoming and is known from only one population in Albany County; it occurs in rocky shrublands and grasslands	WY	--	Unlikely
Persistent sepal yellowcress	*Rorippa calycina*	*Rorippa calycina* is a regional endemic of south-central Montana, western North Dakota, Nebraska, and central Wyoming, with a disjunct population in northern Canada; in Wyoming it is known from the Bighorn Basin, North Platte River drainage, and the Great Divide, Green River, and Wind River basins in Albany, Big Horn, Carbon, Fremont, Park, Sweetwater, and Washakie counties; it is found along moist sandy to muddy banks of streams, stock ponds, and man-made reservoirs near the high-water line	WY	--	Potential
Porter's aster	*Symphyotrichum porteri*	*Symphyotrichum porteri* is a regional endemic of southeastern Wyoming, central Colorado, and northern New Mexico; in Wyoming it is known only from the Laramie Range in Albany and Laramie counties, and has been reported for Carbon County; it occurs in aspen/lodgepole pine groves, limber pine/Douglas-fir stands, and grassy meadows and shrub lands on sandy granite rubble and granite talus slopes	WY	--	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Ring muhly	*Muhlenbergia torreyi*	*Muhlenbergia torreyi* is known from Arizona, Colorado, Kansas, New Mexico, Oklahoma, Texas, and Wyoming; in Wyoming it is known from only one population on the high plains in Laramie County; it is found on plains and foothills	WY	--	Unlikely
Rocky mountain phacelia	*Phacelia denticulata*	*Phacelia denticulata* is a regional endemic of southeastern Wyoming and central Colorado; in Wyoming it is known only from the Laramie Valley and Laramie Range in Albany and Laramie counties; it occurs on gravelly, sandy or clay banks, prairie draws and flats, and on rocky slopes in the mountains	WY	--	Potential
Rosinweed	*Silphium integrifolium* var. *laeve*	*Silphium integrifolium* var. *laeve* is widespread in the midwestern and southeastern United States, with a disjunct population in Laramie County, Wyoming; it is found on moderately dry to moist sites with rich soils in prairies, meadows, and at the edge of willow thickets	WY	--	Unlikely
Saffron groundsel	*Packera crocata*	*Packera crocata* is a regional endemic of southern Wyoming, northeastern Utah, and western Colorado; in Wyoming, this species is known from 3 historical records in the Medicine Bow Range and foothills of the Laramie and Washakie basins in Albany and Sweetwater counties; it is found in mid-elevation montane wet meadows, stream sides, and slopes	WY	--	Unlikely
Sandhill goosefoot	*Chenopodium cycloides*	Sandy soils on dunes, stabilized sand in blowouts, elevation 4,000-5,900 ft	CO	--	None
Sartwell's sedge	*Carex sartwellii* var. *Sartwellii*	*Carex sartwellii* var. *sartwellii* is a widespread taxon but is uncommon in Wyoming; it is found in moist aspen groves and meadows and in seeps and other wetlands	WY	--	Potential
Slender-leaved buckwheat	*Eriogonum exilifolium*	*Eriogonum exilifolium* is a regional endemic of south-central Wyoming and adjacent north-central Colorado; in Wyoming it is restricted to the Laramie and Shirley basins and foothills of the Medicine Bow and Laramie ranges in Albany and Carbon counties; it is found on semi-bare sandy-clay gumbo flats, white shaley-gypsum ridges, red clay hills, and limestone outcrops in cushion plant-bunchgrass communities	WY	--	Potential
Streambank groundsel	*Packera pseudaurea* var. *flavula*	*Packera pseudaurea* var. *flavula* occurs from southern Wyoming to northern New Mexico; in Wyoming it is known from only three populations in the southeastern Plains and Medicine Bow Range in Albany, Carbon, and Laramie counties; it occurs in moist streamside meadows	WY	--	Unlikely

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
Strict-leaved pondweed	*Potamogeton strictifolius*	*Potamogeton strictifolius* is known from across Canada and the northern United States; in Wyoming it is historically known from the Yellowstone Plateau of Yellowstone National Park, the northwest Wind River Range of Sublette County, and Laramie Basin of Albany County; there is one known extant population in the Green River Basin in Sweetwater County; it is found rooted in shallow water at edge of gently flowing rivers, lakes, or reservoirs; changes in hydrology may be threat to this species	WY	--	Unlikely
Three-fingered milkvetch	*Astragalus tridactylicus*	*Astragalus tridactylicus* is also endemic to Wyoming and Colorado; in Wyoming it is known only from Albany and Laramie counties; it occurs in grassland and open areas, including roadsides; it is also vulnerable to road development and maintenance activities	WY	--	Potential
Underwood's spike-moss	*Selaginella underwoodii*	*Selaginella underwoodii* is known from southeastern Wyoming and Colorado south to Western Texas, Utah and Arizona; in Wyoming it is known from only seven populations in the Laramie Range in Albany, Laramie, and Platte counties; it is usually found on granite cliffs and rock outcrops within Douglas-fir or ponderosa pine woods	WY	--	Unlikely
Vasey rush	*Juncus vaseyi*	*Juncus vaseyi* is known from British Columbia to Quebec, south to Idaho, Colorado, Minnesota, Illinois, and New York; in Wyoming it is known from only four populations in the Laramie and Wind River ranges in Albany and Sublette counties; it is found on sandy beaches along glacial lakes or in hummocky wet meadows	WY	--	Unlikely
Ward's goldenweed	*Oonopsis wardii*	*Oonopsis wardii* is endemic to the Laramie and Shirley Basins and the Casper Arch region in Albany, Carbon, and Natrona counties, Wyoming; it is found on selenium-rich shale-clay slopes, barren plains, and disturbed roadsides in shrublands and grasslands	WY	--	Potential
Watson goosefoot	*Chenopodium watsonii*	*Chenopodium watsonii* is known from Alberta and Saskatchewan, south to Arizona and east to Missouri, with disjunct populations in Maine; in Wyoming it is known from only three populations on the high plains of Laramie, Goshen, and Weston counties; it is found in disturbed areas, and it is vulnerable to road development and maintenance activities	WY	--	Unlikely
Weber's scarlet-gilia	*Ipomopsis aggregata ssp. weberi*	Openings in coniferous forests and scrub oak woodlands at 8,500-9,600 ft	WY	--	Potential

Appendix B Table 3.8. Sensitive Species With Potential Habitat Along the Transmission Line Corridor1,2

Group/Common Name	Scientific Name	Habitat	State Where Listed Sensitive	State Status[3,4]	Potential to Occur Along Transmission Line Corridor?
White larch-leaf beardtongue	*Penstemon laricifolius* ssp. *exilifolius*	*Penstemon laricifolius* ssp. *exilifolius* is endemic to Wyoming and Colorado; it occurs on sparsely vegetated areas or microhabitats and is often found along roadsides; it is vulnerable to road development and maintenance activities	WY	--	Potential
White scorpion-weed	*Phacelia alba*	*Phacelia alba* occurs from southeastern Wyoming south to New Mexico and Chihuahua, Mexico, and west to eastern Arizona and eastern Utah; in Wyoming it is known from only five extant populations in the southern Laramie Range and Laramie Basin in Albany and Laramie counties; it occurs in dry, open places in foothills, meadows, sagebrush grasslands, and forests, often on clay-loam, gravelly, or sandy soils	WY	--	Unlikely
Wyoming feverfew	*Bolophyta alpina*	Along ridges and low hills in areas devoid of grassy vegetation, usually with other cushionplants; elevation 5,400-5,800 ft	CO	--	Potential

Appendix C. Magnetic and Electrical (EMF) Profiles

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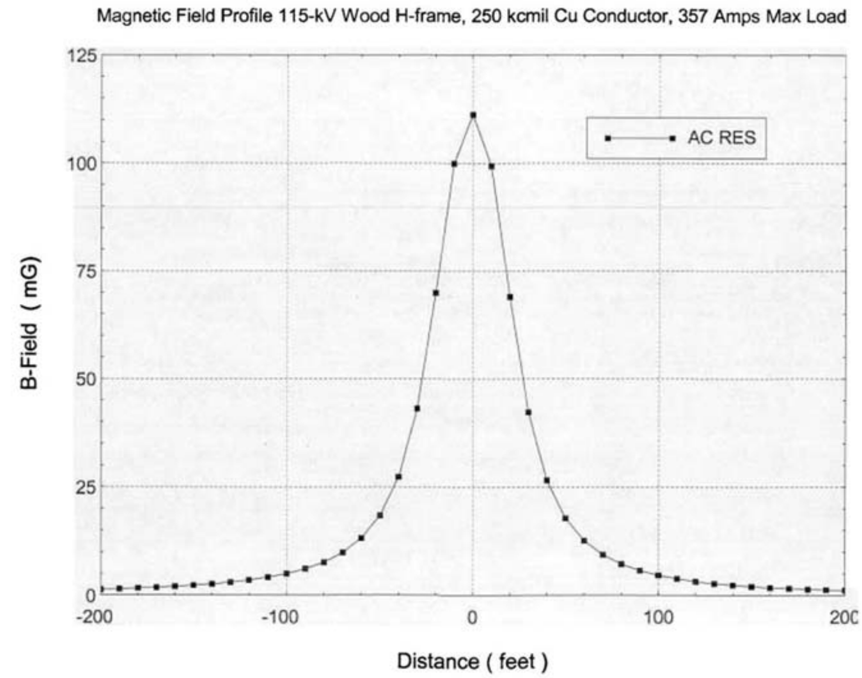

Figure C- 1 Magnetic Field Profile, Existing Ault-Cheyenne and Cheyenne-Miracle Mile 115-kV transmission lines.

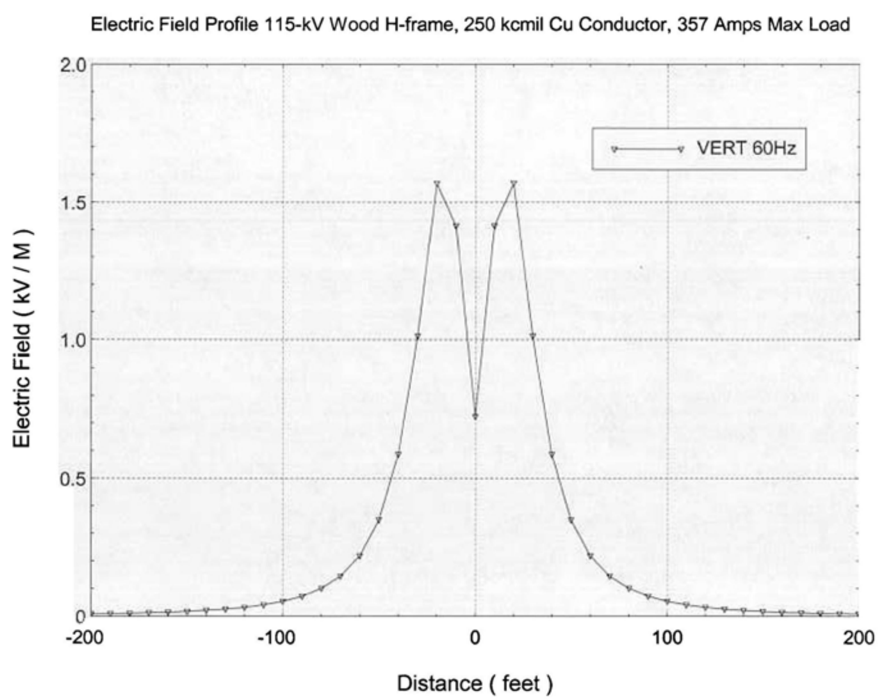

Figure C- 2 Electric Field Profile, Existing Ault-Cheyenne and Cheyenne-Miracle Mile 115-kV transmission lines.

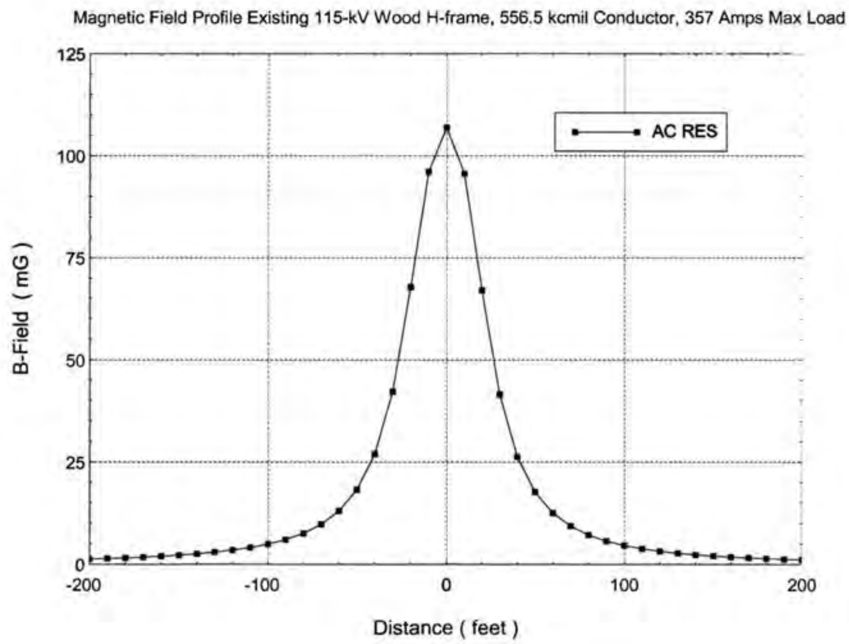

Figure C- 3 Magnetic Field Profile, Existing Cheyenne-Happy Jack and Happy Jack-Miracle Mile 115-kV transmission lines.

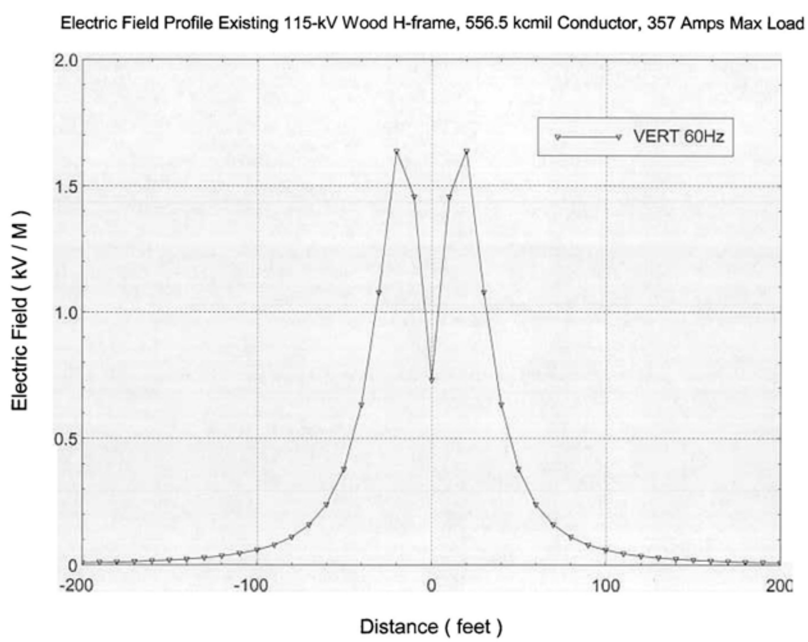

Figure C- 4 Electric Field Profile, Existing Cheyenne-Happy Jack and Happy Jack-Miracle Mile 115-kV transmission lines.

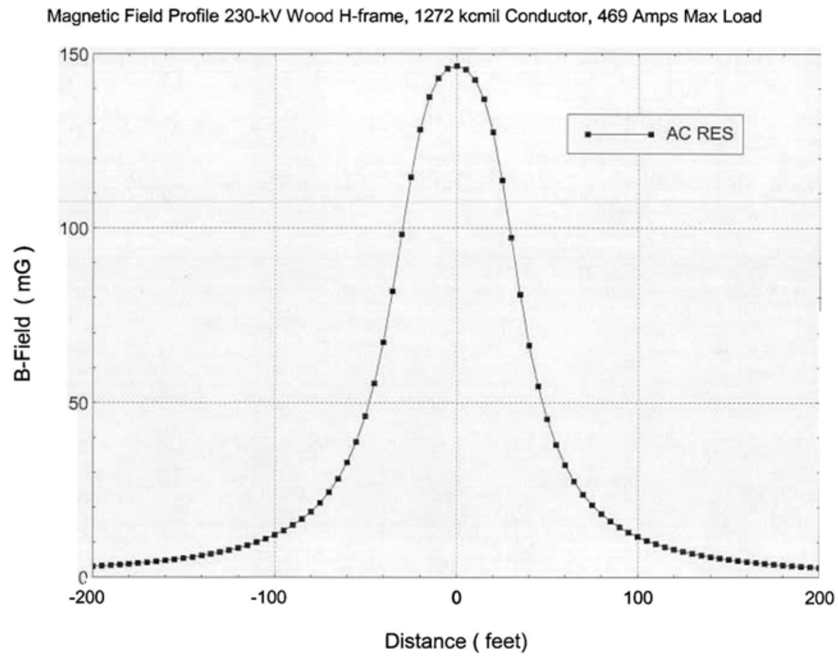

Figure C- 5 Magnetic Field Profile, Proposed Happy Jack-Miracle Mile section of the Cheyenne-Miracle Mile 230-kV transmission line

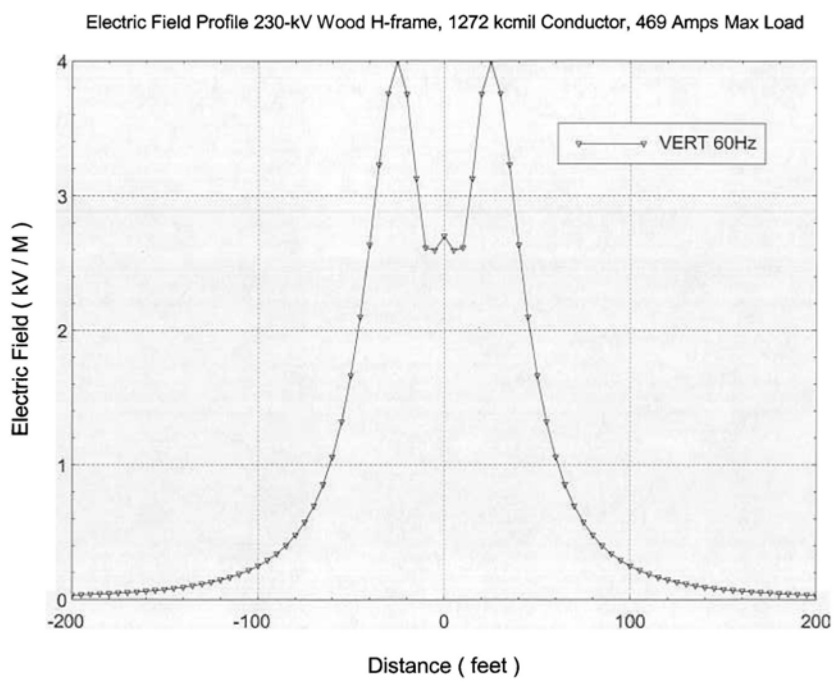

Figure C- 6 Electric Field Profile, Proposed Happy Jack-Miracle Mile section of the Cheyenne-Miracle Mile 230-kV transmission line

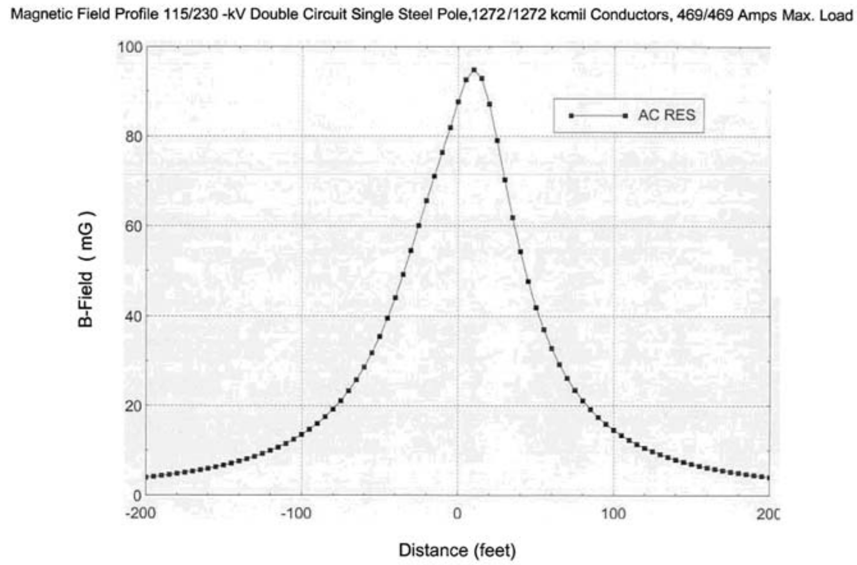

Figure C- 7 Magnetic Field Profile, Proposed Cheyenne-Happy Jack area section of the Cheyenne-Miracle Mile 230-kV transmission line; proposed Cheyenne-Happy Jack section of the Cheyenne-Happy Jack-Miracle Mile 115-kV transmission line; and proposed Ault-Cheyenne 115-kV transmission line.

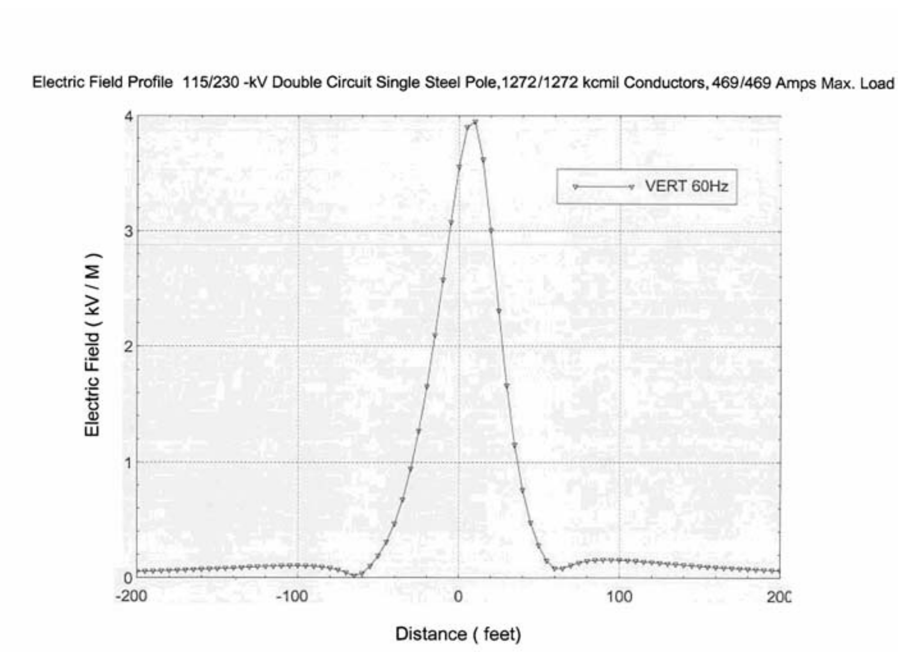

Figure C- 8 Electric Field Profile, Proposed Cheyenne-Happy Jack area section of the Cheyenne-Miracle Mile 230-kV transmission line; proposed Cheyenne-Happy Jack section of the Cheyenne-Happy Jack-Miracle Mile 115-kV transmission line; and proposed Ault-Cheyenne 115-kV transmission line.

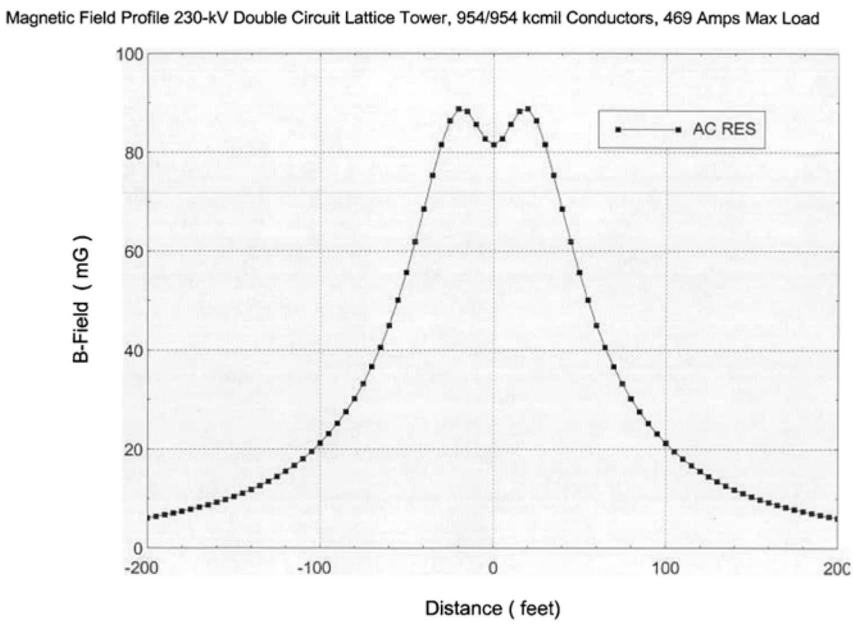

Figure C- 9 Magnetic Field Profile, Existing 3-mile Double Circuit Lattice Tower section of the Archer-Ault 230-kV and Ault-Cheyenne 115-kV transmission lines.

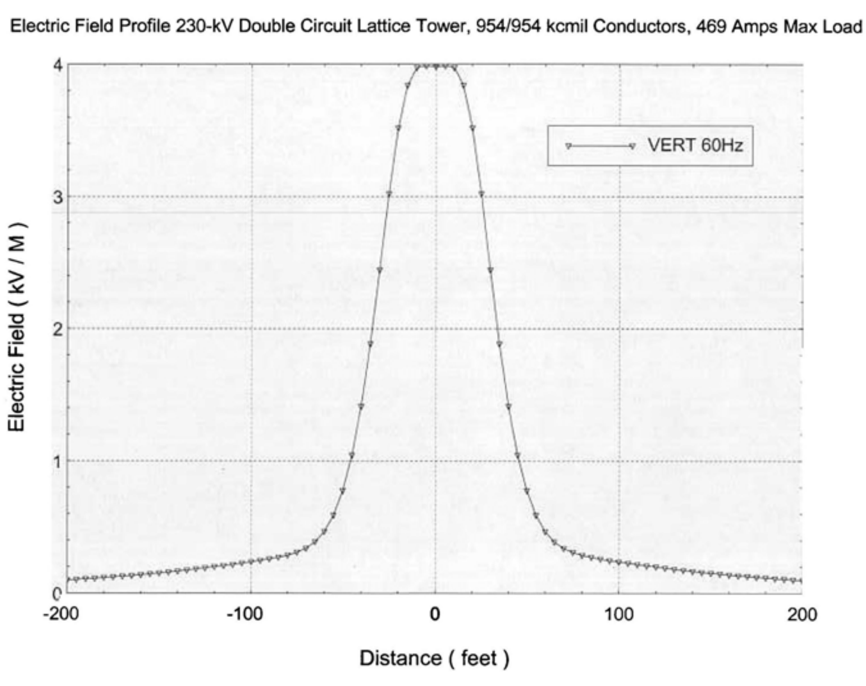

Figure C- 10 Electric Field Profile, Existing 3-mile Double Circuit Lattice Tower section of the Archer-Ault 230-kV and Ault-Cheyenne 115-kV transmission lines.

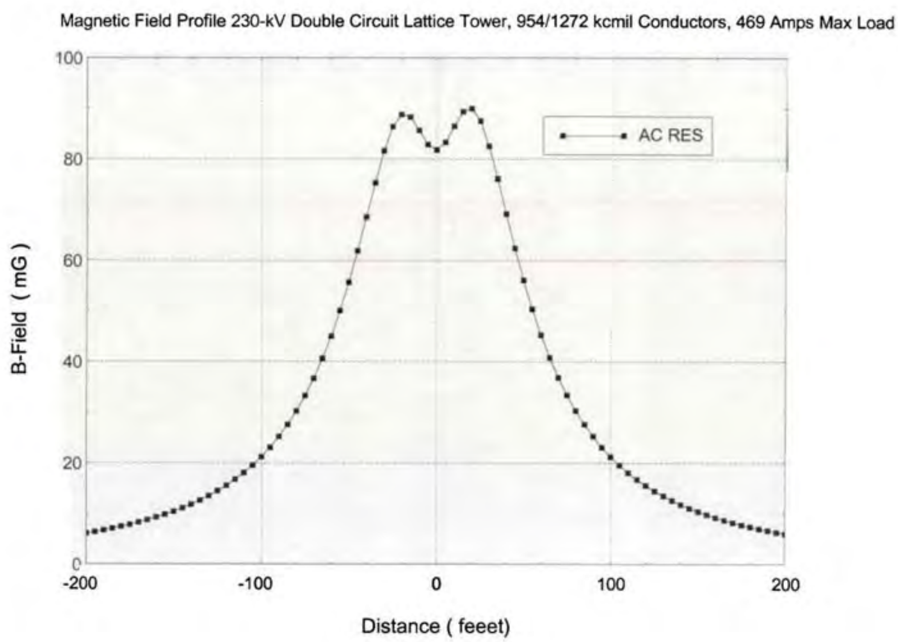

Figure C- 11 Magnetic Field Profile, Proposed 3-mile Double Circuit Lattice Tower section of the Archer-Ault 230-kV and Ault-Cheyenne 230-kV transmission lines.

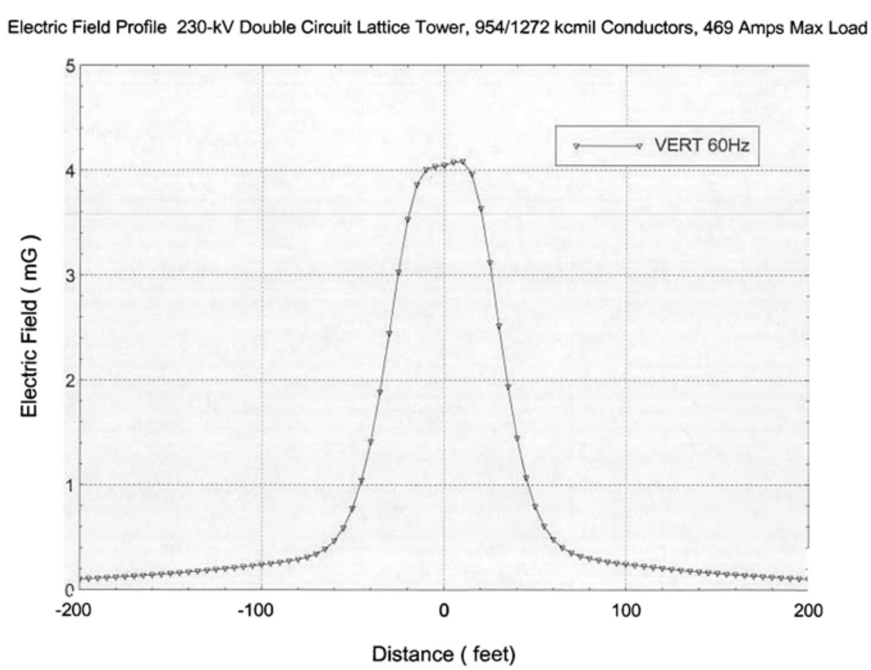

Figure C- 12 Electric Field Profile, Proposed 3-mile Double Circuit Lattice Tower section of the Archer-Ault 230-kV and Ault-Cheyenne 230-kV transmission lines.

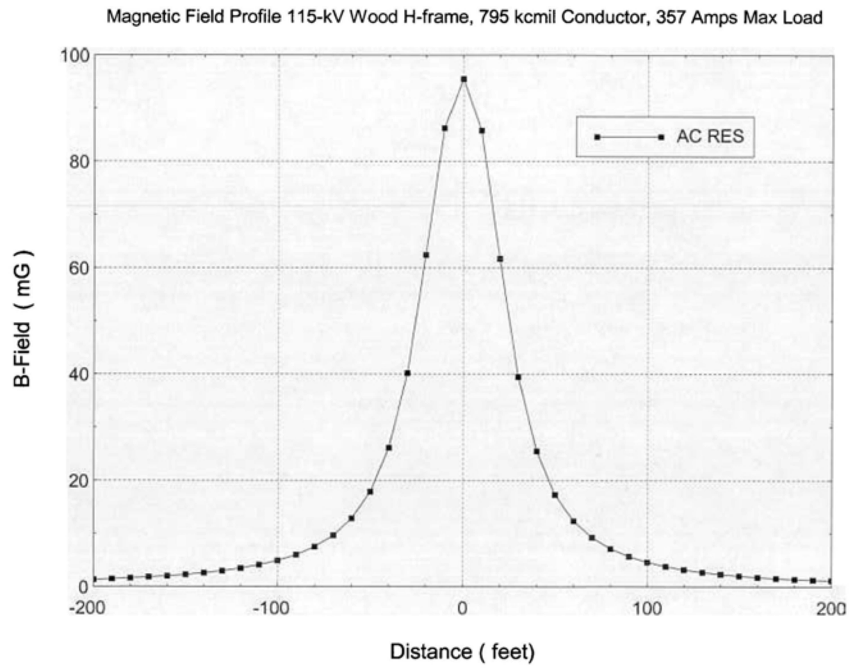

Figure C- 13 Magnetic Field Profile, Proposed 3-mile Single Circuit Wood H-frame section of the Ault-Cheyenne 115-kV transmission line.

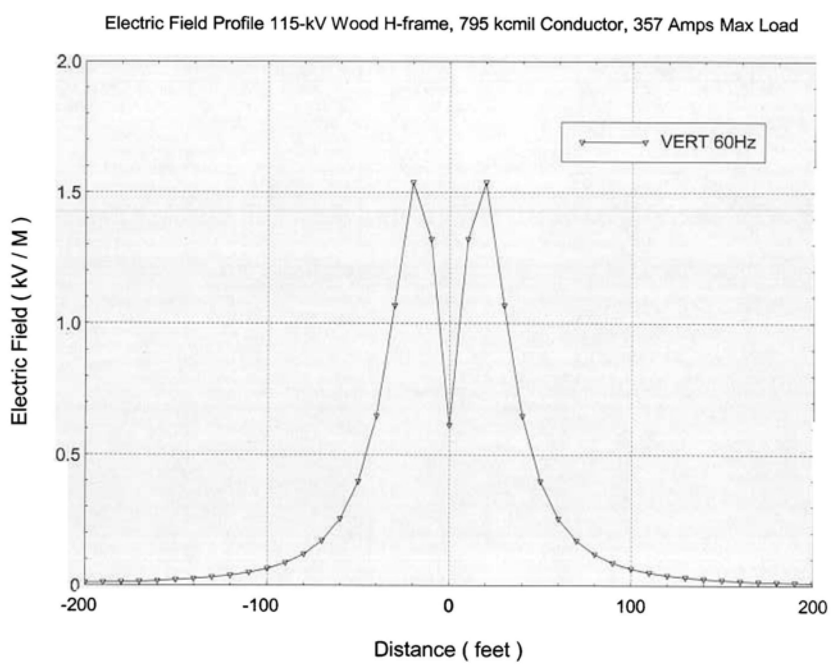

Figure C- 14 Electric Field Profile, Proposed 3-mile Single Circuit Wood H-frame section of the Ault-Cheyenne 115-kV transmission line.

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Appendix D. Public and Regulatory Agency Involvement

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FEDERAL, STATE AND COUNTY

Mr. Robert Roberts
Regional Administrator EPA Region 8 Office
999-18th St. Suite 300
Denver, CO 80202-2466

Mr. Matthew A. Bilodeau
Program Manager
U.S. Army Corps of Engineers
Wyoming Regulatory Office
2232 Dell Range Boulevard, Suite 210
Cheyenne, WY 82009-4942

Mr. Alan Kesterke
Acting State Director
BLM Wyoming State Office
5353 Yellowstone
PO Box 1828
Cheyenne,WY 82003

Mr. Kurt Kotter
Field Manager
Bureau of Land Management
Rawlins Field Office
1300 N. Third
Rawlins, WY 82301-2407

Mr. John H. Lawson
Area Manager
Bureau of Reclamation
Wyoming Area Office
705 Pendell Boulevard
Mills WY 82644

Mr. Darrell L. Jones
County Executive Director
Natural Resource Conservation Service
Cheyenne Service Center
11221A US Highway 30
Cheyenne, WY 82009-8730

Mr. Keith Covington
District Conservationist
Natural Resource Conservation Service
Laramie Service Center
1050 N 3rd St
Laramie, WY 82072-2544

Ms. Jodene L. Johnson
County Executive Director
Natural Resource Conservation Service
Saratoga Service Center
101 Cypress Ave
Saratoga, WY 82331

Mr. Tom Barnes
Conservation District Manager
Natural Resource Conservation Service
Medicine Bow Conservation Office
P.O. Box 6
Medicine Bow, WY 82329-0006

STATE AGENCIES

Mr. James Uzzell
Administrator
Wyoming Department of Environmental Quality
122 West 25th Street, Herschler Building 4-W
Cheyenne, WY 82002

Mr. Ron Micheli
Director
Wyoming Department of Agriculture
2219 Carey Avenue
Cheyenne, WY 82002-0100

Mr. Tom Thorne
Acting Director
Wyoming Game and Fish Department
5400 Bishop Boulevard
Cheyenne, WY 82006

Mr. Sleeter Dover
Director
Wyoming Department of Transportation
5300 Bishop Blvd
Cheyenne, WY 82009-3340

Ms. Claudia Nissley
Wyoming State Historic Preservation Officer
2301 Central Avenue, Barrett Building, Third Floor
Cheyenne, WY 82002

Mr. Patrick T. Tyrrell
State Engineer
Wyoming State Engineer's Office
Herschler Building, 4th Floor East
Cheyenne, WY 82002

Ms. Julie Hamilton
State Clearinghouse Coordinator,
Wyoming Federal Land Policy Office
Herschler Building
First Floor, West Wing
Cheyenne, WY 82002

Mr. Tucker Fagan
Chief Executive Officer
Wyoming Business Council
214 West 15th
Cheyenne, WY 82002

COUNTY GOVERNMENT

Albany County

Mr. Tim Chesnut
Albany County Commissioner
County Courthouse, Room 201
Laramie, WY 82070

Mr. Pat Gabriel
Albany County Commissioner
County Courthouse, Room 201
Laramie, WY 82070

Mr. Jerry M. Kennedy
Albany County Commissioner
County Courthouse, Room 201
Laramie, WY 82070

Carbon County

Ms. Linda L. Fleming
Carbon County Commissioner
P.O. Box 59
Baggs, WY 82321

Mr. Lee Meacham
Carbon County Commissioner
201 E. Buffalo
Rawlins, WY 82301

Mr. Art Zeiger
Carbon County Commissioner
P.O. Box 246
Saratoga, WY 82331

Laramie County

Ms. Diane Humphrey
Laramie County Commissioner
310 West 19th Street
Cheyenne, WY 82001

Mr. Jeff Ketcham
Larmie County Commissioner
310 West 19th Street
Cheyenne, WY 82001

Mr. Jack Knudson
Larmie County Commissioner
310 West 19th
Cheyenne, WY 82001

<u>NATIVE AMERICAN CONTACTS</u>

Ms. Geri Small
President, Northern Cheyenne Tribal Council
Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043

Mr. Gilbert Brady
Chairman, Northern Cheyenne Culture Committee
Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043

Mr. Ivan Posey
Chairman, Shoshone Business Council
P.O. Box 217
Fort Washakie, WY 82514

Mr. John Washakie
Culture Center
Eastern Shoshone Tribe
P.O. Box 538
Fort Washakie, WY 82514

Mr. Anthony Addison
Chairman, Northern Arapaho Business Council
Northern Arapaho Tribe
P.O. Box 396
Fort Washakie, WY 82514

Mr. Pat Moss
Chairman, Culture Committee
Northern Arapaho Tribe
P.O. Box 396
Fort Washakie, WY 82514

Mr. William C'Hair
Culture Committee
Northern Arapaho Tribe
P.O. Box 396
Fort Washakie, WY 82514

Mr. Francis Brown, Chairman
Medicine Wheel Coalition
for Sacred Sites in North America
P.O. Box 2378
Ranchos de Taos, NM 87557

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Appendix D Table 1 Cheyenne-Miracle Mile and Ault-Cheyenne Project Tribe Contacts

Tribe		First	Last	Title	Address	City	ST	Zip	Phone	Fax
APACHE TRIBE OF OKLAHOMA										
Apache Tribe of Oklahoma		Alonzo	Chalepah	Chairman	P.O. Box 1220	Anadarko	OK	73005	(405) 247-9493	(405) 247-7511
CHEYENNE AND ARAPAHO TRIBES OF OKLAHOMA										
Cheyenne & Arapaho Tribes of Oklahoma	Mr.	Bill	Blind	Chairman	P.O. Box 38	Concho	OK	73022	(405) 262-0345	(405) 262-0745
Southern Arapaho of Oklahoma	Mr.	William L. (Lee)	Pedro	NAGPRA Representative	P.O. Box 38	Concho	OK	73022	Home: (580) 623-2810 (not working) Work: (405) 262-0745	
Southern Cheyenne - UNDELIVERABLE as of 8/04	Mr.	Joe	Big Medicine	NAGPRA Representative	P.O. Box 38	Watonga	OK	73772	Home: (580) 623-2810 Work: (405) 262-0745	
Cheyenne & Arapaho Tribes of Oklahoma	Mr.	Gordon	Yellowman	Cultural Protection Program Coordinator	P.O. Box 38	Concho	OK	73022		
CHEYENNE RIVER Sioux TRIBE										
Cheyenne River Sioux Tribe	Mr.	Harold C.	Frazier	Chairman		Eagle Butte	SD	57625	(605) 964-4155	(605) 964-4151
Cheyenne River Sioux Tribe	Mr.	Jim	Picotte	THPO		Eagle Butte	SD	57625	(605) 964-7554	(605) 964-4151
COMANCHE TRIBE OF OKLAHOMA										
Comanche Tribe of Oklahoma	Mr.	Jonny	Wauqua	Chairman	P.O. Box 908	Lawton	OK	73501	(580) 492-4988	(580) 492-3796
Comanche Tribe of Oklahoma	Ms.	Donna	Sovo	Acting THPO/NAGPRA/OEP Director	P.O. Box 908	Lawton	OK	73502	(580) 492-3751	(580) 492-3733
CROW CREEK Sioux TRIBE										
Crow Creek Tribal Council	Mr.	Duane	Big Eagle	Chairman	P.O. Box 658	Fort Thompson	SD	57325	(605) 245-2222	(605) 245-2470
JICARILLA APACHE TRIBE										
Jicarilla Apache Tribe	Ms.	Claudia	Vigil-Muniz	President	P.O. Box 507	Dulce	NM	87528	(505) 759-3242	(505) 759-3005
Jicarilla Apache Tribe	Ms.	Lorene	Willis	Cultural Center	P.O. Box 507	Dulce	NM	87528	(505) 759-3242	(505) 759-3005
KIOWA TRIBE OF OKLAHOMA										
Kiowa Tribe of Oklahoma	Mr.	Billy Evans	Horse	Chairman	P.O. Box 297	Hobart	OK	73651	(580) 654-2300	(580) 654-2188
Kiowa Tribe of Oklahoma	Mr.	George	Daingkau	NAGPRA Representative	118 N.	Hobart	OK	73651	(580) 726-3708	(580) 726-

Appendix D Table 1 Cheyenne-Miracle Mile and Ault-Cheyenne Project Tribe Contacts

Tribe		**First**	**Last**	**Title**	**Address**	**City**	**ST**	**Zip**	**Phone**	**Fax**
					Stephens					3708
NORTHERN ARAPAHO TRIBE										
Northern Arapaho Business Council	Mr.	Burton	Hutchinson, Sr.	Chairman	P.O. Box 396	Fort Washakie	WY	82514	(307) 332-6120	(307) 332-3055
Northern Arapaho Tribe	Mr.	Howard	Brown	Vice Chairman, Cultural Committee	P.O. Box 396	Fort Washakie	WY	82514	(307) 332-6120	
Northern Arapaho Tribe	Mr.	Robert	Goggles	NAGPRA Representative	P.O. Box 396	Fort Washakie	WY	82514	(307) 332-6120	(307) 332-7543
NORTHERN CHEYENNE TRIBE										
Northern Cheyenne Tribe	Ms.	Geri	Small	President	P.O. Box 128	Lame Deer	MT	59043	(406) 477-6284	(406) 477-6210
Northern Cheyenne Tribe	Mr.	John	Woodenlegs	Vice Chairman	P.O. Box 128	Lame Deer	MT	59043	(406) 477-6284	(406) 477-6210
Northern Cheyenne Tribe	Mr.	Gilbert	Brady	THPO	P.O. Box 128	Lame Deer	MT	59043	(406) 477-6284 Preservation Office: (406) 477-6035	(406) 477-6210
NORTHERN UTE TRIBE										
Uintah & Ouray Tribal Business Committee	Mr.	D. Floyd	Wopsock	Chairman	P.O. Box 190	Fort Duchesne	UT	84026	(435) 722-5141	(435) 722-2374
Northern Ute Tribe	Ms.	Betsy	Chapoose	Director, Cultural Rights and Protection	P.O. Box 190	Fort Duchesne	UT	84026	(435) 722-4992	(435) 722-2083
OGLALA LAKOTA TRIBE										
Oglala Lakota Tribe	Mr.	John	Yellowbird Steele	Chairman	P.O. Box H	Pine Ridge	SD	57770	(605) 867-5305	(605) 867-1373
Oglala Lakota Tribe	Mr.	Dennis	King	Vice President	P.O. Box H	Pine Ridge	SD	57770		
Oglala Lakota Tribe	Mr.	Johnson	Holy Rock	5th Member	P.O. Box H	Pine Ridge	SD	57770	(605) 867-1754	(605) 867-1373
Oglala Lakota Tribe	Ms.	Elaine	Quiver	Grey Eagle Society	P.O. Box 550	Pine Ridge	SD	57770		
PAWNEE NATION OF OKLAHOMA										
Pawnee Nation of Oklahoma	Mr.	Robert	Howell	President	P.O. Box 470	Pawnee	OK	74058	(918) 762-3621	(918) 762-2389
Tribal Historical Preservation and Repatriation Office	Mr.	Francis	Morris	Director	P.O. Box 470	Pawnee	OK	74058	(918) 762-3621	(918) 762-2389
ROSEBUD Sioux TRIBE										
Rosebud Sioux Tribe	Mr.	Charlie	Colombe	President	P.O. Box 430	Rosebud	SD	57570	(605) 747-2381	(605) 747-2243
Rosebud Lakota Tribe	Mr.	Terry	Gray	Archivist	SGU Heritage	Mission	SD	57555	(605) 856-4901	(605) 856-5027

Appendix D Table 1 Cheyenne-Miracle Mile and Ault-Cheyenne Project Tribe Contacts

Tribe		First	Last	Title	Address	City	ST	Zip	Phone	Fax
					Center					
				NAGPRA Coordinator/of the Sicangu CRM Committee (or RST SCRM/NAGPRA)	P.O. Box 675					
EASTERN SHOSHONE TRIBE										
Shoshone Tribe	Mr.	Vernon	Hill	Chairman	P.O. Box 538	Fort Washakie	WY	82514	(307) 332-3532	(307) 332-3055
SOUTHERN UTE INDIAN TRIBE										
Southern Ute Indian Tribe	Mr.	Howard	Richards, Sr.	Chairman	P.O. Box 737	Ignacio	CO	81137	(970) 563-0100	(970) 563-0396
Southern Ute Indian Tribe	Mr.	Neil	Cloud	NAGPRA Coordinator	P.O. Box 737	Ignacio	CO	81137	(970) 563-0100	
Southern Ute Indian Tribe	Mr.	James	Jefferson	Cultural Preservation Coordinator	P.O. Box 737	Ignacio	CO	81137		
STANDING ROCK LAKOTA TRIBE										
Standing Rock Sioux Tribe	Mr.	Charles W.	Murphy	Chairman	P.O. Box D	Fort Yates	ND	58538	(701) 854-7201	(701) 854-2138
Standing Rock Sioux Tribe	Mr.	Tim	Mentz	THPO	P.O. Box D	Fort Yates	ND	58538	(701) 854-3476	(701) 854-2138
UTE MOUNTAIN UTE TRIBE										
Ute Mountain Ute Tribe	Ms.	Judy	Knight Frank	Chairwoman	P.O. Box 248	Towaoc	CO	81334	(970) 565-3751	(970) 565-7412
Ute Mountain Ute Farm and Ranch Enterprise	Mr.	Terry	Knight Sr.	Tribal Cultural and NAGPRA Representative	P.O. Box 53	Towaoc	CO	81334	(970) 565-6412	(970) 565-9473
OTHER INTERESTED PARTIES										
Medicine Wheel Coalition for Sacred Sites in North America	Mr.	Francis	Brown	Chairman	P.O. Box 2378	Ranchos de Taos	NM	87557		

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Appendix E. Biological Assessment

BIOLOGICAL ASSESSMENT FOR THE PROPOSED CHEYENNE-MIRACLE MILE AND AULT-CHEYENNE TRANSMISSION LINE REBUILD PROJECT, CARBON, ALBANY, AND LARAMIE COUNTIES, WYOMING, AND WELD COUNTY, COLORADO

Prepared for

Western Area Power Administration
Loveland, Colorado

U.S. Fish and Wildlife Service
Lakewood, Colorado

U.S. Fish and Wildlife Service
Cheyenne, Wyoming

and

U.S. Bureau of Land Management
Cheyenne, Wyoming

By

TRC Mariah Associates Inc.
Laramie, Wyoming
MAI Project 37365-01

October 2006

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LIST OF ABBREVIATIONS AND ACRONYMS

AMSL	Above mean sea level
APLIC	Avian Power Line Interaction Committee
AU-CH	Ault to Cheyenne
BA	Biological assessment
BLM	Bureau of Land Management
CDOW	Colorado Division of Wildlife
C.F.R.	*Code of Federal Regulations*
CH-MM	Cheyenne to Miracle Mile
CIAA	Cumulative impact assessment area
Contractor	Construction contractor
CSU	Colorado State University
ESA	*Endangered Species Act*
FEMA	Federal Emergency Management Agency
kV	Kilovolt
MP	Milepost
mph	Miles per hour
MVA	Megavolt ampere
NESC	National Electrical Safety Code
ROW	Right-of-way
TEP&C	Threatened, endangered, proposed, and candidate
TRC Mariah	TRC Mariah Associates Inc.
U.S.C.	*United States Code*
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDEQ	Wyoming Department of Environmental Quality
Western	Western Area Power Administration
WGFD	Wyoming Game and Fish Department
WNDD	Wyoming Natural Diversity Database
WQD	Water Quality Division
WRCC	Western Regional Climate Center

1.0 INTRODUCTION

The U.S. Department of Energy, Western Area Power Administration (Western) proposes to rebuild and upgrade their existing 181-mile long 115-kilovolt (kV) Cheyenne to Miracle Mile (CH-MM) and Ault to Cheyenne (AU-CH) transmission line to a 230-kV transmission line system. The CH-MM and AU-CH transmission line runs from south-central Wyoming to northeastern Colorado (Figure 1.1). The proposed CH-MM and AU-CH transmission line project would rebuild and upgrade the existing transmission line and is designed to increase electrical transmission capacity and to increase system reliability.

The proposed CH-MM and AU-CH transmission line project would be composed of two segments. The first segment would be the 146-mile long CH-MM transmission line segment, which extends from the Miracle Mile Substation, located near the Seminoe Dam, approximately 30 miles northwest of Hanna, Wyoming, in north-central Carbon County, Wyoming, to the Cheyenne Substation, located immediately south of Cheyenne, Wyoming, in south-central Laramie County (Figure 1.1). The second segment is the 35-mile long AU-CH transmission line segment, and it extends from the Ault Substation located approximately 12 miles west of Fort Collins, Colorado, in northwestern Weld County to the Cheyenne Substation. The CH-MM transmission line segment crosses portions of Carbon, Albany, and Laramie Counties, Wyoming, and the AU-CH transmission line segment passes through portions of Laramie County, Wyoming, and Weld County, Colorado. Construction on the proposed CH-MM and AU-CH transmission line is expected to begin in 2007 and be completed in 2009.

Section 7 of the *Endangered Species Act* (ESA) as amended, 16 *United States Code* (U.S.C.) § 1531 et seq. requires all federal agencies, in consultation with the U.S. Fish and Wildlife Service (USFWS), to ensure that its actions are not likely to adversely affect or to jeopardize the continued existence of threatened, endangered, proposed, and candidate (TEP&C) species or to adversely modify their critical habitat.

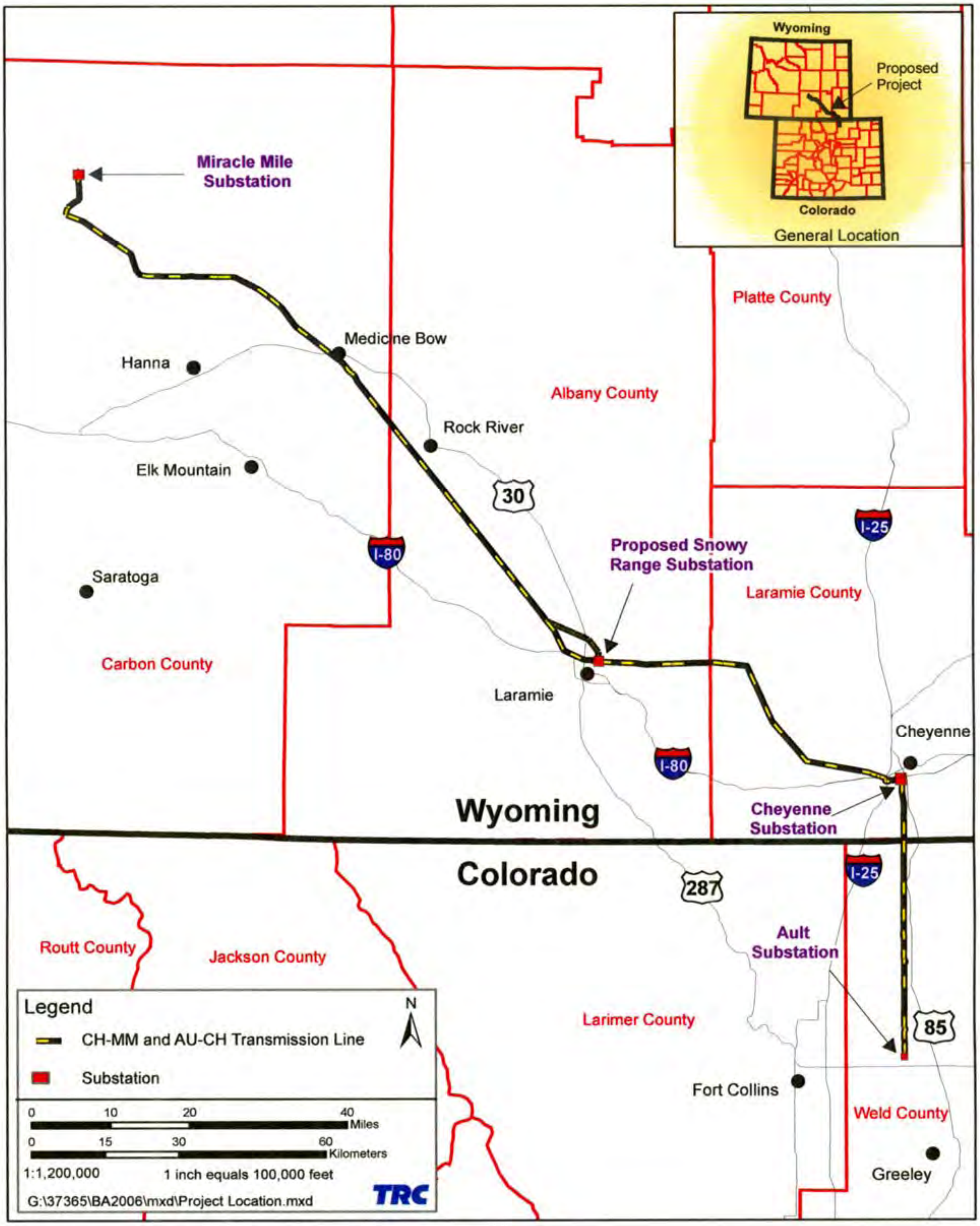

Figure 1.1 Location of Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

TEP&C species are those that have been formally and specifically designated as such by the USFWS. Threatened species are those likely to become endangered in the foreseeable future throughout all or a significant portion of their range. Endangered species are those in danger of extinction throughout all or a significant portion of their range. Proposed species (proposed for listing as threatened or endangered) are those for which the USFWS has issued proposed rules in the Federal Register but for which a final listing decision has not been made. Candidate species are those for which the USFWS has sufficient data to list as threatened or endangered but for which proposed rules have not yet been issued.

Critical habitat for a threatened or endangered species includes 1) specific locations within the geographic area occupied by the species at the time it is listed, in accordance with the provisions of Section 4 of the ESA, and on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection and 2) specific areas outside the geographic area occupied by the species at the time it is listed, if determined by the Secretary (i.e., of the Interior, of Commerce, or of Agriculture) that such areas are essential for the conservation of the species. Designated critical habitats are described in 50 *Code of Federal Regulations* (C.F.R.) Parts 17 and 226. Critical habitat for several species identified in this biological assessment (BA) exists near the project area and are discussed for each appropriate species.

As part of the informal consultation process, this BA discusses the potential effects of the Proposed Action on federal TEP&C species or critical habitat occurring or potentially occurring on or adjacent to the project area. Analysis of effects of the proposed project on TEP&C species ensures compliance with provisions of the ESA and application regulations. This BA addresses the proposed CH-MM and AU-CH rebuild/upgrade project and associated components (e.g., access roads, substations) and has been prepared in accordance with the Endangered Species Consultation Handbook (USFWS 1998b) and satisfies the requirements of Section 7(c)(1) of the ESA and applicable regulations. This BA also addresses mountain plover and greater sage-grouse, two species of USFWS concern regarding population status, trends, and threats (USFWS 2006).

1.1 PROJECT DESCRIPTION

1.1.1 Transmission Line

For the proposed CH-MM transmission line segment, Western proposes to replace the original transmission line and structures with new 230-kV structures, including both wood H-frame structures and single pole steel structures (Figures 1.2 and 1.3). The original copper conductor would be replaced with a new aluminum conductor. Western proposes to install approximately 1,017 230-kV wood H-frame structures along 134.8 miles of the CH-MM transmission line segment from approximately 6.6 miles south of the Miracle Mile Substation to Cheyenne, Wyoming. Structures along the first 6.6 miles would not be replaced. Approximately 26 double-circuit single-pole steel structures would be installed along a 5.0-mile long segment through the city of Cheyenne to the Cheyenne Substation. As part of the proposed project, Western would also remove existing 115-kV structures and the conductor.

For the AU-CH transmission line segment, Western would install 230-kV/115-kV double-circuit single-pole steel structures (see Figure 1.3) for approximately 32 miles from the Cheyenne Substation south to approximately 3 miles north of the Ault Substation. From this point, Western would use the existing Archer-Ault 230-kV lattice structures and conductors to the Ault Substation. As part of the AU-CH rebuild project, Western would construct/install approximately 3 miles of new 115-kV transmission line on the east side of the Archer-Ault lattice structures. The 115-kV transmission line would be installed on wood H-frame structures (see Figure 1.2). For the AU-CH segment, Western anticipates constructing approximately 166 single-pole steel double-circuit 230-kV structures and approximately 24 wood H-frame 115-kV structures.

Transmission structures would typically be 52 to 115 ft tall and would be spaced 700-800 ft apart; however, the structure heights and spacing would vary depending on numerous design factors such as topography and the type of feature being spanned. All transmission structures and electrical components would be designed, constructed, operated, and maintained in

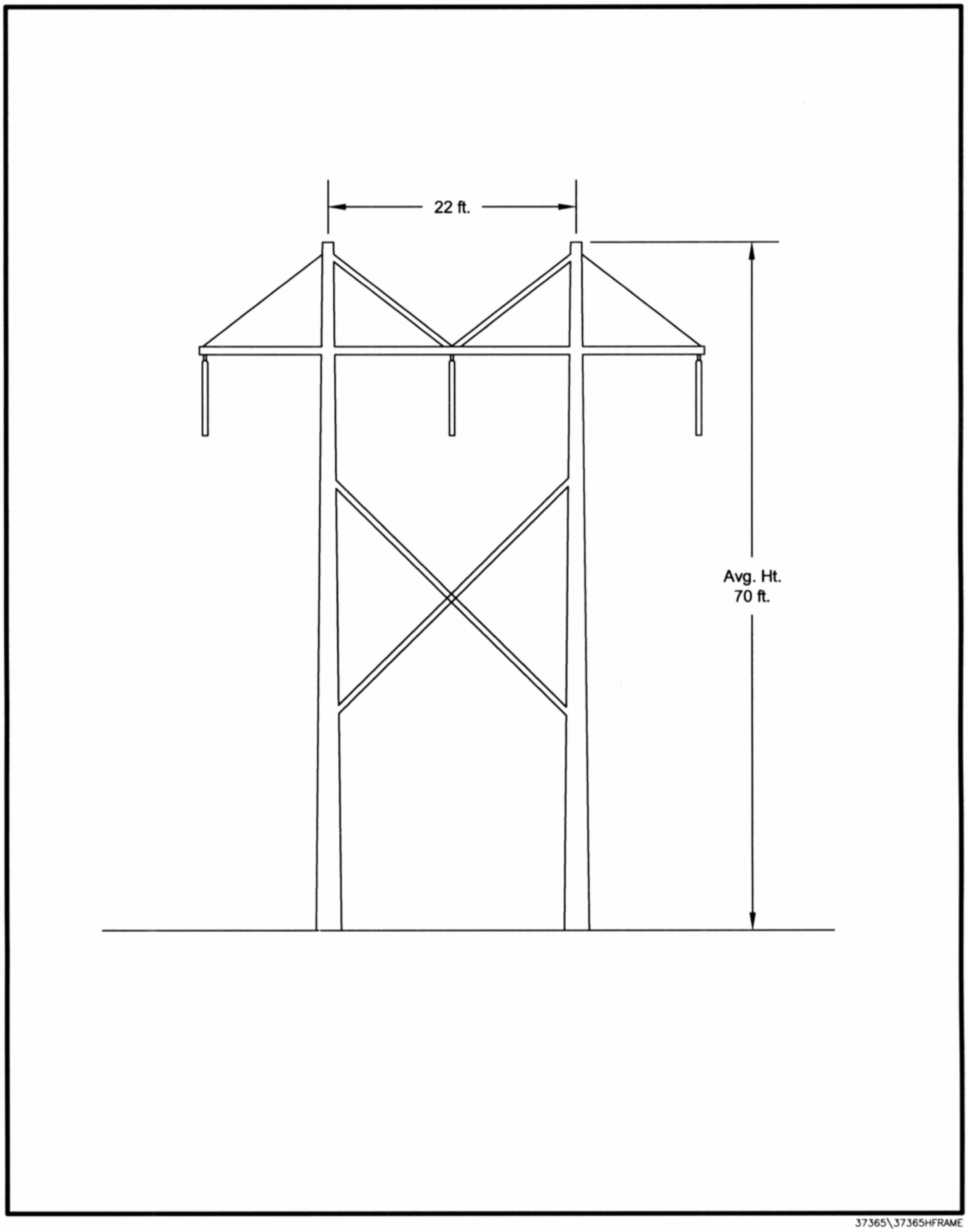

Figure 1.2 Proposed 230-kV Wood H-frame Structure, Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

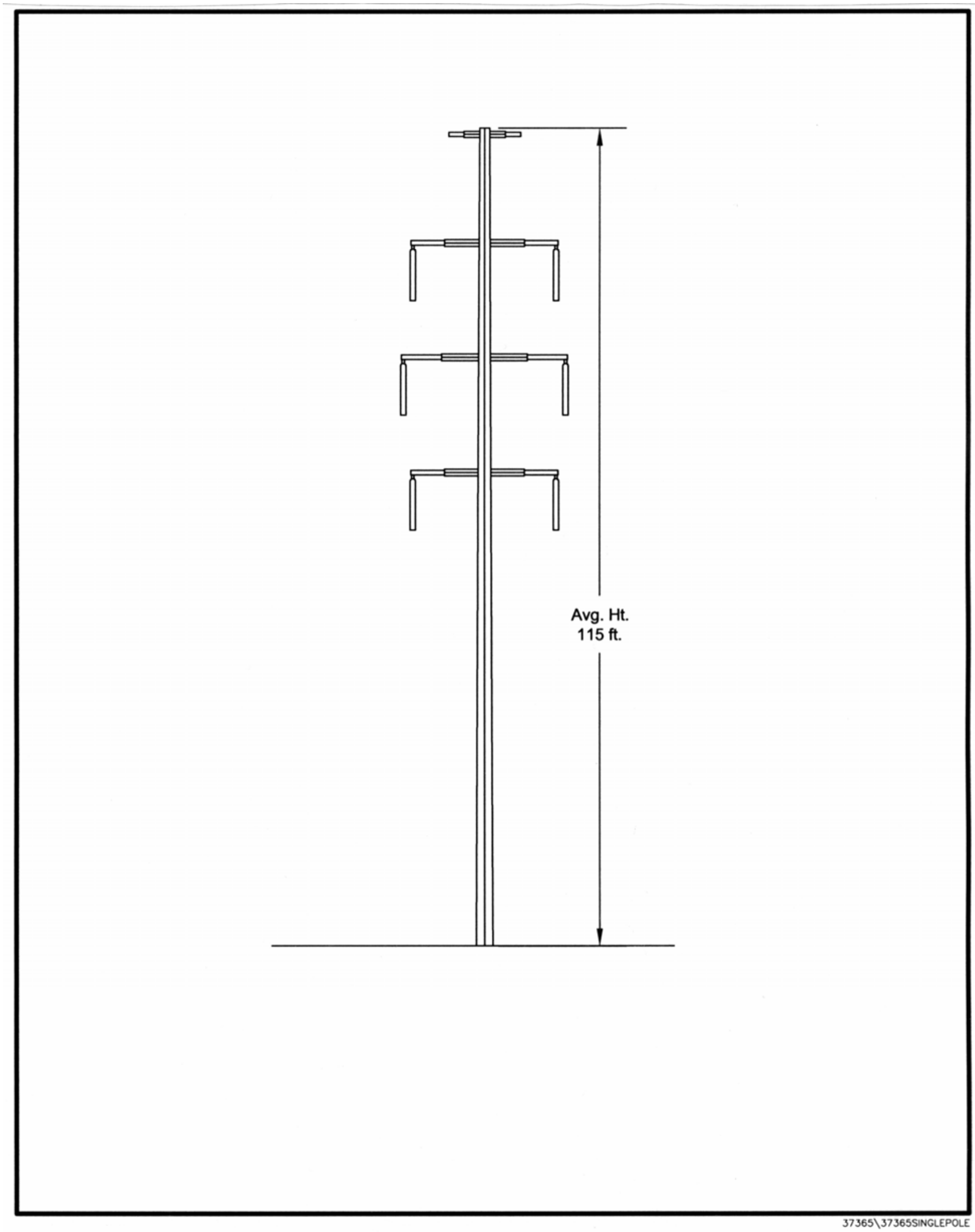

Figure 1.3 Proposed Double-Circuit 115/230-kV Single-Pole Structure, Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

conformance with the National Electrical Safety Code (NESC) and other applicable codes and standards, as well as *Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 1996* (Avian Power Line Interaction Committee [APLIC] 1996) and *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994* (APLIC 1994).

1.1.2 Proposed Right-of-way Modifications

Rebuilding and upgrading the CH-MM and AU-CH transmission line would occur within Western's existing right-of-way (ROW), which crosses land owned by the federal government, state government, and private individuals or companies. The ROW varies in width, with the typical ROW being 70 to 75 ft wide. NESC sets standards for electrical clearances for safety and reliability purposes, and Western proposes to widen the existing CH-MM and AU-CH 115-kV ROW by 30-35 ft to a typical width of 105 ft for the proposed 230-kV transmission systems.

Additional ROW would be required along most of the project route. However, additional ROW would not be necessary along the following areas of the CH-MM rebuild segment: 1) the first 6.6 miles of the CH-MM transmission line segment where the existing line and lattice structures would be uprated and no new construction would occur and 2) the last 5 miles of Western's existing combined ROW for the CH-MM segment that are adequate for the proposed double-circuit 230/115-kV single-pole steel structures through the city of Cheyenne.

Western would acquire all additional ROWs necessary to meet NESC standards, and expanded and new easements would be acquired in accordance with applicable laws and regulations governing federal acquisition of property rights. These laws allow the payment of just compensation to landowners for the rights acquired, and every effort would be made to acquire access rights by direct purchase.

1.1.3 Access Roads

Access to the proposed transmission structure sites and construction areas would occur along Western's existing roads and/or by overland construction methods. Western currently maintains access roads along the CH-MM and AU-CH transmission line, and these existing roads would continue to be used to construct and maintain the rebuilt/upgraded transmission line. Additional spur roads may be needed to access some new structure sites where vegetation and/or terrain conditions limit or restrict the movement of construction equipment and vehicles. These new access roads would be minor and would only be needed in areas characterized by rough terrain along the western part of the CH-MM segment. After construction is completed, access roads would be used on an occasional and periodic basis to access the transmission line for routine and emergency maintenance activities.

1.1.4 Establishment of the Material Staging Area

A total of 11 5-acre material staging areas (nine for the CH-MM segment and two for the AU-CH segment) would be established as necessary along the proposed ROW. These areas would serve as the mobilization and demobilization area for the project, a material storage area, an assembly area of small project components, and an equipment parking area. The construction contractor (contractor) would obtain legal access to these areas, and they would be marked in the field to delineate the boundary of the area. Since each area would be used only for material storage and equipment parking, available topsoil would not be salvaged prior to use. Following the completion of the construction phase of the project, the area would be reclaimed and revegetated in accordance with applicable procedures described in the project Plan of Development.

1.1.5 Proposed Substation Facilities and Modifications

The proposed project would include a new substation near Laramie, Wyoming, and modifications to the Miracle Mile, Cheyenne, and Ault Substations (see Figure 1.1). The proposed new Snowy Range Substation would allow sectionalization of other existing Western transmission lines in the immediate area. The existing lines have been tapped a number of times over the years to serve rural loads in south-central Wyoming, including the entire power requirements for the city of Laramie. The proposed 115/230-kV Snowy Range Substation would provide improved reliability to customers by decreasing line exposure during outage situations and would be approximately 16 acres in size. Western is currently in the process of acquiring access rights for the Snowy Range Substation and the transmission line approaching the substation. Construction of the 115-kV facilities at the Snowy Range Substation would occur in 2007, followed by construction of 230-kV facilities in 2009.

Minor modifications would also be made to the existing Miracle Mile, Cheyenne, and Ault Substations to support the proposed 230-kV transmission voltage. All modifications to existing substations would occur within the existing fenced substation facilities. The Miracle Mile Substation modification would include two 230-kV line bays and one 200 megavolt ampere (MVA) 115/230-kV transformer. The Cheyenne Substation modifications would consist of a three-breaker 230-kV ring bus and one 200-MVA 115/230-kV transformer, and the Ault Substation would be modified by adding one 230-kV line bay.

1.1.6 Construction Practices

1.1.6.1 Construction Schedule

Western plans to construct the CH-MM and AU-CH transmission line project over a three-year period, starting in 2007. A list of proposed annual construction activities is presented in Table 1.1, and a summary of construction quantities and short-term and long-term disturbance associated with the proposed project is presented in Table 1.2.

1.1.6.2 Transmission Construction

Western anticipates that two to five crews of 5 to 6 persons would complete construction along the ROW. Sequential activities for project construction would entail site clearing and grading, hauling, pole excavation and replacement, framing, conductor stringing and tensioning, and pole disposal/cleanup.

Table 1.1 Proposed Construction Activity by Year, CH-MM and AU-CH Transmission Line Project.

Year	Construction Activity
2007	Construct Snowy Range Substation (115-kV facilities)
	Construct CH-MM transmission line segment between Miracle Mile Substation and Snowy Range Substation
2008	Construct CH-MM transmission line segment between Snowy Range Substation and Cheyenne Substation
2009	Make modifications to Miracle Mile Substation
	Make modifications to Cheyenne Substation
	Make modifications to Ault Substation
	Make modifications to Snowy Range Substation (230-kV facilities)
	Construct AU-CH transmission line

Table 1.2 Summary of Construction Activities and Short-term and Long-term Surface Disturbance, CH-MM and AU-CH Transmission Line Project.

Project Component	Quantity (Number of Structures)	Short-term Disturbance (Acres)	Long-term Disturbance (Acres)
CH-MM Segment			
H-frame structures	1,017	152.0	0.90
Single pole structure sites	26	3.9	0.02
Conductor stringing sites	56	56.0	N/A[1]
Staging Areas	9	40.0 (5 acres per each site)	N/A[1]
Removal of Existing H-frame structures	1,050	157.0	N/A[1]
New Access Roads	N/A[1]	N/A[1]	N/A[1]
Segment Total	N/A[1]	408.9	0.92
AU-CH Segment			
H-frame structure sites	24	3.6	0.02
Single pole structure sites	166	24.7	0.08
Conductor stringing sites	13	13.0	N/A
Staging Areas	2	10.0 (5 acres each site)	N/A
Removal of Existing H-frame structures	240	36.0	N/A
New Access Roads	N/A[1]	N/A[1]	N/A[1]
Segment Total	445	87.3	0.10
Project Total		496.2	1.02

[1] N/A = not applicable.

1.1.6.3 Site Clearing and Grading

Standard construction procedures for transmission lines require the removal of trees and vegetation that would limit the movement of vehicles and equipment within the ROW. Based on initial construction plans, Western expects that restrictive vegetation from an area of approximately 105 by 105 ft (0.25 acre per site) would be cleared for each transmission structure site, most of which has already been cleared from the existing ROW. Additionally, some leveling of the ground surface may be needed to assure safe operation of equipment and would be limited to specific structure sites and would be minimized as much as practical. Upon completion of construction operations, disturbed areas would be scarified and left in a condition that would facilitate natural revegetation, provide for proper drainage, and prevent erosion.

1.1.6.4 Structure Excavation and Replacement

Holes would be augured into the ground for the placement of new transmission structures, and no blasting would be required. Approximately 10% of each structure would be placed underground (i.e., a 70-ft tall structure would have approximately 7-ft buried below ground). Erection crews would assemble new structures within the ROW, and crews would position structures into the augured holes using cranes. Dirt from the holes would be used to back fill around the new structures, and excess dirt would be scattered adjacent to the structure and leveled with existing topography. Existing structures would then be pulled from the ground and left in the ROW until they are removed for proper disposal.

1.1.6.5 Conductor Stringing and Tensioning

At specific stringing sites, special equipment would be set up to remove the old conductors and to pull in new ones. The conductors would then be tensioned to a safe point above ground level, so that they do not become too taut during cold temperatures or high wind conditions.

1.1.6.6 Structure Disposal/Cleanup

Old transmission structures would be removed and recycled and/or disposed per existing regulations. All associated hardware, including guying, guy rods, insulators, and conductor and overhead groundwire, would also be re-used, recycled, or disposed of as appropriate. If requested by landowners, the old poles may be provided to landowners for their use. Old transmission structures would become the property of the contractor, who would be responsible for their proper disposal. Western would clean up and restore the ROW to preconstruction condition, to the extent possible.

1.1.7 Operation and Maintenance Practices

Electrical power system dispatchers at Western's Rocky Mountain Region, Power Marketing Operations Center would continue directing routine daily operation of the CH-MM and AU-CH transmission line. The dispatchers would use communication facilities to operate circuit breakers, which control the transfer of power through the lines. Because they operate automatically, the circuit breakers ensure safety in the event of a structure or conductor failure. Currently, aerial patrols of the line are conducted two or three times each year and ground patrols are completed once a year, as weather permits. These patrols would continue as part of Western’s routine maintenance program. Climbing inspections would also be conducted, with each structure being climbed and inspected every five years after construction, following current maintenance procedures. In emergencies, prompt crew movement would be necessary to rapidly repair or replace damaged equipment.

1.1.8 Project Decommissioning Practices

At the end of the transmission line’s useful life (estimated at 50 to 60 years) or if the line is no longer required, the line and structures would be dismantled and removed from the ROW. Site specific reclamation activities would then restore disturbed areas to as near preconstruction conditions as practicable.

1.1.9 Mitigation Measures

Western has adopted standard construction, operation, and maintenance practices that would avoid and minimize impacts to the environment to the extent practicable. These measures are listed on Table 1.3 and include Western's Standard Construction and Mitigation Practices, as well as special measures to be implemented for this project. In addition, Western would implement *Western's Integrated Vegetation Management Environmental Guidance Manual* (1999) and the Bureau of Land Management's (BLM's) Best Management Practices (1990). These measures would be used to control and re-establish vegetation within the ROW and at substation sites. Any references to mitigation measures presented in this BA apply to Western, as well as to its contractor.

Table 1.3 Proposed Project Construction and Mitigation Measures, CH-MM and AU-CH Transmission Line Project.

Western's Standard Construction and Mitigation Practices[1]

1. The contractor shall limit the movement of crews and equipment to the ROW, including access routes. The contractor shall limit movement on the ROW to minimize damage to residential yards, grazing land, crops, orchards, and property and shall avoid marring the lands. The contractor shall coordinate with the landowners to avoid impacting the normal function of irrigation devices during project construction and operation.

2. When weather and ground conditions permit, the contractor shall obliterate all construction-caused deep ruts that are hazardous to farming operations and to movement of equipment. Such ruts shall be leveled, filled and graded, or otherwise eliminated in an approved manner. Ruts, scars, and compacted soils in hay meadows, alfalfa fields, pastures, and cultivated productive lands shall have the soil loosened and leveled by scarifying, harrowing, discing, or other approved methods. Damage to ditches, tile drains, terraces, roads, and other features of the land shall be corrected. At the end of each construction season and before final acceptance of the work in these agricultural areas, all ruts shall be obliterated, and all trails and areas that are hard-packed as a result of construction operations shall be loosened and leveled. The land and facilities shall be restored as nearly as practicable to the original condition.

3. Water turnoff bars or small terraces shall be constructed across all ROW trails on hillsides to prevent water erosion and to facilitate natural revegetation on the trails.

Table 1.3 (Continued)

4. The contractor shall comply with all federal, state, and local environmental laws, orders, and regulations. Prior to construction, all supervisory construction personnel will be instructed on the protection of cultural and ecological resources. To assist in this effort, the construction contract will address a) federal and state laws regarding antiquities and plants and wildlife, including collection and removal and b) the importance of these resources and the purpose and necessity of protecting them.

5. The contractor shall exercise care to preserve the natural landscape and shall conduct his construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent works, approved construction roads, or excavation operations, vegetation shall be preserved and shall be protected from damage by the contractor's construction operations and equipment.

6. On completion of the work, all work areas except access trails shall be scarified or left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion. All destruction, scarring, damage, or defacing of the landscape resulting from the contractor's operations shall be repaired by the contractor.

7. Construction trails not required for maintenance access shall be restored to the original contour and made impassable to vehicular traffic. The surfaces of such construction trails shall be scarified as needed to provide a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.

8. Construction staging areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent. On abandonment, all storage and construction materials and debris shall be removed from the site. The area shall be regraded, as required, so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.

9. Borrow pits shall be so excavated that water will not collect and stand therein. Before being abandoned, the sides of borrow pits shall be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent, undisturbed terrain into the pit or borrow area, giving a natural appearance. Waste piles shall be shaped to provide a natural appearance.

10. Construction activities shall be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes, and underground water sources. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur. Such pollutants and wastes include, but are not restricted to, refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.

Table 1.3 (Continued)

11. Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or water courses will not be performed without prior approval from appropriate state agencies. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur.

12. Excavated material or other construction materials shall not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course perimeters where they can be washed away by high water or storm runoff or can in any way encroach upon the actual water source itself. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur.

13. Waste waters from construction operations shall not enter streams, water courses, or other surface waters without use of such turbidity control methods as settling ponds, gravel-filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters shall be essentially free to settleable material. Settleable material is defined as that material that will settle from the water by gravity during a 1-hour quiescent period.

14. The contractor shall utilize such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants

15. Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, shall not be operated until corrective repairs or adjustments are made.

16. Burning or burying of waste materials on the ROW or at the construction site will not be allowed. The contractor shall remove all waste materials from the construction area. All materials resulting from the contractor's clearing operations shall be removed from the ROW.

17. The contractor shall make all necessary provisions in conformance with safety requirements for maintaining the flow of public traffic and shall conduct his construction operations so as to offer the least possible obstruction and inconvenience to public traffic.

18. Western will apply necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW to the mutual satisfaction of the parties involved. Western will install fence grounds on all fences that cross or are parallel to the proposed line.

Table 1.3 (Continued)

19. The contractor will span riparian areas located along the ROW and avoid physical disturbance to riparian vegetation. Equipment and vehicles will not cross riparian areas on the ROW during construction and operation activities. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur. Existing bridges or fords will be used to access the ROW on either side of riparian areas.

20. ROW will be purchased at fair market value and payment will be made of full value for crop damages or other property damage during construction or maintenance.

Western's Project-Specific Measures for the CH-MM and AU-CH Transmission Line Rebuild Project

21. On the CH-MM portion of the project, construction would not occur within pronghorn, mule deer, or elk crucial winter range between November 15 and April 30 on all public and private lands unless an exception is granted by the BLM. Western would also avoid construction in greater sage-grouse nesting habitat during the nesting season.

22. Until Preble's meadow jumping mouse is delisted, Western would conduct an inventory prior to construction to determine if any existing structures occur in potential Preble's habitat; these structures would be cut off at ground level to avoid disturbing Preble's habitat.

23. Western would survey all areas to be disturbed and possible trafficways for Ute ladies'-tresses during the appropriate time of year when the orchid is in flower and, if any are found, would consult with the USFWS to determine what actions are necessary to avoid or minimize impacts to Ute ladies'-tresses. During operations, traffic in potential Ute ladies'-tresses habitat would be restricted to existing roads.

24. Western would minimize the introduction and/or spread of weeds by washing all equipment at a commercial facility prior to the start of construction each year, by avoiding vehicle traffic in known weedy areas, and by rewashing equipment if weeds are encountered. Western would reclaim all disturbed areas as soon as practical after construction each year and would implement a weed control program (in consultation with the BLM and private landowners) if the project causes the spread of weeds.

25. On the AU-CH portion, Western would avoid construction in pronghorn winter ranges during critical winter periods, to be determined in consultation with the Colorado Division of Wildlife (CDOW) prior to construction each year.

26. Western would span all 3.5 mi of known Colorado butterflyplant habitat along the ROW and would limit traffic to existing roads. Operations traffic in known or potential Colorado butterflyplant habitat would also be restricted to existing roads.

Table 1.3 (Continued)

27. If construction in floodplains and wetlands were to cause soil compaction or ruts, long-term impacts to wetland vegetation could occur. To avoid this impact, Western would limit construction in floodplains and wetlands to periods when soils are dry or frozen and/or use measures to support construction equipment (e.g., oversized treads on equipment, tracked equipment, matting) to avoid compacting soils and creating ruts. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels would be established in areas where staging, stockpiling, and refueling occur.

28. If construction is to occur in potential mountain plover habitat during the breeding and nesting season, Western would survey potential habitat for the presence/absence of mountain plover nests and would avoid construction within 0.25 mile of nest sites until 37 days after the nest is discovered or 7 days post-hatching.

29. Removal of the existing wooden transmission line structures on eligible cultural sites shall be accomplished by cutting the structures at ground surface, thus requiring no additional excavation of the surrounding area. The structures shall be accessed using rubber-tire vehicles to minimize other associated impacts to the site. All structure removals shall be monitored by a permitted archaeologist. This measure applies to four structures listed below and will minimize adverse effects caused by structure removal as much as possible.

Site Number	Site Type	Owner	Structure to be Removed
5WL2622	Historic homestead	Private	58-4
5WL4830	Prehistoric tipi rings	Private	57-2
48AB1405	Prehistoric	Private	71-4
48CR8033	Prehistoric	Private	27-2

30. Impacts to eligible cultural sites caused by construction of new towers shall be minimized by planning. Whenever possible, transmission structures will be planned outside of site boundaries. In cases where avoidance is not possible, a mitigation plan will be formulated. If new structures are planned within 150 feet of a site, an archaeological monitor will be present to ensure that the site is not impacted during structure construction.

31. Heavy trucks and other equipment should not cross eligible sites when unimproved access roads are wet. Upgrading or maintenance of access roads within the boundaries of eligible cultural sites should be avoided wherever possible. Where avoidance is not possible, a mitigation plan should be prepared and implemented prior to any construction or roadwork. The plan should include mitigation of adverse effects. These guidelines apply not only to roads surveyed as project access roads but also to roads beneath the transmission lines that were subsumed in the transmission line survey.

Table 1.3 (Continued)

32. The contractor shall receive instructions from Western regarding the potential presence of fossils in pole excavations and in areas excavated or disturbed for roadwork. The contractor will be notified of his obligation to report any suspected paleontologic finds to Western. Western will retain a paleontologist to assess the significance of the paleontological finds and make recommendations. The BLM maintains staff paleontologists to perform assessments of discoveries on lands managed by them.

33. Western would design and construct the transmission line in conformance with *Suggested Practices for Protection of Raptors on Powerlines: the State of the Art in 1996* (Avian Power Line Interaction Committee 1996) to eliminate the potential for raptor electrocution. Western would install bird flight diverters at the Rock Creek crossing on both the rebuilt CH-MM transmission line and the existing Happy Jack-Miracle Mile (HJ-MM) transmission line to mitigate the potential for future raptor collisions at the Rock Creek crossing.

34. The 230-kV single pole steel structures proposed along CH-MM Section 5 and AU-CH Section 1 and Section 2 will be a neutral non-reflective steel material. Non-reflective and compatibly toned conductors and insulators will also be used in urban settings. Corten steel is not recommended in these settings due to the strong contrasts that the darker steel tone would create in these open settings.

35. In the event any threatened, endangered, candidate, or proposed species are found during construction of the proposed CH-MM and AU-CH transmission line, project-specific surface disturbance shall be halted and the USFWS will be notified immediately. Section 7 consultation between Western and USFWS will be re-initiated prior to restarting construction activities in the specific area.

36. To minimize impacts to nesting bald eagles, Western will conduct surveys prior to the initiation of construction-related activities within 1.0 mi of the construction corridor. No construction-related activities shall occur within 1.0 mi of any active bald eagle nest from February 1 though July 31. If the nest is determined to be active, Western will immediately notify the USFWS and a raptor mitigation plan will be developed and implemented with the concurrence of the USFWS, the BLM, and the Wyoming Game and Fish Department (WGFD).

37. Only those trees, tree tops, and limbs that are deemed to pose a hazard to operation and maintenance of the powerline will be removed. Western would minimize tree clearing, topping, and limb clearing, and these activities would only occur within the authorized ROW.

[1] Source: Western Area Power Administration (2004).

2.0 SPECIES EVALUATIONS

2.1 INTRODUCTION

This chapter presents a general description of the proposed transmission line corridor, information on relevant TEP&C species and critical habitats in the area, and the determination of likely effects after successful implementation of the mitigation measures presented in Section 1.1.9. This chapter also addresses cumulative effects or determines the degree (if any) to which the proposed project would contribute to additive direct and indirect effects from other ongoing or reasonably foreseeable activities. Projects not related to the proposed project that occur during the same time period and affect the same resources as the proposed project are included in the assessment of cumulative effects. Future federal activities are identified in this BA but are not specifically assessed in the cumulative effects analysis because a separate BA would be completed to assess the direct, indirect, and cumulative effects of specific future federal projects on TEP&C species. As directed in USFWS *Endangered Species Consultation Handbook* (1998b), alternatives to the proposed project are not addressed in this BA but are included and addressed in the environmental assessment prepared by Western and the BLM.

For the purpose of the cumulative impacts analysis portion of this document, the cumulative impact assessment area (CIAA) includes the proposed ROW and a 2-mile buffer on either side of the centerline of the proposed ROW.

Based on information obtained from the USFWS (2005, 2006), the species in both Wyoming and Colorado to be addressed in this BA are presented in Table 2.1. Based on the results of the analysis of effects presented in this chapter, a summary of the likely adverse effects of the Proposed Action on TEP&C species is presented in Table 2.2.

Table 2.1 Federal Threatened, Endangered, Proposed, and Candidate Species and Their Potential Occurrence on the CH-MM and AU-CH Transmission Line Project Area.[1]

Common Name	Scientific Name	Federal Status [2]	Potential State Occurrence [3]	Potential Occurrence Within the Immediate Project Area [4]
MAMMALS				
Black-footed ferret	*Mustela nigripes*	E, XN	WY/CO	R
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	T	WY/CO	O
BIRDS				
Bald eagle [5]	*Haliaeetus leucocephalus*	T Proposed for delisting	WY/CO	O
Mexican spotted owl	*Strix occidentalis lucida*	T	CO	N
AMPHIBIANS				
Wyoming toad	*Bufo baxteri*	E	WY	N
PLANTS				
Blowout penstemon	*Penstemon haydenii*	E	WY	X
Ute ladies'-tresses	*Spiranthes diluvialis*	T	WY/CO	O
Colorado butterflyplant	*Gaura neomexicana* ssp. *Coloradenssis*	T	WY/CO	O
PLATTE RIVER SPECIES				
Piping plover	*Charadrius melodus*	T	N/A	CR
Interior least tern	*Sterna antillarum*	E	N/A	CR
Whooping crane	*Grus americana*	E	N/A	CR
Pallid sturgeon	*Scaphirhynchus albus*	E	N/A	CR
Western prairie fringed orchid	*Platanthera praeclara*	T	N/A	CR

[1] Adapted from USFWS (2005, 2006).
[2] Federal status (USFWS 2006):
E = listed as federally endangered.
T = listed as federally threatened.
XN = experimental/nonessential
[3] N/A = not applicable.
[4] Species occurrence:
CR = not present in project area but occur downstream of the project area with the Platte River system.
N = no evidence that the species occur in the general project area.
O = occasional; this species may occur in the project area during certain times of the year and may be locally common when suitable food is available.
R = rare; species may be in the project area for just a few days or hours (e.g., stopping over during migration), or the species has only occasionally or rarely been sighted in the project area. Encounters during project development and operation are very unlikely.
X = unlikely; there has been no recent historical record of the species occurrence in the project area; probability of encountering the species during project development and operation is very unlikely.
[5] Proposed for removal from federal listing.

Table 2.2 Summary of Likely Effects on Federal Threatened, Endangered, Proposed, and Candidate Species.

Common Name	Likely Effects on the Species and Critical Habitats of the Proposed Action
MAMMALS	
Black-footed ferret	No effect
Preble's meadow jumping mouse	May affect but is not likely to adversely affect and would not adversely modify critical habitat
BIRDS	
Bald Eagle	May affect but is not likely to adversely affect
Mexican spotted owl	No effect
AMPHIBIANS	
Wyoming toad	No effect
PLANTS	
Blowout penstemon	No effect
Ute ladies'-tresses	No effect
Colorado butterflyplant	No effect and would not modify critical habitat
PLATTE RIVER SPECIES	Consultation to be completed at a later date

2.2 DESCRIPTION OF THE GENERAL PROJECT AREA

2.2.1 Physiography

Physiographically, the CH-MM and AU-CH transmission line is located in the Hanna Basin, Laramie Basin, Laramie Mountains, and Denver Basin of southeastern Wyoming and the western side of the Denver Basin of northeastern Colorado (Knight 1994). Elevations along the proposed route vary between 8,500 ft above mean sea level (AMSL) and 5,100 ft AMSL. Starting at the northwestern portion of the proposed transmission line, the Miracle Mile Substation located in north-central Carbon County, Wyoming, has an elevation of approximately 6,000 ft AMSL. From this point, the elevation along the route varies between 6,000 and 7,400 ft AMSL from Miracle Mile Substation to the Snowy Range Substation in Albany County. The line then climbs over the Laramie Mountains and reaches a maximum elevation of 8,500 ft AMSL and then gradually decreases until it reaches an elevation of approximately 6,000 ft AMSL near the Cheyenne Substation in Laramie County. Advancing south from the Cheyenne Substation, the elevation of the route increases to approximately 6,600 ft AMSL near the Wyoming/Colorado border and then steadily decreases until it reaches an elevation of approximately 5,100 ft AMSL near the Ault Substation in Weld County, Colorado.

2.2.2 Vegetation

The principal vegetation types along the ROW are mixed grass prairie, shortgrass prairie, Wyoming big sagebrush steppe, and dryland and irrigated cropland (U.S. Geological Survey [USGS] 1996; Colorado State University [CSU] 2003).

Mixed grass prairie, which is present along the route in Wyoming and Colorado, is comprised of bunchgrasses, sod-forming grasses, and a variety of forbs and small shrubs. Common species include needle-and-thread grass, western wheatgrass, blue grama, Sandberg bluegrass, threadleaf sedge, needleleaf sedge, Junegrass, Indian ricegrass, prickly pear cactus, scarlet globemallow, fringed sagewort, Hood's phlox, milkvetch, and locoweed (Knight 1994). Depending on location, other species such as bluebunch wheatgrass, little bluestem, sideoats grama, prairie sandreed, sand dropseed, alkali sacaton, fourwing saltbush, greasewood, and inland saltgrass may be present.

Shortgrass prairie, present along the route in Colorado, is typically dominated by blue grama and buffalograss, which comprise 70-90% of vegetative composition by weight. During droughts, buffalograss tends to replace blue grama (Holechek et al. 1989). Winterfat is a common shrub, and species that occur in mixed grass prairie (as listed above) also occur in lesser amounts in shortgrass prairie.

Wyoming big sagebrush steppe, which occurs along the route in Wyoming, is dominated by Wyoming big sagebrush, either in dense homogeneous stands or in open shrublands interspersed with grasses and forbs. Associated species typically include western wheatgrass, Junegrass, needle-and-thread grass, Sandberg bluegrass, prickly pear cactus, scarlet globemallow, and rabbitbrush. Gardner's sagebrush, silver sagebrush, basin big sagebrush, and greasewood may also be present, depending on landscape position.

Dryland and irrigated cropland dominates the southernmost 17 miles of the transmission line ROW in Colorado. Crops include corn, wheat, and hay.

Other vegetation types occurring along the route include aspen woodland (at about mileposts [MPs] 105-107 between Laramie and Cheyenne), basin rock and soil (MPs 93 and 95 in the Laramie Basin and MP 121 on the eastern foothills of the Laramie Range), desert shrub (MPs 24, 25, 40, and 41 in the northwestern portion of the ROW), greasewood (scattered along the ROW), irrigated crops (at major drainages and irrigation ditches), lodgepole pine (MPs 130 and 131 west of Cheyenne), xeric upland shrub (scattered along the ROW), dryland crop (MPs 145 and 146 southwest of Cheyenne), forest riparian (MPs 119, 122, 127, and 128 along Crow and Lodgepole Creeks and their tributaries), and grass wetland (MPs 51 and 52 at Horne Lake) (USGS 1996).

Vegetation at the proposed Snowy Range Substation location is shortgrass prairie.

2.2.3 Surface Water Resources

The project area is within the North Platte and South Platte River watersheds. The proposed transmission line rebuild ROW crosses 232 surface waters; 195 surface water bodies occur along the CH-MM ROW, and the remaining 37 occur along the AU-CH ROW. Most are unnamed ephemeral channels that flow in response to snow melt or local precipitation events or are perennial and intermittent streams and playas. The largest surface waters crossed are the Medicine Bow and Laramie Rivers. Several unnamed channels are tributaries to perennial waters (e.g., Lone Tree, Spring, and Owl Creeks).

Water quality along the Wyoming portion of the transmission line is good to poor. The Laramie and Medicine Bow Rivers are Class 2AB waters that support all beneficial uses, including drinking water, game fish, nongame fish, fish consumption, other aquatic life, recreation, wildlife, agriculture, industry, and scenic values (Wyoming Department of Environmental Quality, Water Quality Division [WDEQ/WQD] 2001). Additional Class 2AB waters include the Little Laramie and Little Medicine Bow Rivers; Saylor, Austin, Troublesome, Difficulty, Rock, and Foote Creeks; and Allen and East Allen Lakes. Most other creeks and lakes near the ROW (e.g., Coal Creek, Corral Creek, and Dry Creek) are Class 2C or 3B. Class 2C waters support all of the above-listed uses except drinking water and game fish, whereas Class 3B waters support all uses except drinking water, game fish, nongame fish, and fish consumption.

No specific surface water quality data are available for the Colorado portion of the transmission line ROW. Surface water use in the northern portions of the ROW is for livestock (e.g., stockponds) and wildlife use. In the southern portion of the Colorado ROW, surface waters are also used to irrigate cropland.

No surface waters occur at or adjacent to the proposed Snowy Range Substation location.

2.2.4 Climate

The project is located in the high plains of the southeastern portion of Wyoming and the northernmost portion of the front range of Colorado. From a climatological standpoint, the project area is considered semi-arid, with the potential for wind blown dust being high, similar to the rest of the intermountain west. This premise is supported by the high annual average wind speeds in the project area. Wind speeds range from an annual average of 12.2 miles per hour (mph) in Laramie, Wyoming, to 12.6 mph in Cheyenne, Wyoming, to 7.1 mph in Fort Collins, Colorado, near the southern terminus of the project (Western Regional Climate Center [WRCC] 2004).

As expected in a semi-arid area, annual average precipitation totals are low. Precipitation ranges from 10.36 inches per year in Medicine Bow, Wyoming, to 10.63 inches in Laramie, Wyoming, to 15.15 inches in Cheyenne, Wyoming (Martner 1986), to 13.30 inches per year in Nunn, Colorado (WRCC 2004). Spring and early summer are the wettest periods, with May being the wettest month.

The project area experiences fairly large diurnal variations in temperature due to the high project elevations and dry conditions. For example, in July, average temperatures range from the high 40°F to low 50°F in the morning to the upper 80°F range in the afternoon (WRCC 2004).

January is the coldest month of the year with daytime temperatures ranging from around 10°F in the morning to the high 30°F and low 40°F during the afternoon.

2.3 BLACK-FOOTED FERRET

2.3.1 Current Species Status

The black-footed ferret is a small mink-sized mammal that is listed as a federally endangered species. The species was placed into a captive breeding program in 1986 and has been re-introduced into various release sites in the west, and the USFWS designates these re-introduced populations as nonessential/experimental populations. Additional management flexibility is provided by the USFWS for managing nonessential/experimental populations that are located outside of National Park Service or National Wildlife Refuge System lands (e.g., BLM lands). Species designated as nonessential/experimental populations are treated by the USFWS as proposed rather than listed (USFWS 2006).

The black-footed ferret was once distributed throughout the high plains of the Rocky Mountain and western Great Plains regions (Forrest et al. 1985). The western portion of the proposed CH-MM transmission line lies within historic black-footed ferret habitat, and black-footed ferret observations were recorded within 1.0 mile of the ROW in 1968 and within approximately 4 miles of the existing transmission line at two separate locations in 1979. However, no specimens were collected or trapped. The only known populations of black-footed ferrets currently exist in captive breeding facilities and in nonessential/experimental populations that have been re-introduced into several areas in the western U.S. The first black-footed ferret re-introduction efforts occurred in 1991 in Shirley Basin in south-central Wyoming (WGFD 1997).

2.3.2 Habitat Description

Prairie dogs are the primary food source of black-footed ferrets (Sheets et al. 1972); however, black-footed ferrets have also been historically collected away from prairie dog towns (Forrest et al. 1985). In 1981, black-footed ferrets were considered extinct until a small population was discovered west of Meeteetse, Wyoming, in northwest Wyoming. Following outbreaks of canine distemper, all surviving black-footed ferrets were captured and brought into captivity in 1986, and a captive breeding program was initiated (USFWS 1989). The captive breeding program is designed with the objective of rebuilding the population of black-footed ferrets and re-introducing the species into suitable habitats in the wild.

The first ever black-footed ferret re-introductions began in 1991 in the Shirley Basin/Medicine Bow Management Area located in south-central Wyoming (Figure 2.1). There are two re-introduction areas located within this area. The first re-introduction area is the Shirley Basin Management Zone, and re-introduction efforts began and continue in this area. The second re-introduction area is the Medicine Bow Management Zone, and black-footed re-introductions began in this area in 2005 (personal communication, March 8, 2006, with Martin Grenier, WGFD, Lander, Wyoming). The proposed transmission line is located approximately 9 miles southwest of the Shirley Basin Management Zone. However, approximately 51 miles of the western portion of the CH-MM transmission line are located in the Shirley Basin/Medicine Bow Management Area, including approximately 25 miles of transmission line that would be located within in the Medicine Bow Management Zone.

Since prairie dog are the primary food source for black-footed ferrets, the proposed ROW was initially surveyed (not mapped) for prairie dog colonies by TRC Mariah Associates Inc. (TRC Mariah) biologists between December 2002 and August 2004. Based on the results of these surveys, it was determined that white-tailed prairie dog colonies intersect or are located near approximately 23 miles of the existing CH-MM transmission line segment in Wyoming (16 miles in Carbon County, 5 miles in Albany County, and 2 miles in Laramie County). Additionally, it was determined that white-tailed prairie dog colonies intersect or are located near approximately 0.2 mile of the existing AU-CH transmission line segment, and all of this area is located in Weld County, Colorado. This represents approximately 17% of the CH-MM transmission line segment and less than 1% of the AU-CH transmission line segment (see Figure 2.1).

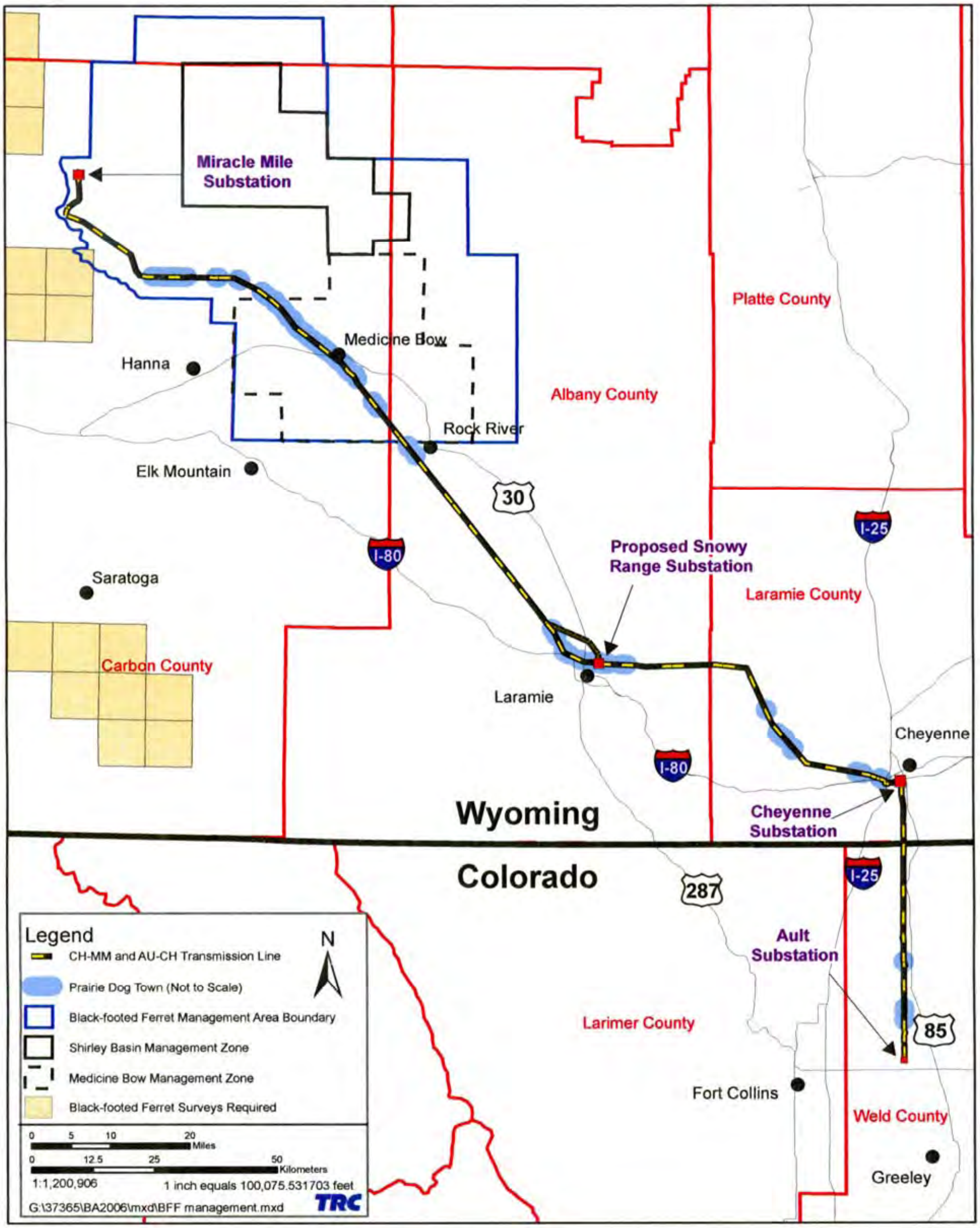

Figure 2.1 White-tailed Prairie Dog Habitat and Ferret Management Areas, Proposed CH-MM and AU-CH Transmission Line, Southeastern Wyoming and Northeastern Colorado.

White-tailed prairie dog colonies intersect or are located near approximately 16 miles of the existing CH-MM segment within the Shirley Basin/Medicine Bow Management Area. In addition, white-tailed prairie dog colonies intersect or are located near approximately 10 miles of the existing CH-MM segment within the Medicine Bow Management Zone.

The proposed CH-MM and AU-CH transmission line is located outside of areas requiring black-footed ferret surveys (USFWS 2006) (see Figure 2.1). The closest required black-footed ferret survey area is located approximately 2 miles southwest of the proposed transmission line.

2.3.3 Determination of Effects

The proposed ROW is located outside of areas requiring black-footed ferret surveys (see Figure 2.1) (USFWS 2004), and WGFD indicated that black-footed ferret surveys are not warranted within the proposed ROW (personal communication, 2006, with Martin Grenier, WGFD). In 2005, the re-introduced Shirley Basin black-footed ferret population was estimated to include about 150 black-footed ferrets (personal communication, 2006, with Bob Oakleaf, WGFD). Surveys were also completed in September 2006, during which 119 ferrets were captured and marked, and, while the WGFD is currently developing the population size estimate, a preliminary evaluation suggests that there may be up to 300 ferrets. Re-introduced black-footed ferrets have not been documented in the vicinity of the CH-MM corridor, and, because the WGFD anticipates little potential for impacts from the project, surveys are not recommended by the WGFD for ferrets along the corridor prior to construction. Furthermore, the black-footed ferret management plan requires the WGFD to remove ferrets from areas where construction projects could impact individuals (WGFD and BLM 1991). Since no ferrets have been documented on or near the corridor, and since it would be incumbent on the WGFD to remove any such ferrets, the black-footed ferret would not be impacted. The project would have **no effect** on black-footed ferrets.

2.4 PREBLE'S MEADOW JUMPING MOUSE

2.4.1 Current Species Status

Preble's meadow jumping mouse is a small rodent in the Zapodidae family and is one of 12 recognized subspecies of the meadow jumping mouse (Clark and Stromberg 1987). Preble's meadow jumping mouse was designated as threatened under the ESA in its entire range by the USFWS in 1998. As a result of listing Preble's meadow jumping mouse, the USFWS has identified and designated critical habitat areas for the mouse under the ESA in southeastern Wyoming and along the Front Range in Colorado. However, in January 2005, the USFWS determined that the Preble's meadow jumping mouse should not be classified as a separate species of meadow jumping mouse and began the process to formally delist it. Before the rule is finalized, the USFWS will evaluate threats to the meadow jumping mouse in all or a significant portion of its range. Until the final determination is made by the USFWS, the Preble's meadow jumping mouse will continue to be protected under the ESA.

2.4.2 Habitat Description

2.4.2.1 General Habitat

Preble's meadow jumping mouse occurs in low undergrowth consisting of grasses and forbs in wet meadows and riparian areas where tall shrubs and low trees provide adequate cover. It prefers lush vegetation along watercourses or herbaceous understories in wooded areas with close proximity to water (Clark and Stromberg 1987; USFWS 2006). A portion of the CH-MM and AU-CH transmission line is located in overall range of the Preble's meadow jumping mouse (USGS 1996) (Figure 2.2).

While no site-specific surveys for Preble's meadow jumping mouse have been conducted along the CH-MM segment, general habitat surveys for sensitive species, including Preble's meadow jumping mouse, within and near the proposed transmission line were conducted by TRC Mariah

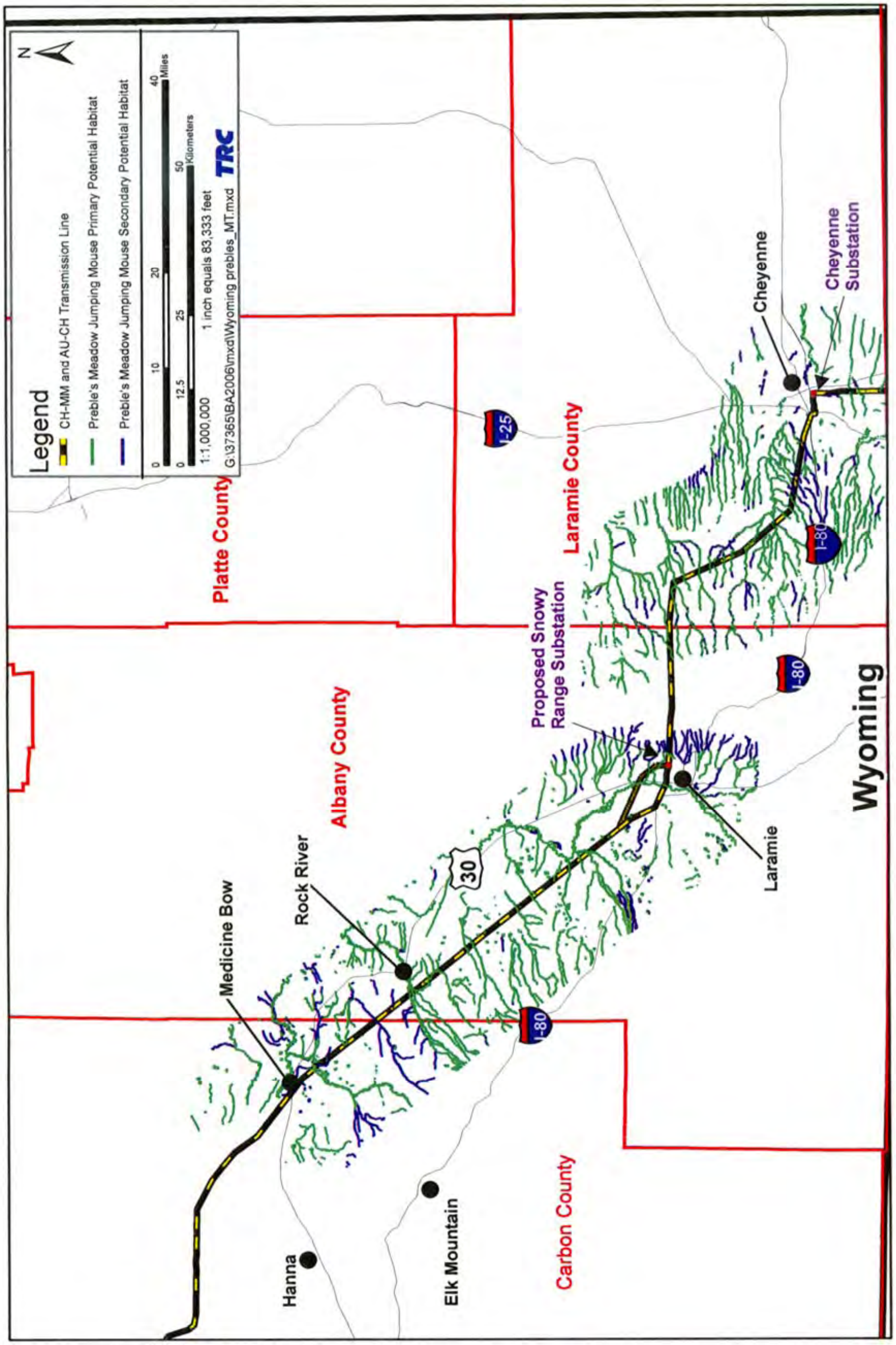

Figure 2.2 Potential Preble's Meadow Jumping Mouse Habitat, Proposed CH-MM and AU-CH Transmission Line, Southeastern Wyoming and Northeastern Colorado.

biologists between December 2002 and August 2004. In addition, based on information from the Wyoming Natural Diversity Database (WNDD) (2002) and USGS (1996), it was determined that the proposed CH-MM segment would likely cross numerous areas that provide suitable habitat for the Preble's meadow jumping mouse (see Figure 2.2).

Several existing transmission line structures are currently located within the 100-year floodplains (based on the Federal Emergency Management Agency [FEMA] maps) (Department of Housing and Urban Development 1986; FEMA 1991, 1994) of various drainages that are potential habitat and proposed critical habitat (Table 2.3).

The Colorado portion of the AU-CH transmission line segment is also located within the overall range of the Preble's meadow jumping mouse; however, according to the CDOW, the closest occupied range is approximately 4 miles west of the existing/proposed transmission line (Figure 2.3) (CDOW 2006). During the 2004 general habitat surveys conducted by TRC Mariah biologists, a single 14-acre parcel of potential Preble's meadow jumping mouse habitat was identified within the project ROW. This area is located approximately 13 miles north of the Ault Substation (see Figure 2.3). While no site-specific surveys were conducted at the time, the habitat is suitable for the presence of Preble's meadow jumping mouse.

2.4.2.2 Critical Habitat

As a result of listing Preble's meadow jumping mouse, the USFWS has identified and designated critical habitat under the ESA for the mouse, and several of these critical habitat areas in Wyoming are located near the proposed CH-MM and AU-CH transmission line. A portion of the existing/proposed transmission line crosses critical habitat twice on North Lodgepole Creek and once on Lodgepole Creek (Figure 2.4).

The closest critical habitat in Colorado is located approximately 25 miles west of the AU-CH segment in central Larimer County, Colorado. No critical habitats for Preble's meadow jumping mouse have been designated in Weld County, Colorado. Therefore, the proposed project would have no adverse affects on critical habitat for Preble's meadow jumping mouse in Colorado.

Table 2.3 Existing Structures Known to be Located or Possibly Located in Potential Preble's Mouse Habitat.

Milepost (Structure Number)	Drainage
Known to be located in potential habitat	
119 (114-7)[1]	Lodgepole Creek
117, 118 (113-5, 114-5)[1]	North Lodgepole Creek
127, 128 (123-3, 123-8)	North Fork Crow Creek
130, 131 (126-3, 126-4, 126-5, 126-6)	South Crow Creek
134, 135 (130-3, 130-10)	Tributary to Crow Creek
Possibly located in potential habitat	
112 (107-9, 107-10)	Meadow Fork Branch of Horse Creek
106, 107 (102-4, 102-5)	Horse Creek
124 (120-4, 120-5)	Unnamed drainage
125 (121-3, 121-4)	Unnamed drainage

[1] Proposed critical habitat.

2.4.3 Analysis of Effects

2.4.3.1 Likely Direct Effects

The proposed project could disturb riparian habitats that could affect the Preble’s meadow jumping mouse.

With the successful implementation of the mitigation measures described in Section 1.1.9, the proposed project would have no direct impacts on Preble’s meadow jumping mouse and/or their habitat or their critical habitats.

2.4.3.2 Likely Indirect Effects

The proposed project would have negligible indirect effect on Preble’s meadow jumping mouse because the proposed project would result in no topsoil removal or salvage operations and thus would have negligible impacts on soil and vegetation resources and Preble’s meadow jumping

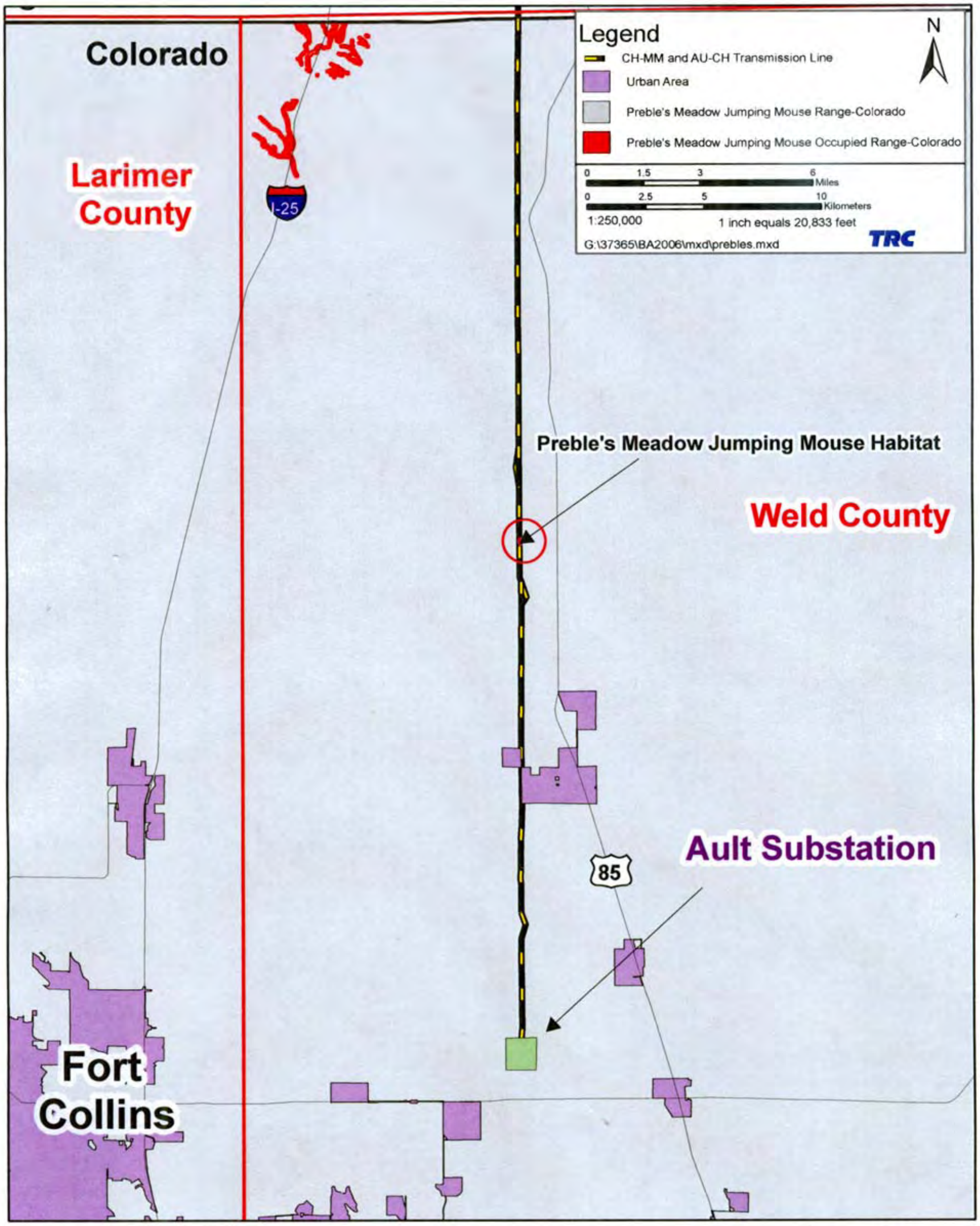

Figure 2.3 Potential Preble's Meadow Jumping Mouse Habitat, Proposed AU-CH Segment, Northeastern Colorado.

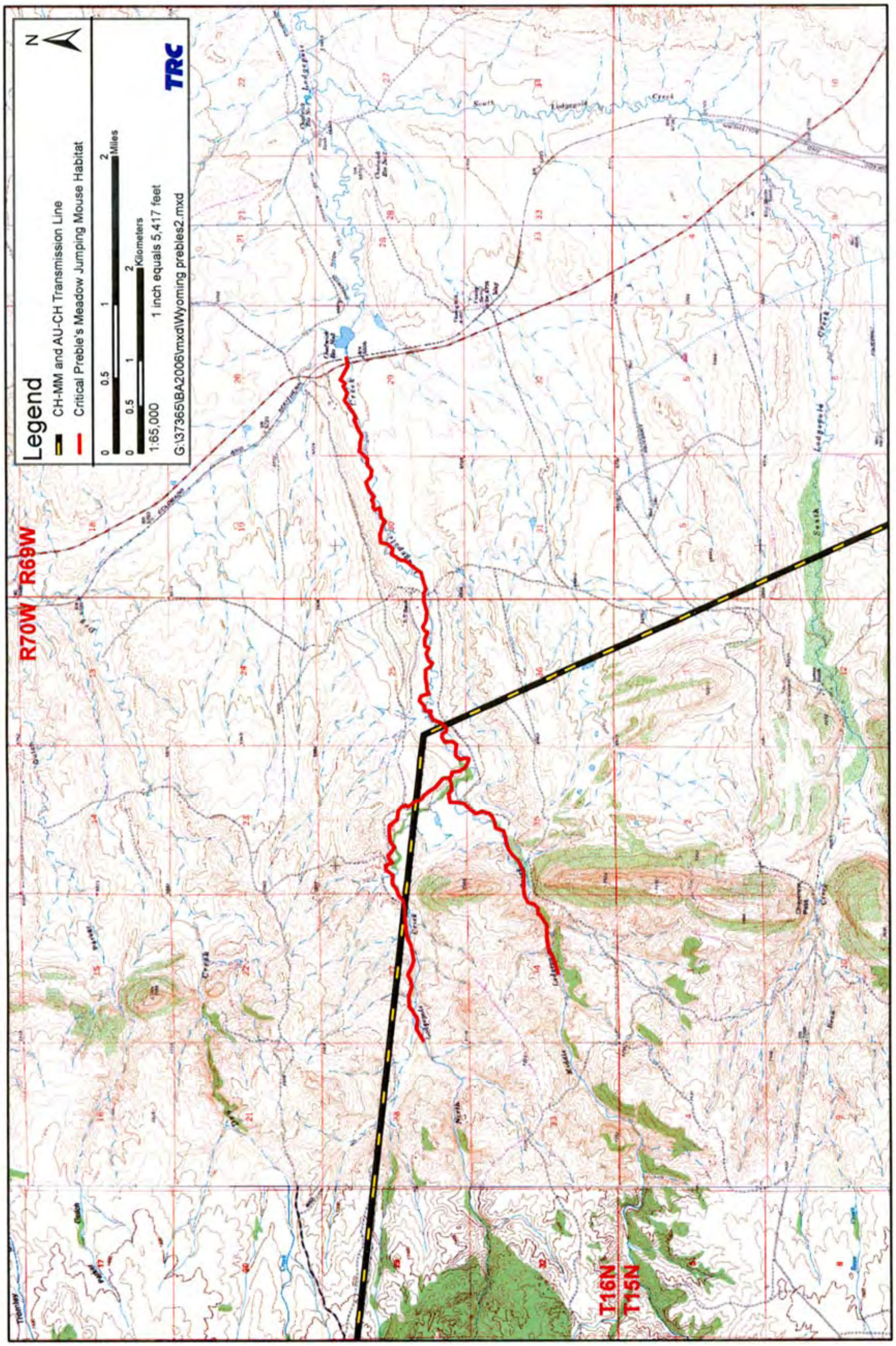

Figure 2.4 Critical Preble's Meadow Jumping Mouse Habitat, Proposed CH-MM Transmission Line Project, Southeastern Wyoming.

mouse and/or its habitat or its critical habitats. With the implementation of the mitigation measures described in Section 1.1.9, the proposed project would have minimal indirect impacts on Preble's meadow jumping mouse and/or its habitat or its critical habitats.

2.4.4 Likely Cumulative Impacts

Cumulative effects to the threatened Preble's meadow jumping mouse, its habitat, and/or critical habitat would not be significant or important because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in impacts beyond those that already exist or are addressed in this BA.

2.4.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed.

Based on the discussions presented above, the proposed project would likely have minimal or no direct or indirect effects or cumulative effects on Preble's meadow jumping mouse. Therefore, the proposed project **may affect but is not likely to adversely affect** Preble's meadow jumping mouse and/or their habitat. The project would also cross Preble's meadow jumping mouse critical habitat; however, the proposed project would **not adversely modify critical habitat**. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Preble's meadow jumping mouse would be insignificant.

2.5 BALD EAGLE

2.5.1 Current Species Status

Protection was initially provided for bald eagles through the passage of the *Bald Eagle Protection Act of 1940* and the *Migratory Bird Treaty Act*. In 1973, the bald eagle was listed as endangered under the ESA. In response, the *Recovery Plan for the Pacific Bald Eagle* (USFWS

1986) was developed to address the recovery of bald eagles in Washington, Oregon, California, Nevada, Idaho, Wyoming, and Montana. On July 12, 1995, a final rule to downlist the bald eagle from endangered to threatened in the lower 48 states was published, and on July 6, 1999, the USFWS proposed delisting the bald eagle from the ESA.

2.5.2 Habitat Description

The proposed project area is located outside of any identified bald eagle nesting or roosting areas; however, one bald eagle nest is located within 2 miles of the project ROW. This bald eagle nest (active in 2003) is located 0.85 mile northeast of the existing and proposed CH-MM segment, approximately 16 miles west of the Snowy Range Substation in Albany County (BLM 2003) (Figure 2.5). One bald eagle was also observed in December 2002 approximately 0.5 mile south of the existing transmission line adjacent to the Seminoe Reservoir near the Miracle Mile Substation. The closest known bald eagle nest site to the proposed transmission line in Colorado is located approximately 12 miles south of the Ault Substation (Figure 2.6) (CDOW 2006).

Bald eagle nesting habitat has been described by Wright and Escano (1986) and the Greater Yellowstone Bald Eagle Working Group (1996). In Wyoming, nest sites generally are distributed around the periphery of lakes and reservoirs at least 80.0 acres in area and along forested corridors within 1.0 mile of major rivers (Greater Yellowstone Winter Wildlife Working Group 1999). Bald eagles display strong fidelity to a breeding area and often to a specific nest site. Nests are most commonly constructed in multi-layered mature or old growth stands of large-diameter trees of a variety of species, including Douglas fir, ponderosa pine, cottonwood, larch, and spruce. In Wyoming, nests are often located in tall tree stands of 3.0 acres, with large emergent trees and snags providing important nesting and perching habitat. Bald eagles usually nest as close to maximum foraging areas as possible, generally avoiding areas of human activity (Harmata and Oakleaf 1992).

Nest building and nest repair may occur during every season in well-established territories; however, it most commonly occurs during the autumn, late winter, and early spring. Alternate

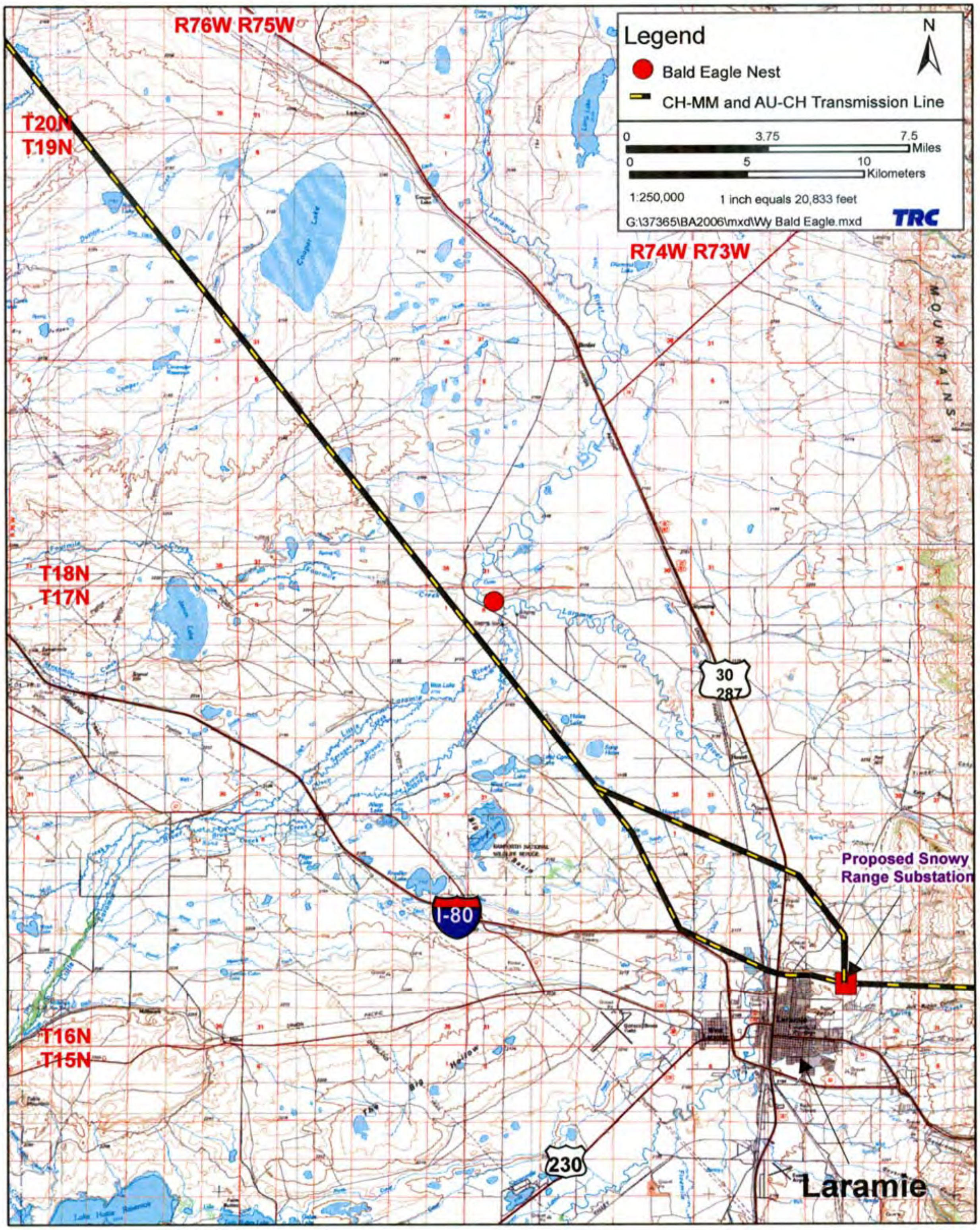

Figure 2.5 Bald Eagle Nest Site, Proposed CH-MM Segment, Southeastern Wyoming.

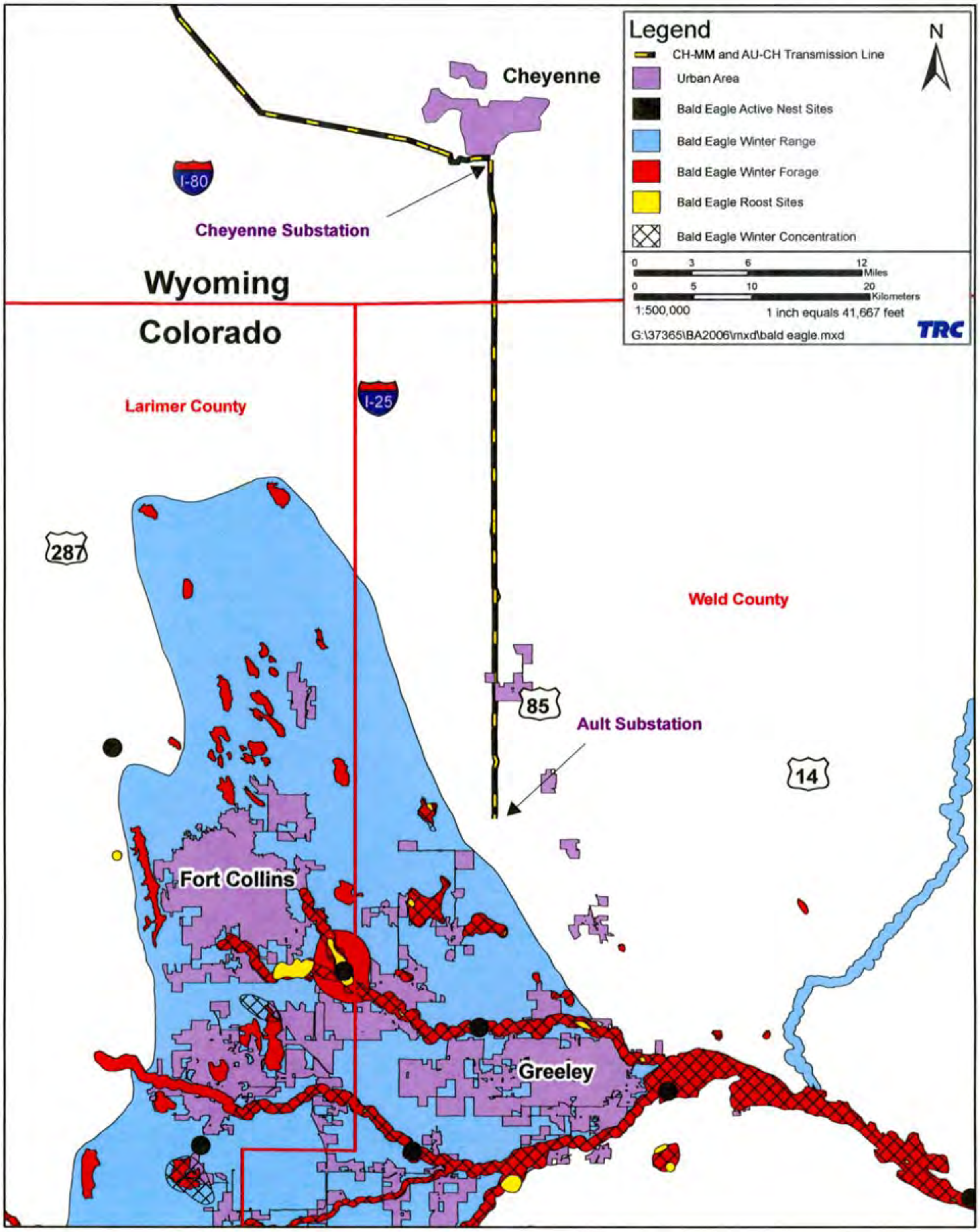

Figure 2.6 Bald Eagle Nest Sites and Habitats, Proposed AU-CH Segment, Northeastern Colorado.

nests may be present in a breeding area. In Wyoming, egg laying occurs as early as February 7 and as late as mid-April. Incubation spans 31 to 35 days and may be influenced by ambient temperatures (i.e., longer in colder temperatures) (Alt 1980; Harmata and Oakleaf 1992). Hatching occurs from mid-March to mid-May and the nesting period lasts 11 to 14 weeks. Once fledged, young are dependent on adults for 6 to 10 weeks (Gerrard et al. 1974; McClelland 1992; Wood 1992).

Adults may or may not migrate during the winter. Bald eagle winter habitat generally is associated with areas of open water where fishes and/or waterfowl congregate (Greater Yellowstone Winter Wildlife Working Group 1999; Stahlmaster 1987). Wintering bald eagles occupy unfrozen portions of lakes and free-flowing rivers and may occupy upland areas where ungulate carrion, game birds, and lagomorphs are available (Swenson et al. 1986).

Although winter roosting habitat is not necessarily close to water or food sources, the availability of an abundant source of food (usually associated with open water or abundant carrion), of foraging perches, and of secure night roost sites away from human activities are important habitat components (Greater Yellowstone Winter Wildlife Working Group 1999). Preferred habitat includes a protected microclimate that provides shelter from harsh weather and is characterized by tall trees that extend above the forest canopy and locations that provide clear views and open flight paths (Stahlmaster 1987).

According to the BLM and WGFD (personal communication, March 14, 2006, with Heath Kline, BLM, Rawlins, Wyoming, and Andrea Cerovski WGFD, Lander, Wyoming), there are no identified bald eagle winter concentration areas or roost areas within 5 miles of any segment of the CH-MM segment. However, the CDOW has identified bald eagle winter range and numerous bald eagle winter concentration and roots areas near the AU-CH segment (CDOW 2006) (see Figure 2.6). A large bald eagle winter area is located west of the transmission line in Colorado, and the closest bald eagle winter roost and/or concentration area is located approximately 3 miles west of the Ault Substation in Weld County (see Figure 2.6).

Bald eagles are opportunistic feeders and will prey on fish, waterfowl, lagomorphs and other ground-dwelling mammals, and ungulate carrion. They also will steal prey from other eagles, osprey, otters, and other species (Stahlmaster 1987; Stangl 1994). In Wyoming, fish make up the majority of prey items obtained by breeding pairs (Harmata and Oakleaf 1992). Ungulate carrion is a major winter food source (Harmata and Oakleaf 1992). An available prey base may be the most important factor determining bald eagle nesting habitat suitability (Greater Yellowstone Winter Wildlife Working Group 1999), nesting density (Dzus and Gerrard 1993), and productivity (Hansen 1987).

2.5.3 Analysis of Effects

2.5.3.1 Likely Direct Effects

The proposed project could adversely affect one bald eagle nest site identified within 0.85 mile of the proposed transmission line in Wyoming. To minimize impacts to nesting bald eagles, Western would survey the nest site prior to construction in the immediate area. With the implementation of mitigation measures described in Section 1.1.9, no impacts to nesting bald eagles would occur.

The closest bald eagle winter range, winter concentration area, and winter forage areas are located approximately 3 miles west of the Ault Substation (see Figure 2.6). There are no identified bald eagle winter ranges, winter concentration areas, or winter forage areas within 10 miles of the proposed transmission line in Wyoming. Therefore, the proposed project would have no effect on winter range, winter concentration areas, or winter forage areas.

Raptor electrocution and collision hazards are potential direct impacts to bald eagles; however, the potential for these impacts would be similar to the existing transmission structures and would be minimized by proper planning and construction design (APLIC 1994, 1996). One of the primary ways to minimize the potential for electrocution of large raptors is to ensure adequate separation of energized conductors, ground wires, and other metal hardware. A minimum of 5.0 ft of space between conductors is recommended to eliminate the chance of bald eagle electrocution by simultaneous skin-to-skin contact with two conductors (APLIC 1996; Olendorff et al. 1981). Although wing-tip to wing-tip contact would still be possible, dry feathers are generally poor conductors and, under most circumstances, the risk of electrocution will be minimal. When adequate separation of conductors and potential conductors is not possible, insulation should be used. The proposed transmission structures exceed 5-ft space requirements between conductors and are generally not considered an electrocution hazard to raptors, including bald eagles. Discouraging raptors from perching and nesting on active power line facilities can also minimize risk of electrocution. This can be accomplished by 1) avoiding the removal of natural perches (i.e., large trees and snags), where possible, and/or providing attractive alternate perches or nesting platforms nearby; 2) constructing elevated perches on poles to separate perching birds from hazardous portions of the power line; and/or 3) use of raptor antiperching/antinesting devices (APLIC 1994, 1996).

The potential for collision hazard is typically localized and is influenced by avian use patterns, topography, visibility, and avian species size and maneuverability (APLIC 1994). Generally, raptors are infrequently reported as victims of power line collision (Olendorff and Lehman 1986) because they are highly maneuverable, have excellent visual acuity, and often soar or hover when foraging (APLIC 1994). The risk of collisions appears to increase in areas where power lines cross flight corridors frequently used by birds (e.g., riparian corridors). Although the proposed transmission line segment located in Colorado may span riparian corridors used by foraging bald eagles, existing transmission lines are already in place in these areas, and there have been no reports of bald eagle collisions with power lines. Standard mitigation measures commonly used to minimize avian collisions with power lines include aerial marking spheres, spiral vibration dampers, and bird flight diverters. Potential for collision may also be reduced by locating the line at or below the height of nearby trees and minimizing the removal of nearby trees that extend above the level of the power line. Large birds will gain altitude to clear the tree line, thereby avoiding the power line (Thompson 1978; Raevel and Tombal 1991). By NESC definition, hazard trees are typically those that extend above the power line and are near enough to come into contact with the line if toppled by wind or lightning. Thus, in the immediate vicinity of the corridor, the transmission line would likely need to be higher than adjacent trees.

With successful implementation of the mitigation measures described in Section 1.1.9, the proposed project will likely have minimal direct effects on bald eagles that use the transmission line corridor.

2.5.3.2 Likely Indirect Effects

Indirect effects to bald eagles as a result of the proposed project include displacement of foraging bald eagles due to construction activities. However, displacement effects would be minimal because the proposed corridor does not contain bald eagle roosts, winter concentration areas, or specific winter foraging areas, although year-round foraging may occur anywhere along the corridor. Potential impacts to foraging habitat will be mitigated by timely implementation of reclamation and stabilization measures specified in the proposed project.

Impacts to large conifers and other trees may affect bald eagle perch and prey availability. Suitable perches (i.e., large snags and trees) occur along the CH-MM segment, but there are no identified winter ranges, roosts, forage, or concentration areas near this segment of the project. There are few suitable perches along the AU-CH segment. Because an existing power line is already in place, tree removal, tree topping, and limb removal would be limited to trees that pose a hazard to operation and maintenance of the transmission line. Therefore, the proposed project would likely have negligible indirect effects on bald eagles and/or their habitat.

2.5.4 Likely Cumulative Impacts

Cumulative effects to the threatened bald eagle and/or its habitat would not be significant or important because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in impacts beyond those that already exist or are addressed in this BA.

2.5.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed.

Direct, indirect, or cumulative impacts from the proposed project would have minimal direct, indirect, or cumulative effects on bald eagles and the proposed CH-MM and AU-CH transmission line project **may affect but is not likely to adversely affect** bald eagles and/or their habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to bald eagles would be discountable or insignificant.

2.6 MEXICAN SPOTTED OWL

2.6.1 Current Species Status

The Mexican spotted owl is one of three subspecies of spotted owls that are found in the U.S., and it was first listed under the ESA in 1993. The Mexican spotted owl is currently designated as threatened in its entire range, and critical habitat has been designated in Arizona, Colorado, New Mexico, Texas, and Utah.

2.6.2 Habitat Description

Mexican spotted owls are found in a variety of habitats within its range. This species primarily nests in closed canopy forests and rocky canyons, and it will nest in stick nests built by other birds, on debris platforms in trees, and in tree cavities. The Mexican spotted owl begins courtship in March, and the first eggs are typically laid in early April. Females incubate the eggs for approximately 30 days. The nest is active and maintained until fall when the young owls will leave the natal area. Mexican spotted owls normally feed on small nocturnal mammals, birds, bats, and arthropods. Little is known about the habitat range of foraging owls except that they forage a wider range of habitats than they use for roosting.

Based on available information, northern Colorado is the northern limit of potential range for the Mexican spotted owl (CDOW 2006). The Mexican spotted owl does not range into Wyoming, and there have been no sightings in the state (WGFD 2004). A limited amount of potential habitat for the Mexican spotted owl was modeled by the CDOW (2006), and it is located in the northwestern corner of Weld County, Colorado. The AU-CH transmission line segment intersects this potential habitat; however, during the 2004 general habitat surveys conducted by TRC Mariah biologists did not identify any suitable Mexican spotted owl habitat along the AU-CH transmission line segment.

Critical habitats have been designated by the USFWS for the Mexican spotted owl in Colorado, Utah, Arizona, and New Mexico. However, the closest Mexican spotted owl critical habitat is located approximately 80 miles southwest of the Ault Substation.

2.6.3 Determination of Effects

Because no Mexican spotted owls have been documented and no habitat occurs along the transmission line corridor, the project will have **no effect** on Mexican spotted owls.

2.7 WYOMING TOAD

2.7.1 Current Species Status

Wyoming toad (*Bufo hemiophrys baxteri*) was first listed under the ESA in 1984, and it is currently designated as endangered in its entire range (USFWS 2006). As part of the recovery plan for the species, a captive breeding was initiated in 1992, and by 1994, the species was extinct in the wild and only captive populations remained. Since 1992, thousands of Wyoming toad tadpoles have been released into Lake George and Rush Lakes in the Hutton National Wildlife Refuge and Mortenson Lake in the Mortenson National Wildlife Refuge in south-central Albany County, Wyoming (USFWS 1998a) (Figure 2.7). Currently, no critical habitats have been designated for the Wyoming toad.

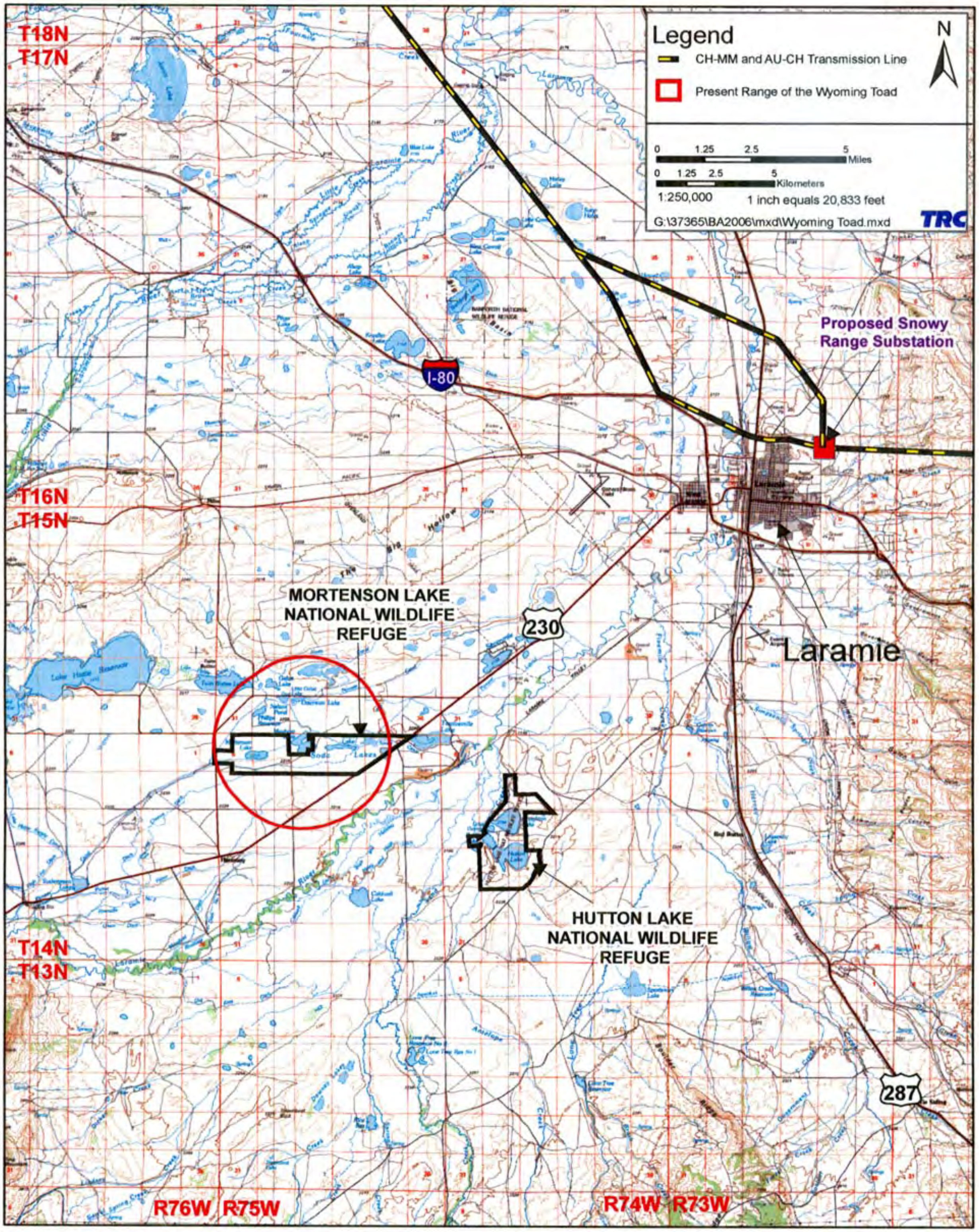

Figure 2.7 Wyoming Toad Re-introduction/Release Areas, Proposed CH-MM Transmission Line Segment, Southeastern Wyoming.

2.7.2 Habitat Description

Wyoming toad historically occupied floodplains, ponds, and seepage lakes associated with shortgrass communities occurring between 7,000 and 7,500 ft AMSL within the Laramie Basin of south-central Wyoming (USFWS 2006), and all collections and observations of the Wyoming toad have taken place within 30 miles of Laramie, Wyoming. The Wyoming toad does not occur in Colorado (CDOW 2006).

Up until the early 1970s, the Wyoming toad inhabited the floodplains of the Laramie rivers and the margins of ponds in the Laramie Basin. Declines in both range and abundance were noted during the mid-1970s and continued through 1994. The decline appears to be related to presence of amphibian chytrid fungus in Mortenson Lake. This fungus has been implicated in declines and extinctions of numerous amphibia species worldwide, and analysis indicates that the fungus has been present in Mortenson Lake since at least 1989. Prolonged drought, predation, pesticide use, irrigation practices, and lack of genetic diversity may also limit the abundance and distribution of the Wyoming toad (Baxter et al. 1982; Hammerson 2004; USFWS 1998a).

2.7.3 Determination of Effects

Since the project is over 12 miles from Hutton Lake and over 14 miles from Mortenson Lake, the two areas with Wyoming toad populations, the project would have **no effect** on this species (personal communication, 2004, with Kathleen Erwin, USFWS).

2.8 BLOWOUT PENSTEMON

2.8.1 Current Species Status

Blowout penstemon was first listed under the ESA in 1987 and is currently designated as endangered in its entire range (USFWS 2006). There is no critical habitat designated for blowout penstemon.

2.8.2 Habitat Description

Blowout penstemon is a potential resident in "blowouts"--sparsely vegetated depressions in active sand dunes created by wind erosion that typically form on windward sandy slopes where the vegetation has been removed or disturbed. Currently, the species is primarily found in western Nebraska and one county in Wyoming (Fertig 2000a). The plant's current range in Wyoming consists of the Ferris dunes area in northwestern Carbon County where the plant is restricted to two habitat types: on steep northwest-facing slopes of active sand dunes with less than 5% vegetative cover and on north-facing sandy slopes on the lee side of active blowouts with 25 to 40% vegetative cover (USFWS 2006). Blowout penstemon is not likely to be found in Colorado (USFWS 2005; Spackman et al. 1997).

Based on the results of general habitat surveys conducted by TRC Mariah biologists between December 2002 and August 2004, no suitable habitat for blowout penstemon was identified along the CH-MM and AU-CH corridor.

2.8.3 Determination of Effects

Because no known blowout penstemon or its habitat has been identified within the proposed project area, the project would have no direct, indirect, or cumulative effects on the blowout penstemon and would have **no effect** on blowout penstemon and/or its habitat.

2.9 UTE LADIES'-TRESSES

2.9.1 Current Species Status

Ute ladies'-tresses was first listed under the ESA in 1992 and is currently designated as threatened in its entire range (USFWS 2006). No critical habitat has been designated for Ute ladies'-tresses.

2.9.2 Habitat Description

Currently, Ute ladies'-tresses is found from western Nebraska, southeastern Wyoming, north-central Colorado, northeastern and southern Utah, east-central Idaho, southwestern Montana, and north-central Washington (Fertig 2000b). Ute ladies'-tresses is a perennial plant and a member of the orchid family that inhabits moist streambanks, wet meadows, and abandoned stream channels at elevations of 1,780-6,800 ft (Fertig 2000b; Spackman et al. 1997). Where it occurs in ephemeral drainages, groundwater is typically shallow (i.e., within approximately 18 inches of the ground surface) (personal communication, March 16, 2000, with Pat Deibert, USFWS, Cheyenne, Wyoming; personal communication, March 22, 2000, with Walt Fertig, WNDD, Laramie, Wyoming). This species has only four occurrences in Wyoming; all discoveries were made between 1993 and 1997 in northwestern Converse, southeastern Niobrara, southwestern Goshen, and north-central Laramie Counties (Fertig 2000b). The closest occurrence of Ute ladies'-tresses to the project area was recorded in north-central Laramie County (approximately 30 miles north of the proposed ROW) (Fertig 2000b). Occurrences of Ute ladies'-tresses have been documented in eastern Larimer County, Colorado, approximately 30 miles west of the proposed ROW (Spackman et al. 1997).

2.9.3 Analysis of Effects

2.9.3.1 Likely Direct Effects

Direct effects could include the inadvertent destruction of Ute ladies'-tresses plants during surface-disturbing activities and from traffic. With the implementation of the mitigation measures described in Section 1.1.9, no direct effects would occur.

2.9.3.2 Likely Indirect Effects

Indirect effects could include the temporary habitat loss due to surface disturbance. With the implementation of the mitigation measures described in Section 1.1.9, no indirect effects would occur.

2.9.4 Likely Cumulative Impacts

The proposed project would have no cumulative effects to the threatened Ute ladies'-tresses and/or their habitat because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in any impacts beyond those that already exist.

2.9.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed. The proposed CH-MM and AU-CH transmission line project would have **no effect** Ute ladies'-tresses and/or their habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Ute ladies'-tresses would be insignificant.

2.10 COLORADO BUTTERFLYPLANT

2.10.1 Current Species Status

Colorado butterflyplant was first listed under the ESA in 2000 and is currently designated as threatened in its entire range (USFWS 2006). In addition, the USFWS designated critical habitat for the Colorado butterflyplant in southeastern Wyoming in 2005 (USFWS 2006).

2.10.2 Habitat Description

2.10.2.1 General Habitat

The Colorado butterflyplant is a perennial herb and is found in southeastern Wyoming, north-central Colorado, and extreme western Nebraska between elevations of 5,000 and 6,400 ft AMSL (USFWS 2006). This threatened plant species is a potential resident on subirrigated alluvial level or slightly sloping floodplains and drainage bottoms at elevations of 5,000 to 6,400 ft. Colonies are often found in low depressions or along bends in wide meandering stream channels. Known populations of this species are restricted to approximately 1,700 acres of habitat in Laramie County, Wyoming; western Kimball County, Nebraska; and Weld County, Colorado, within the drainages of both the North and South Platte Rivers.

In Wyoming, a predictive distribution model was prepared for Colorado butterflyplant by the Wyoming Gap program, and, according to the predictive model, the CH-MM segment crosses approximately 13 segments of potential Colorado butterflyplant habitat (Figure 2.8).

The AU-CH segment is also located within the overall range of the Colorado butterflyplant (USFWS 2006). During the 2004 general habitat surveys conducted by TRC Mariah biologists, a single 14-acre parcel of potential Colorado butterflyplant habitat was identified within the project ROW. This area is located approximately 13 miles north of the Ault Substation (Figure 2.9). While no site-specific surveys were conducted at the time, the habitat is suitable for the presence of Colorado butterflyplant.

2.10.2.2 Critical Habitat

In accordance with a court-approved settlement agreement, the USFWS in 2005 designated 3,538 acres of final critical habitat along approximately 51 miles of stream within Platte and Laramie Counties, Wyoming, for the threatened Colorado butterflyplant. Private lands comprise 90% of the designated critical habitat, with state lands comprising the remaining 10%. The designated areas are adjacent to Tepee Ring Creek, Bear Creek, Little Bear Creek, Horse Creek, Lodgepole Creek, Diamond Creek, and Lone Tree Creek, Wyoming. Some areas in Wyoming were excluded from the final critical habitat designation because the USFWS and private landowners developed conservation agreements that will provide conservation benefits for the plant. Similarly, critical habitat in Weld County, Colorado, was excluded because the city of Fort Collins signed a conservation agreement with the USFWS.

The project would not intersect any Colorado butterflyplant critical habitat; however, it is located within approximately 200 ft of critical habitat in southeastern Wyoming (see Figure 2.8).

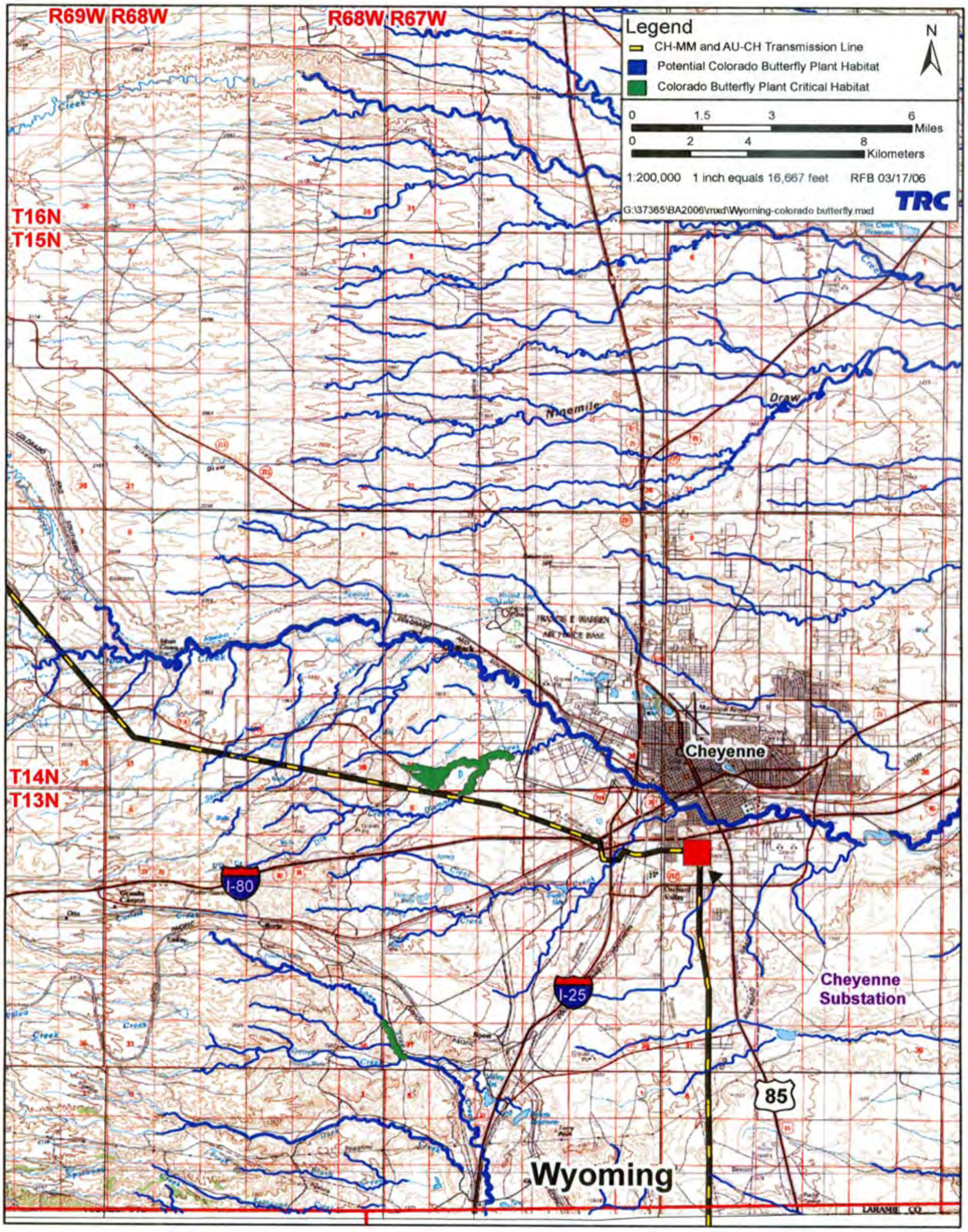

Figure 2.8 Colorado Butterflyplant Potential and Critical Habitat, CH-MM and AU-CH Transmission Line, Southeastern Wyoming and Northeastern Colorado.

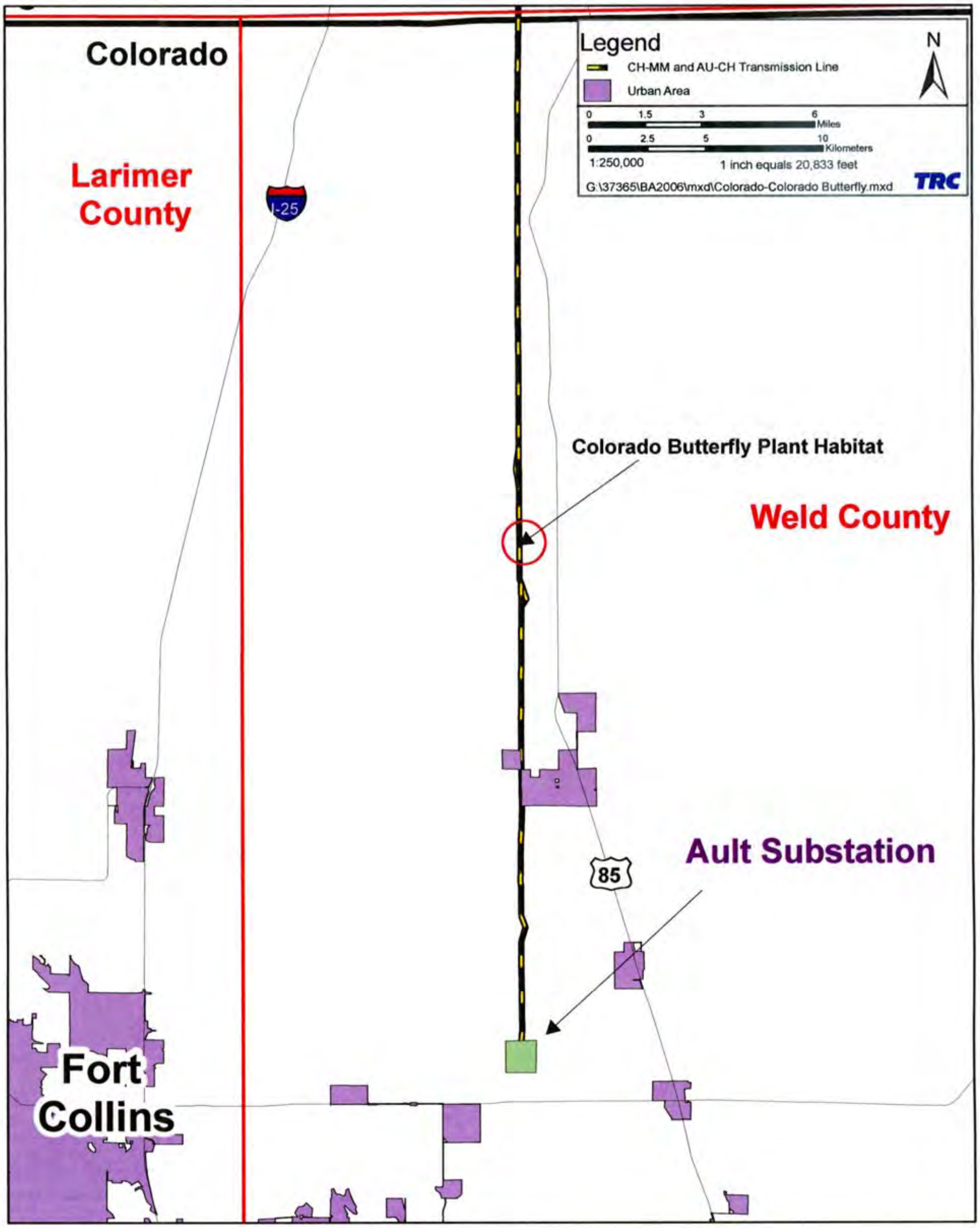

Figure 2.9 Colorado Butterflyplant Potential Habitat, Proposed AU-CH Transmission Line Segment, Northeastern Colorado.

2.10.3 Analysis of Effects

2.10.3.1 Likely Direct Effects

Direct effects could include the inadvertent destruction of Colorado butterflyplant individuals during surface-disturbing activities and from traffic. With the implementation of the mitigation measures described in Section 1.1.9, no direct effects would occur.

2.10.3.2 Likely Indirect Effects

Indirect effects could include the temporary habitat loss due to surface disturbance. The proposed project is located outside of and would not disturb any designated critical habitat for the Colorado butterflyplant. With the implementation of the mitigation measures described in Section 1.1.9, no indirect effects would occur.

2.10.4 Likely Cumulative Impacts

The proposed project would have no cumulative effects to the Colorado butterflyplant and/or their habitat because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in any impacts beyond those that already exist.

2.10.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed. The proposed CH-MM and AU-CH transmission line project would have **no effect** on the Colorado butterflyplant, its habitat, or its critical habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Colorado butterflyplant would be insignificant.

2.11 PLATTE RIVER SPECIES

The USFWS has identified five threatened or endangered species that may occur in the downstream riverine habitats of the South Platte River in Nebraska. These species include the endangered whooping crane, endangered interior least tern, the threatened piping plover, the endangered pallid sturgeon, and the threatened western prairie fringed orchid. These species could be adversely affected by surface water depletions (consumption) from the South Platte River system as a result of project-related activities (USFWS 2005, 2006). These species (threatened or endangered) do not occur along the ROW and thus would not be directly impacted.

In 2002, the USFWS prepared a biological opinion in its *Revised Intra-Service Section 7 Consultation for Federal Agency Actions Resulting in Minor Water Depletions to the Platte River System* (USFWS 2002). The biological opinion covers any federal actions other than wetland restoration projects that result in average annual depletions of 25 acre-ft or less to the Platte River system, regardless of location within the basin. The effects analysis and conservation measures apply only to federally listed species, designated whooping crane habitat, and proposed critical habitat for the piping plover along the Platte River in Nebraska.

For the CH-MM and AU-CH project, the only water use anticipated would be for soil compaction during construction of the Snowy Range substation. Compaction water would be obtained from the Laramie municipal water, which comes from the Laramie River and the Casper formation. The amount of water to be used is currently unknown but would be less than 25 acre-feet; however, any amount of water taken from the Platte River system for use on this project would be considered a depletion and would require section 7 consultation with the USFWS. Therefore, once the amount of water is known, Western would initiate consultation with the FWS on that amount.

In accordance with the above-referenced biological opinion, “Federal agencies should continue to conclude that each action resulting in a depletion of 25 acre-feet or less per year to the Platte River system **may adversely affect** the whooping crane, interior least tern, piping plover, and/or pallid sturgeon, designated whooping crane critical habitat, and proposed piping plover critical habitat" (USFWS 2002). No mitigation is required because the U.S. Forest Service and the USFWS have provided funds to the Fish and Wildlife Foundation account for the purposes of offsetting the adverse effects of federal agency actions resulting in minor water depletions, such as the CH-MM and AU-CH project.

2.12 MOUNTAIN PLOVER

The mountain plover is not currently listed under the ESA, and the USFWS has withdrawn the proposal to list the mountain plover under the ESA. The USFWS is no longer required to review project-related impacts to the mountain plover; however, mountain plover was included in the USFWS letter concerning the project (2006), and the USFWS continues to encourage federal agencies and their applicants to continue providing protection for this species as it remains protected under the *Migratory Bird Treaty Act*. To that end, the project ROW was surveyed for potential mountain plover habitat by TRC Mariah biologists between December 2002 and August 2004, and potential mountain plover habitat was identified along the entire CH-MM and AU-CH corridor (Figure 2.10).

With implementation of survey and avoidance mitigation measures discussed in Section 1.1.9, the proposed CH-MM and AU-CH transmission line project would have no direct, indirect, or cumulative effects on mountain plover.

2.13 GREATER SAGE-GROUSE

The USFWS has determined that the greater sage-grouse (*Centrocercus urophasianus*) is unwarranted for listing under the ESA at this time. However, the USFWS continues to have concerns regarding sage-grouse population status, trends, and threats, as well as concerns for other sagebrush-obligate species (USFWS 2006).

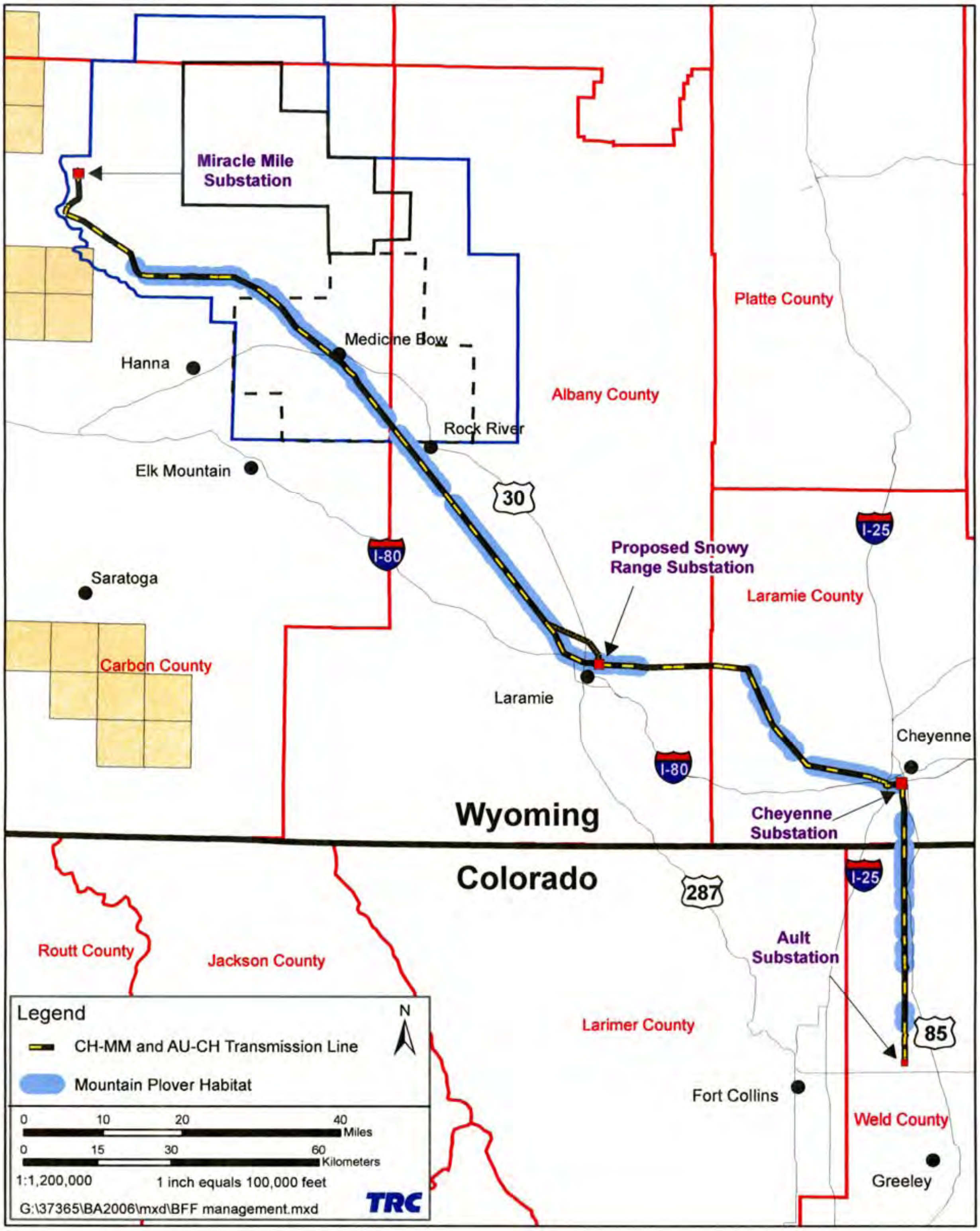

Figure 2.10 Potential Mountain Plover Habitat, Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

Based on 2005 data from the WGFD, there are six greater sage-grouse leks within 2 miles of the proposed ROW in Wyoming, and all of these leks are located between the Miracle Mile Substation and the Snowy Range Substation (Figure 2.11) (WGFD 2005). According to the CDOW, there are no greater sage-grouse leks, brooding areas, or production areas within any part of Weld or Larimer Counties, Colorado (CDOW 2006).

With implementation of survey and avoidance mitigation measures discussed in Section 1.1.9, the proposed CH-MM and AU-CH transmission line project would have minimal direct, indirect, or cumulative effects on greater sage-grouse.

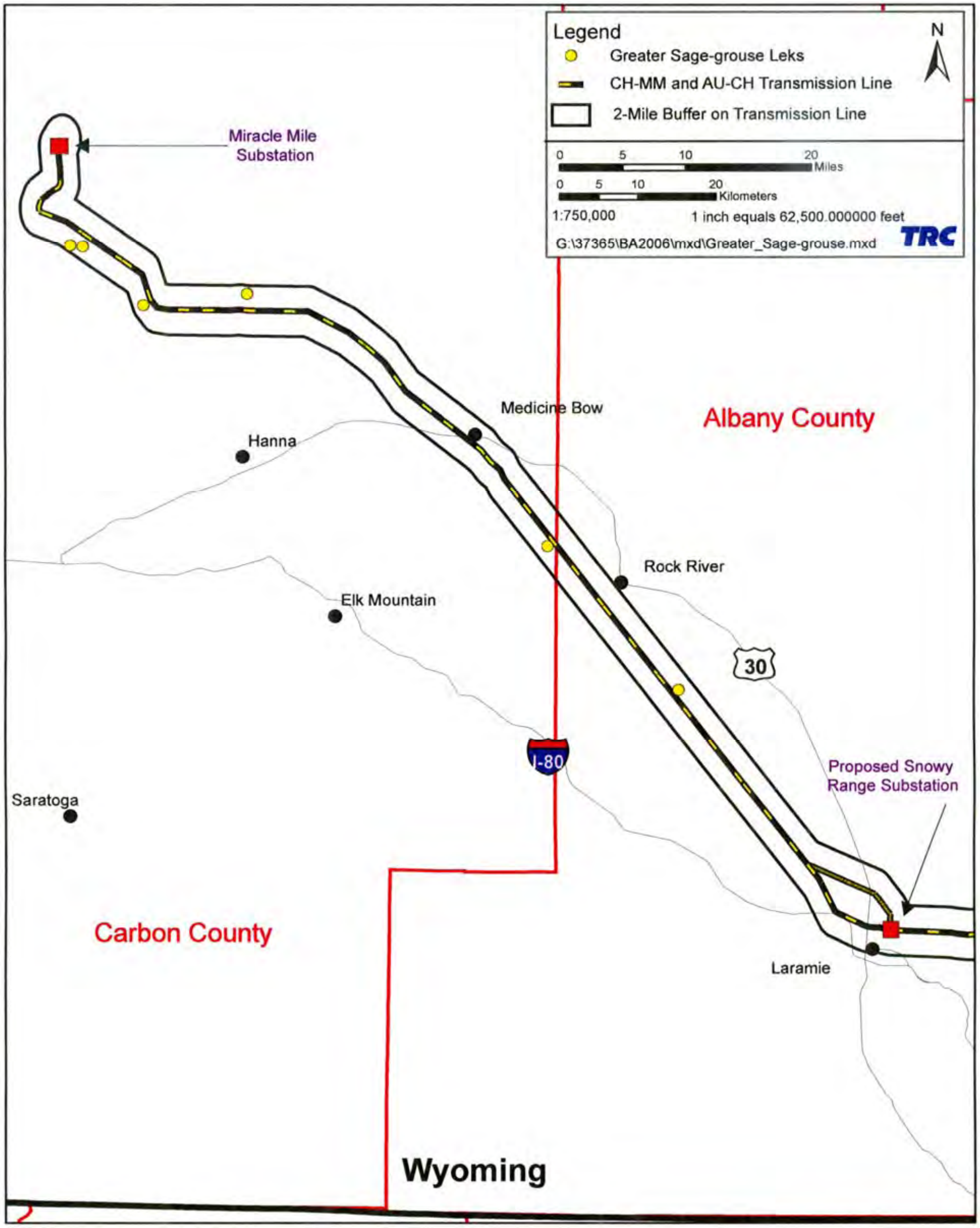

Figure 2.11 Greater Sage-grouse Leks, Proposed CH-MM Segment, Southeastern Wyoming.

3.0 CONTACTS/CONTRIBUTORS/PREPARERS

Table 3.1 lists persons contacted during the preparation of this BA, and Table 3.2 lists preparers of this BA.

Table 3.1 Persons Contacted During Preparation of the Biological Assessment.

Agency or Organization	Individual(s)	Title	Contribution
Western	Rodney Jones	Environmental Specialist	Description of Proposed Action
U.S. Fish and Wildlife Service	Kathleen Erwin	Wildlife Biologist	Species information and mitigation measures
	Mary Jennings	Wildlife Biologist	Information on Preble's meadow jumping mouse
Bureau of Land Management	Heath Kline	Wildlife Biologist	Information on bald eagles
Wyoming Game and Fish Department	Andrea Cerovski	Wildlife Biologist	Information on bald eagles
	Martin Grenier	Wildlife Biologist	Information on black-footed ferrets

Table 3.2 Persons that Contributed to the Preparation of the Biological Assessment.

Firm/Company	Name	EA Responsibility
TRC Mariah Associates Inc.	Scott Kamber	BA Preparation, Quality Control
	Karyn Coppinger	Review and Revision per Western's Comments
	Jan Hart	Data Gathering, Quality Assurance
	Randy Blake	Data Gathering, GIS Cartography
	Genial DeCastro	Document Production, Quality Control
	Tamara Linse	Document Production, Technical Editing
	Jessica Robinson	Document Production, Technical Editing

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Appendix F. Concurrence Letters from the State Historic Preservation Officer

ARTS. PARKS. HISTORY.

Wyoming Department of State Parks and Cultural Resources

WYOMING STATE HISTORIC PRESERVATION OFFICE
BARRETT BUILDING, 2301 CENTRAL AVE, CHEYENNE, WY 82002
(307) 777-7697

February 23, 2006

Joel K Bladow, Regional Manager
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, CO 80539-3003

Re: Western Area Power Administration, Rocky Mountain Region (Western) Cheyenne-Miracle Mile 115-kV Transmission Line located in Carbon, Albany, and Laramie Counties, Wyoming. (SHPO File # 1202JKW004)

Dear Mr. Bladlow:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). After the reviewing the proposed project we would like to offer the following comments:

We concur with your finding that the following sites are eligible for listing on the National Register of Historic Places (NRHP) and will not be adversely affected by the project as planned:

Lincoln Highway (48AB152)
Union Pacific Railroad (48AB358)
Pioneer Canal (48AB835)
48CR8034
48CR8036
Denver to Fort Laramie Road (48LA2789)

We do not concur with your determination of eligibility for the Cheyenne Miracle-Mile Transmission Line (48AB1192, 48CR7262, 48LA1402) and recommend that it remain eligible for listing on the NRHP. However, it will not be adversely affected by the project as planned.

We concur that site 48CR8041 is currently unevaluated for NRHP eligibility and that testing will be needed prior to a determination of eligibility and project affect.

The following prehistoric sites have been recommended as either eligible or not eligible for the NRHP under Criteria D. However, subsurface testing will be needed at these locations prior to a determination of eligibility and project affect:

48AB1404
48AB1408
48CR8031
48CR8033
48CR8042

The following historic sites have been recommended as either eligible or not eligible for the NRHP under Criteria A and/or Criteria D. However, determinations of eligibility under Criteria D require subsurface testing at these locations prior to a determination of eligibility and project affect:

48AB1395 (The Hill Homestead)
48AB1397 (The Stickney Homestead)
48AB1399 (The Herman Homestead)

We are unable to provide our comment regarding eligibility and project effect at the present time for the following sites and we recommend the following sites remain unevaluated pending further testing and/or information. An explanation of our concerns is listed below:

- The North Canal (48AB625): Your consultation letter notes that the North Canal segments are "not eligible for listing on the NRHP" yet the consultant believes that segments of the North Canal "appear to retain the qualities of integrity of location, design, setting, and feeling" and that the "segments investigated by Alpine do not appear to be contributing portions of the feature." When documenting linear sites, terms such as "contributing" and "non-contributing" are used to reference segments of linear sites (National Historic Trails, roads, canals) that are eligible for listing on the National Register of Historic Places. This is a contradiction and needs to be accurately clarified.

- Site 48AB1394: This site has been documented as a "newly discovered site" according to the documentation provided in the report. During our review, SHPO staff was unable to find the Wyoming Cultural Properties Form that is required for our review of newly discovered sites. Additionally, according to the overview of site 48AB1394, as noted in the text of the report, the consultant has said this site is not eligible for listing on the NRHP. This is inconsistent with the consultant's site number request that was provided to our Cultural Records office which cites that the consultant believes this site is eligible for listing on the NRHP. We request that the Wyoming Cultural Properties Form be submitted for our review.

Lastly, the remaining sites do not meet the criteria of eligibility for the NRHP and no further work or protective measures are necessary.

We will comment on site eligibilities and project affect on the aforementioned cultural resources when we have reviewed the requested documentation. Please refer to SHPO project #1202JKW004 on any future correspondence regarding this project. If you have any questions, please contact Richard L. Currit, Senior Archaeologists at 307-777-5497 or me at 307-777-6179.

Sincerely,

Matt Bennett

Matt Bennett
Historic Preservation Specialist, Sr.

COLORADO HISTORICAL SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

August 25, 2005

Joel K. Bladow
Project Manager
Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, CO 80539-3003

Re: A Cultural Resource Inventory for the Western Area Power Administration Cheyenne-Ault 115kV Transmission Line Rebuild Project, Laramie County, Wyoming and Weld County, Colorado and the Snowy Range Substation, Albany County, Wyoming. (CHS #46174)

Dear Mr. Bladow;

Thank you for your correspondence dated August 19, 2005 and received by our office on August 22, 2005 regarding the above-mentioned project.

After review of the submitted information, we concur with the finding of *not eligible* for the National Register of Historic Places for the resources listed below.

- 5WL.2619
- 5WL.4832
- 5WL.2602
- 5WL.4831
- 5WL.2597
- 5WL.2618
- 5WL.2616
- 5WL.2621
- 5WL.4829

We concur with the finding of *eligible* for the National Register of Historic Places for the resources listed below.

- 5WL.1969.30
- 5WL.4830

At this time, we do not concur with the finding of *eligible* for the National Register of Historic Places for resource 5WL.2622. In our opinion, a finding of *needs data* is appropriate for this resource. We believe that additional research needs to be completed to determine what questions about marginal farming could be answered by the potential subsurface remains.

After review of the finding of effect, we do not concur with the finding of *no historic properties* affected under Section 106 of the National Historic Preservation Act. In our opinion, the project will result in a finding of *no adverse effect* under Section 106 of the National Historic Preservation Act. Historic properties are located within the Area of Potential Effects and the management procedures for resource 5WL.2622 have not been finalized.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CRF 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

for Georgianne Contiguglia
State Historic Preservation Officer

CHS 46174
August 25, 2005

44174 AP

Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, CO 80539-3003

RECEIVED

AUG 22 2005

CHS/OAHP

AUG 19 2005

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

Dear Ms. Contiguglia:

457 Western Area Power Administration, Rocky Mountain Region (Western) is proposing to rebuild its Cheyenne-Ault 115-kV Transmission Line located in Laramie County, Wyoming and Weld County, Colorado and to construct a new substation in Albany County, Wyoming.

In consideration of the effect of the undertaking on cultural resources as per 36 CFR 800.5, a cultural resource survey of the area was conducted by Alpine Archaeological Consultants, Inc. The survey entitled "*A Cultural Resource Inventory for the Western Area Power Administration Cheyenne-Ault 115-kV Transmission Line Rebuild Project, Laramie County, Wyoming and Weld County, Colorado and the Snowy Range Substation, Albany County, Wyoming*" is enclosed for your review. The survey identified 13 sites and one isolated find occurrence. The sites included five prehistoric archaeological sites and eight historic sites. Two sites are in Wyoming and 11 sites are in Colorado. The isolated find is located in Colorado. Twelve sites are located on private lands. Another site, the transmission line, crosses Bureau of Land Management (BLM) lands, but it is owned by Western.

Based on the cultural resource report and management recommendations, Western has determined that there are **no historic properties affected**. The submission of this documentation will fulfill Western's responsibilities under Section 106 of the National Historic Preservation Act, as amended (NHPA).

I. Description of the Undertaking - Western is proposing to rebuild the aging Cheyenne-Ault 115-kV Transmission Line between Cheyenne, Wyoming and Ault, Colorado. The new line will be constructed at 230-kV. The transmission line is 35 miles in length and trends from north to south, beginning on the east side of Cheyenne and terminating at the Ault Substation in Ault, Colorado. The line crosses Laramie County in Wyoming mainly on privately held lands (six miles) but also crosses .1 mile of public land administered by the Bureau of Land Management's (BLM) Rawlins Field Office (RFO), and 1.5 miles of State of Wyoming/split with private lands. In Weld County, Colorado, the line crosses 21.5 miles of private lands and six miles of State of Colorado/split with private lands. The project also included six miles of associated access roads of which five are on private land and one is on State of Colorado land. In terms of area, the

survey covered 163.4 acres of private land in Wyoming, 18.2 acres of State of Wyoming land, 1.4 acres of BLM-RFO land, 634 acres of private land in Colorado, and 72.6 acres of State of Colorado land. Two locations were surveyed for the new substation. Both are on privately owned lands and total 46.7 acres for location A and 50.6 acres for location B.
The existing transmission line consists of wood-pole H-frame structures suspending standard copper conductors. In most cases, the existing wooden poles will be mechanically pulled from the ground. In instances where the existing poles cannot or should not be pulled, the poles will be cut off just below ground level. New structures will be either single pole steel, lattice steel or wooden H-frame. Portions of the new line will be a double circuit 230kV and 115kV. The new structures may not necessarily be placed in the same locations as the existing structures. Some minor access road maintenance may also be necessary. This could include road blading and graveling of small sections of existing access roads.

II. Methodology and Reporting - A Class I literature review was conducted between June 23, 2004, at the State Historic Preservation Office (SHPO) in Laramie, Wyoming, and July 1, 2004, at the Office of Archaeology and Historic Preservation in Denver, Colorado. Twenty-five previously documented sites lie within one-half mile of the transmission line and access roads. Site types included prehistoric camps, lithic scatters, historic habitations, roads, railroads, and ditches. Seven surveys had been conducted within one-half mile of the project. The majority of the surveys were related to energy and communication development.

In addition to a search of the state site files, historic maps from the General Land Office (GLO) were also inspected. The GLOs dated from 1868-1875.

An intensive field examination of the project area was also conducted. The survey corridor width for the Cheyenne-Ault line was 200 feet, 100 feet on either side of the line. This corridor was surveyed in 30 meter transects in Wyoming, and 15 meter transects in Colorado. Access road corridor width varied, based on land ownership. On public land, survey width was 100 feet, centered on the roadway, with survey transects of 15 meters on either side of the roadway. On private land, the survey corridor was restricted to 50 feet centered on the road, dictating transects of 7.5 meters. Roads crowned and ditched or paved were not surveyed. The two substation locations were surveyed in 30 m transects.

III. Resources Located, Identified, and Evaluated - The Class III survey of the project area resulted in the documentation of three new cultural resources, 10 site re-evaluations, and one isolated find. A summary of all sites is presented in Table 4 of the enclosed report. Sites described as "officially eligible" have been so designated by the Wyoming or Colorado SHPO. Sites described as "eligible" or "not eligible" reflect recommendations by the recorder. All sites are located on private lands.

Newly Recorded Sites

45WL4830: This site consists of nine tipi rings and two rock alignments that may be tipi rings. There is a potential for buried deposits both inside and outside the rings. The site is recommended as eligible under criteria d. The site will be avoided by the project. The closest structure is 50 feet from one of the tipi rings. A temporary fence will be set up to insure avoidance of the site.

5WL4831: This site is the remains of a single tipi ring. Because the site is in an area of deflation, the site has low potential for subsurface remains. It is recommended as not eligible.

5WL4832: This site is an historic artifact scatter and habitation. The site is in a plowed field and has been extensively damaged by farming activities. Therefore, the site is recommended as not eligible.

Previously Recorded Sites

48LA1237: Denver-Pacific Railroad Grade. This is a one-mile segment of the abandoned railroad grade. It was previously determined officially eligible under criteria a. This site will not be affected.

5WL1969.30: Union Pacific Railroad. It was officially determined eligible in 1993 and this segment was officially determined to be contributing in 1998. It will not be affected by the project.

5WL2597: This site is a small lithic scatter comprised of six flakes. It was officially determined not eligible in 1998. Western concurs with this recommendation.

5WL2602: This is an historic habitation with an artifact scatter. The site was officially determined not eligible.

5WL2616: This is a small lithic scatter that was recommended not eligible in 1998. Western concurs with this recommendation.

5WL2618: This site consist of burned rock and four artifacts. The site was officially determined not eligible in 1998. Western concurs with this recommendation.

5WL2619: This site is an abandoned earthen ditch. It was officially determined not eligible in 1998. Western concurs with this recommendation.

5WL2621: This is a concentration of four stone piles. The site was officially determined not eligible in 1998. Western concurs with this recommendation.

5WL2622: is an historic habitation site consisting of stone piles, artifacts, and four structures. It was officially determined not eligible in 1998; however, at that time, it was only recorded as consisting of 10 stone piles. This re-visit of the site identified much more extensive features. The site represents a homestead from about 1908-1915. It is recommended the site is eligible under criteria d. Although a structure and access road are located within the site's boundary, all features will be avoided. Therefore, the values that make it eligible will not be affected.

48LA1403: Cheyenne-Ault 115-kV Transmission Line. The Cheyenne-Ault line has been documented by Associated Cultural Resource Experts (Schweigert 1998) as part of a region-wide study of Western facilities. The site, which is owned by Western, crosses private, State and Federal land. The site was recommended eligible, but has had no formal SHPO review. An in-use transmission line is one of the site types that the Wyoming SHPO has determined should not be recorded. The historic integrity of the transmission line is also in question, and numerous components have been replaced and upgraded over the years. Although Table 4 recommends the site as recommended eligible, Western's recommendation is that the transmission line be considered ineligible for inclusion on the National Register of Historic Places (NRHP).

IV. Effects Determination and Compliance Decision - Of the thirteen sites, two are officially eligible, two are recommended as eligible, five are officially not eligible, one was previously officially determined not eligible but is recommended as eligible, and three are recommended as not eligible. Effects determinations are the responsibility of the lead agency. Western has considered the nature of the undertaking and the presence of historic properties that may possess the qualities of integrity and meet at least one of the other criteria necessary to be considered for inclusion in the NRHP. Western has determined that there **are no historic properties affected.** Western considers that the stipulations of Section 106 of the National Historic Preservation Act, as amended, and the implementing regulations, 36 CFR 800, have been satisfied.

Please provide comments on the report within 30 calendar days, as well as comments on eligibility and effect for sites located within your jurisdiction. Western will wait for your comments prior to consulting with the SHPO. If you have any questions about this project, please telephone Rodney Jones, Rocky Mountain Region Office, Loveland, Colorado, at (970) 461-7371 or Mary Barger, Corporate Services Office, at (720) 962-7253.

Sincerely,

Joel K Bladow

Joel K. Bladow
Regional Manager

Enclosure

Schweigert, Kurt P.
1998 *Historical Evaluation, Western Area Power Administration Facilities, Colorado, Wyoming, Nebraska, Utah.* Prepared for the Western Area Power Administration.

ARTS. PARKS. HISTORY.

Wyoming Department of State Parks and Cultural Resources

WYOMING STATE HISTORIC PRESERVATION OFFICE

Claudia Nissley

State Historic Preservation Officer

BARRETT BUILDING, 2301 CENTRAL AVE, CHEYENNE, WY 82002

(307) 777-7697

8/29/05

J0000
J0700
J0400

August 23, 2005

Joel Bladow
Regional Manager
Western Area Power Administration
Rocky Mountain Customer Service Region
P. O. Box 3700
Loveland, CO 80539-3003

Re: Western Area Power Administration Cheyenne-Ault 115 kV Transmission Line Rebuild Project (SHPO File # 0805AKY011)

Dear Mr. Bladow:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that site 48LA1403, the Cheyenne-Ault Transmission Line, is not eligible for listing in the National Register of Historic Places and will not be adversely affected by the project as planned. We also concur with your finding that the Denver-Pacific Railroad Grade (48LA1237) will not be adversely affected by the project as planned.

We recommend the Department of Energy, Western Area Power Administration allow the project to proceed in accordance with state and federal laws subject to the following stipulation:

> If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency must be contacted, and the materials evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

This letter should be retained in your files as documentation of a SHPO concurrence on your finding of no historic properties adversely affected. Please refer to SHPO project #0805AKY011 on any future correspondence regarding this project. If you have any questions, please contact Audrey York at 307-777-6357.

Appendix G. Correspondence from the U.S. Fish and Wildlife Service Regarding the Endangered Species Act Requirement

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

In Reply Refer To:
ES-61411/W.35/WY07FA0023
ES-6-WY-07-F004

NOV 08 2006

Joel Bladow
Regional Manager
Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, Colorado 80539

Dear Mr. Bladow:

Thank you for your letters of October 12, and November 3, 2006, received in our office on October 13 and November 6, regarding the proposed upgrade to the existing 181-mile, 115-kilovolt transmission line located in portions of Carbon, Albany and Laramie counties, Wyoming, and Weld County, Colorado. The project consists of two segments: the 146-mile Cheyenne to Miracle Mile (CH-MM) segment extending from north-central Carbon County to a substation in south-central Laramie County and the 35-mile Ault to Cheyenne (AU-CH) segment extending from north-western Weld County to the substation in south-central Laramie County.

The U.S. Fish and Wildlife Service (Service) has previously provided comments on this project in our letters of November 6, 2002 (WY6404), September 7, 2004 (WY 8707), February 15, 2006 (WY10125), and August 3, 2006. Based on the interstate nature of this project, the Service's Cheyenne Field Office has coordinated with the Service's Colorado Field Office and together we have agreed that the Cheyenne Field Office would take the lead to assist you in compliance with the Endangered Species Act of 1973, as amended (Act, 16 U.S.C. 1531 *et seq.*). You have requested consultation pursuant to section 7(a)(2) of the Act for your determination of effects to listed and proposed species from this project. The Service is providing you with concurrence based on the information you have provided.

Your letter states that Western Area Power Administration (Western) proposes to remove any existing power poles within suitable Preble's meadow jumping mouse (*Zapus hudsonius preblei*) habitat by cutting poles at ground level and avoiding any ground disturbing activities.

Additionally, Western is committed to avoid new construction in suitable habitat by placing power poles outside of habitat and spanning it. The Service concurs with your determination of "may affect, not likely to adversely affect" based on your commitments.

Your letter states that a known bald eagle (*Haliaeetus leucocephalus*) nest is located within 0.85-mile of the transmission line in Wyoming. However, the Service concurs with your "may affect, not likely to adversely affect" determination for bald eagle based on your commitments to: (1) conduct presence/absence surveys within 1-mile of proposed activities prior to commencement of the project; (2) to prohibit construction activities within 1-mile of an active nest from February 1 to July 31; and, (3) design and construct the transmission line in conformance with *Suggested Practices for Protection of Raptors on Powerlines* (Avian Power Line Interaction Committee 1996) to eliminate the potential for raptor electrocution.

Platte River Depletions

It has been determined the proposed action, located in Carbon, Albany, and Laramie County, Wyoming, constitutes a new project that will result in an annual depletion of 1.4 acre-feet (af) to both the central and lower reaches of the Platte River. Since 1978, the Service has consistently taken the position in its section 7 consultations that Federal agency actions resulting in water depletions to the Platte River system are likely to jeopardize the continued existence of one or more federally-listed threatened or endangered species and adversely modify or destroy designated and proposed critical habitat. During the course of informal consultations with a number of Federal agencies, the Service learned that there are over 1,000 proposed projects which will deplete water from the Platte River system and require formal section 7 consultation. It was also determined that the vast majority of these projects would likely result in individual depletions of 25 af or less per year. To effectively deal with such an anticipated large workload, it was necessary for the Service to develop a streamlined approach which meets the requirements of section 7 for offsetting the adverse effects of each Federal agency action resulting in a minor water depletion.

An intra-Service section 7 consultation was conducted in coordination with those Federal agencies whose actions may result in minor water depletions of 25 af or less per year to the Platte River system. This led to the issuance of a biological opinion by the Service on June 13, 1996, which provides reasonable and prudent alternatives to avoid the likelihood of jeopardy to federally-listed species and adverse modification or destruction of designated critical habitat occurring along the Platte River. A revision of the 1996 biological opinion made a no jeopardy determination contingent upon the implementation of conservation measures (formerly reasonable and prudent alternatives in the 1996 biological opinion) by the Federal agencies. To satisfy the requirements of the ESA, Federal action agencies and project proponents (i.e., Federal and non-Federal) are provided conservation measures described in the 2002 revised biological opinion furnished to your agency. Consequently, the Service concurs with your determination that the proposed project may adversely affect the federally-listed whooping crane, interior least tern, piping plover, pallid sturgeon, and designated whooping crane and piping plover critical habitat.

As a result of section 7 consultation on the proposed Federal action described in the first paragraph, it is our understanding that you intend to take advantage of the conservation measures authorizing the use of funds in a National Fish and Wildlife Foundation account to offset the project-related impacts to Platte River fish and wildlife resources. Therefore, it has been calculated that $ 301.88 will be debited from the Foundation account to use in restoring Platte River habitat as described in the referenced biological opinion.

The Service hereby agrees that the process described above will serve to offset the project-related impacts and avoid the likelihood of adverse effects to federally-listed species and their designated and proposed critical habitat. Any need for reinitiation of formal consultation on this proposed action is outlined in the CONCLUSION section of the referenced (2002) biological opinion.

Section 9 of ESA, as amended, prohibits taking harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the Agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of an incidental take statement. The Service does not anticipate that the proposed action will result in any incidental take of any threatened or endangered species. Therefore, no incidental take is authorized.

This concludes formal and informal consultation pursuant to the regulations implementing the Act. This project should be re-analyzed if new information reveals effects of the action that may affect listed or proposed species or designated or proposed critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to a listed or proposed species or designated or proposed critical habitat that was not considered in this consultation; and/or, if a new species is listed or critical habitat is designated that may be affected by this project.

Other Determinations

You have made a "no effect" determination for Mexican spotted owl (*Strix occidentalis lucida*), black-footed ferret (*Mustela nigripes*), Wyoming toad (*Bufo baxteri*), blowout penstemon (*Penstemon haydenii*), Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*) , and Ute ladies'-tresses (*Spiranthes diluvialis*). Concurrence for no effect determinations is not required under the Act; however, the Service appreciates information regarding the status of these species in the project area.

We appreciate your efforts to ensure the conservation of endangered, threatened, and candidate species and migratory birds. If you have further questions regarding our letter or your responsibilities under the Act, please contact Kathleen Erwin of my staff at the letterhead address or phone (307) 772-2374, extension 228.

Sincerely,

Mary B. Jennings

for Brian T. Kelly
Field Supervisor
Wyoming Field Office

cc: FWS, Regional Office, Lakewood, CO, (M. Butler)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (V. Stelter)
WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)

Reference

Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines – The State of the Art in 1996. Edison Electric Institute and the Raptor Research Foundation, Washington, D.C.

Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, CO 80539-3003

November 3, 2006

Mr. Brian Kelly
Wyoming Field Supervisor
Ecological Services
U.S. Fish and Wildlife Service
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

SUBJECT: Determination of Affect and Request for Consultation for Endangered, Threatened, Proposed, and Candidate Platte River Species for the Cheyenne-Miracle Mile and Ault-Cheyenne Transmission Line Rebuild Project

Dear Mr. Kelly:

The Western Area Power Administration (Western), an agency of the U.S. Department of Energy (DOE), is the lead federal agency for a project to rebuild and upgrade the existing 181-mile long 115-kilovolt (kV) Cheyenne to Miracle Mile (CH-MM) and Ault to Cheyenne (AU-CH) transmission line to a 230-kV transmission line system. The CH-MM and AU-CH transmission line runs from south-central Wyoming to northeastern Colorado. The proposed CH-MM and AU-CH transmission line project would rebuild and upgrade the existing transmission line and is designed to increase electrical transmission capacity and system reliability.

A list of federally listed threatened and endangered species, those proposed for listing, and candidates potentially occurring in the project area was developed based on information provided by the U.S. Fish and Wildlife Service's (USFWS's) Colorado Field Office, County Threatened, Endangered, Proposed, and Candidate (TEP&C) List (2005), and in a letter to Joel Bladow, Western Area Power Administration, dated February 15, 2006, (ES-61411/W.35/WY-10125). Western has previously consulted with the USFWS on non-Platte River Species in an October 12, 2006, correspondence. This consultation addresses the following Platte River Species:

Common Name	Scientific Name	Federal Status [1]	Potential State Occurrence [2]	Potential Occurrence Within the Immediate Project Area [3]
PLATTE RIVER SPECIES				
Piping plover	*Charadrius melodus*	T	N/A	PR
Interior least tern	*Sterna antillarum*	E	N/A	PR
Whooping crane	*Grus americana*	E	N/A	PR
Pallid sturgeon	*Scaphirhynchus albus*	E	N/A	PR

Western prairie fringed orchid	*Platanthera praeclara*	T	N/A	PR

[1] Federal status:
E = listed as federally endangered.
T = listed as federally threatened.
[2] N/A = not applicable.
[3] Species occurrence: CR=not present in project area but occur downstream of the project area with the Platte River system.

The Platte River species (whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid) could be adversely affected by surface water depletions (consumption) from the Platte River system as a result of project-related activities. These species (threatened or endangered) do not occur along the transmission line rights-of-way and thus would not be directly impacted. During construction of the CH-MM and AU-CH project, an estimated 1.4 acre feett (456,260 gallons) of water would be required. During the operational life of the project, no sustained water use would be necessary. There is no water supply to the proposed new substation.

In 2002, the USFWS prepared a biological opinion in its *Revised Intra-Service Section 7 Consultation for Federal Agency Actions Resulting in Minor Water Depletions to the Platte River System* (USFWS 2002). The biological opinion covers any federal actions other than wetland restoration projects that result in average annual depletions of 25 acre feet or less to the Platte River system, regardless of location within the basin. The effects analysis and conservation measures apply only to federally listed species, designated whooping crane habitat, and proposed critical habitat for the piping plover along the Platte River in Nebraska.

In accordance with the above-referenced biological opinion, "Federal agencies should continue to conclude that each action resulting in a depletion of 25 acre feet or less per year to the Platte River system may adversely affect the whooping crane, interior least tern, piping plover, and/or pallid sturgeon, designated whooping crane critical habitat, and proposed piping plover critical habitat" (FWS 2002). Since the CH-MM and AU-CH project would result in a depletion of less than 25-acre ft/year, Western has determined that the project may adversely affect these species and critical habitats. Western hereby requests consultation with the USFWS and requests the USFWS to debit the Fish and Wildlife Foundation account to off-set project impacts on downstream Platte River species.

U.S. Fish and Wildlife Service. 2002. Revised intra-service Section 7 consultation for the federal agency actions resulting in minor water depletions to the Platte River System. Memorandum to Assistant Regional Director, Ecological Service, Region 6, from Regional Director. 77 pp. + append.

If you are in agreement with our determinations, we would appreciate a letter of concurrence from the USFWS. If you have any questions or comments regarding this project, please telephone Rodney Jones at (970) 461-7371. Thank you for your assistance and cooperation on this project.

Sincerely,

Joel K. Bladow
Regional Manager

cc:

Ms. Kathleen Erwin
Fish and Wildlife Biologist
Wyoming Field Office
U.S. Fish and Wildlife Service
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

bcc:

D. Swanson, A7400, Lakewood, CO
M.Barger, A7400, Lakewood, CO
J. Bridges, A7400, Lakewood, CO
J0400
J0420
J5000
J5640
J5641

Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, CO 80539-3003

OCT 12 2006

Mr. Brian Kelly
Wyoming Field Supervisor
Ecological Services
U.S. Fish and Wildlife Service
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

SUBJECT: Determination of Affect and Request for Consultation for Endangered, Threatened, Proposed, and Candidate Species for the Cheyenne-Miracle Mile and Ault-Cheyenne Transmission Line Rebuild Project

Dear Mr. Kelly:

The Western Area Power Administration (Western), an agency of the U.S. Department of Energy (DOE), is the lead federal agency for a project to rebuild and upgrade their existing 181-mile long 115-kilovolt (kV) Cheyenne to Miracle Mile (CH-MM) and Ault to Cheyenne (AU-CH) transmission line to a 230-kV transmission line system. The CH-MM and AU-CH transmission line runs from south-central Wyoming to northeastern Colorado. The proposed CH-MM and AU-CH transmission line project would rebuild and upgrade the existing transmission line and is designed to increase electrical transmission capacity and system reliability.

A list of federally listed threatened and endangered species, those proposed for listing, and candidates potentially occurring in the project area was developed based on information provided by the U.S. Fish and Wildlife Service's (USFWS's) Colorado Field Office County Threatened, Endangered, Proposed, and Candidate (TEP&C) List (2005) and in a letter to Joel Bladow, Western Area Power Administration, dated February 15, 2006 (ES-61411/W.35/WY-10125). The species in both Wyoming and Colorado addressed in the CH-MM and AU-CH biological assessment (BA) are presented in Table 1. Based on the results of the analysis of effects presented in the BA, a summary of the likely adverse effects of the Proposed Action on TEP&C species is presented in Table 2.

In the event any TEP&C species are found during construction of the proposed CH-MM and AU-CH transmission line, project-specific surface disturbance would be halted and the USFWS will be notified immediately. Section 7 consultation between Western and USFWS will be re-initiated prior to restarting construction activities in the specific area.

The proposed right-of-way (ROW) is located outside of areas requiring black-footed ferret surveys (USFWS 2004). Re-introduced black-footed ferrets have not been documented in the vicinity of the CH-MM corridor, and, because the Wyoming Game and Fish Department (WGFD) anticipates little potential for impacts from the project, surveys are not recommended by the WGFD for ferrets along the corridor prior to construction. Furthermore, the black-footed ferret management plan requires the WGFD to remove ferrets from areas where construction projects could impact individuals (WGFD) and Bureau of Land Management 1991). Since no ferrets have been documented in or near the corridor and since it would be the responsibility of the WGFD to remove any such ferrets, the black-footed ferret would not be impacted. The project would have **no effect** on black-footed ferrets.

To minimize impacts to Preble's meadow jumping mouse, Western would conduct an inventory prior to construction to determine if any existing structures occur in potential Preble's habitat; these structures would be cut off at ground level to avoid disturbing Preble's meadow jumping mouse habitat. Therefore, the proposed project would have no direct impacts on Preble's meadow jumping mouse, their habitat, or their critical habitats. The proposed project would have negligible indirect effects on Preble's meadow jumping mouse because no topsoil removal or salvage is proposed, and thus there would be only negligible impacts on soil and vegetation resources and Preble's meadow jumping mouse, its habitat, or its critical habitats. Cumulative effects to the threatened Preble's meadow jumping mouse, its habitat, and/or critical habitat would not be significant because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in impacts beyond those that already exist. The proposed project **may affect but is not likely to adversely affect** Preble's meadow jumping mouse and/or their habitat. The project would also cross Preble's meadow jumping mouse critical habitat; however, the proposed project would **not adversely modify critical habitat**. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Preble's meadow jumping mouse would be insignificant.

The proposed project could adversely affect one bald eagle nest site identified within 0.85 mile of the proposed transmission line in Wyoming. To minimize impacts to nesting bald eagles, Western will conduct surveys prior to the initiation of construction-related activities within 1.0 mi of the construction corridor. No construction-related activities shall occur within 1.0 mi of any active bald eagle nest from February 1 through July 31. If the nest is determined to be active, Western will immediately notify the USFWS and a raptor mitigation plan will be developed and implemented with the concurrence of the USFWS, the BLM, and the WGFD. No impacts to nesting bald eagles would occur.

The closest bald eagle winter range, winter concentration area, and winter forage areas are located approximately 3 miles west of the Ault Substation. There are no identified bald eagle winter ranges, winter concentration areas, or winter forage areas within 10 miles of the proposed transmission line in Wyoming. Therefore, the proposed project would have no effect on winter range, winter concentration areas, or winter forage areas.

Raptor electrocution and collision hazards are potential direct impacts to bald eagles; however, the potential for these impacts would be similar to the existing transmission structures and would be minimized by proper planning and construction design (Avian Power Line Interaction Committee [APLIC] 1994, 1996). The transmission line would be designed with a minimum of 5 ft of space between conductors to eliminate the chance of bald eagle electrocution. The project would also be designed in conformance with APLIC recommendations for minimizing collisions so that the potential for bald eagle collision would be low. Western would also install bird flight diverters at the Rock Creek crossing on both the rebuilt CH-MM transmission line and the existing Happy Jack-Miracle Mile transmission line to mitigate the potential for future raptor collisions at the Rock Creek crossing.

Indirect effects to bald eagles as a result of the proposed project include displacement of foraging bald eagles due to construction activities. However, displacement effects would be minimal because the proposed corridor does not contain bald eagle roosts, winter concentration areas, or specific winter foraging areas, although year-round foraging may occur anywhere along the corridor. Potential impacts to foraging habitat would be mitigated by timely implementation of reclamation and stabilization measures.

Impacts to large conifers and other trees may affect bald eagle perch and prey availability. Suitable perches (i.e., large snags and trees) occur along the CH-MM segment, but there are no identified winter ranges, roosts, forage, or concentration areas near this segment of the project. There are few suitable perches along the AU-CH segment. Because an existing power line is already in place, tree removal, tree topping, and limb removal would be limited to trees that pose a hazard to operation and maintenance of the transmission line. Therefore, the proposed project would likely have negligible indirect effects on bald eagles and/or their habitat.

Cumulative effects to the threatened bald eagle and/or its habitat would not be significant because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in impacts beyond those that already exist.

The proposed CH-MM and AU-CH transmission line project **may affect but is not likely to adversely affect** bald eagles and/or their habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to bald eagles would be discountable or insignificant.

Because no Mexican spotted owls have been documented and no habitat occurs along the transmission line corridor, the project will have **no effect** on Mexican spotted owls.

Since the project is over 12 miles from Hutton Lake and over 14 miles from Mortenson Lake, the two areas with Wyoming toad populations, the project would have **no effect** on this species (personal communication, 2004, with Kathleen Erwin, USFWS).

Because no known blowout penstemon or its habitat has been identified within the proposed project area, the project would have **no effect** on blowout penstemon and/or its habitat.

Direct effects to Ute ladies'-tresses could include the inadvertent destruction of plants during surface-disturbing activities and from traffic. Western would survey all areas to be disturbed and possible traffic ways for Ute ladies'-tresses during the appropriate time of year when the orchid is in flower and, if any are found, would consult with the USFWS to determine what actions are necessary to avoid or minimize impacts to Ute ladies'-tresses. During operations, traffic in potential Ute ladies'-tresses habitat would be restricted to existing roads. Indirect effects could include the temporary loss of habitat due to surface disturbance. The proposed project would have no cumulative effects on the threatened Ute ladies'-tresses and/or their habitat because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in any impacts beyond those that already exist. The proposed CH-MM and AU-CH transmission line project would have **no effect** on Ute ladies'-tresses and/or their habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Ute ladies'-tresses would be insignificant.

Direct effects to Colorado butterfly plant could include the inadvertent destruction of individual plants during surface-disturbing activities and from traffic. Indirect effects could include the temporary habitat loss due to surface disturbance. Western would span all 3.5 mi of known Colorado butterfly plant habitat along the ROW and would limit traffic to existing roads. Operations traffic in known or potential Colorado butterfly plant habitat would also be restricted to existing roads. The proposed project is located outside of and would not disturb any designated critical habitat for the Colorado butterfly plant. The proposed project would have no cumulative effects on the Colorado butterfly plant and/or their habitat because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in any impacts beyond those that already exist. The proposed CH-MM and AU-CH transmission line project would have **no effect** on the Colorado butterfly plant, its habitat, or its critical habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Colorado butterfly plant would be insignificant.

The Platte River species (whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid) could be adversely affected by surface water depletions (consumption) from the South Platte River system as a result of project-related activities. These species (threatened or endangered) do not occur along the ROW and thus would not be directly impacted.

In 2002, the USFWS prepared a biological opinion in its *Revised Intra-Service Section 7 Consultation for Federal Agency Actions Resulting in Minor Water Depletions to the Platte River System* (USFWS 2002). The biological opinion covers any federal actions other than wetland restoration projects that result in average annual depletions of 25 acre-ft or less to the Platte River system, regardless of location within the basin. The effects analysis and conservation measures apply only to federally listed species, designated whooping crane habitat, and proposed critical habitat for the piping plover along the Platte River in Nebraska.

For the CH-MM and AU-CH project, the only water use anticipated would be for soil compaction during construction of the Snowy Range substation. Compaction water would be obtained from the Laramie municipal water supply, which comes from the Laramie River and the Casper formation. The amount of water to be used is currently unknown but would be less than 25 acre-feet; however, any amount of water taken from the Platte River system for use on this project would be considered a depletion and would require Section 7 consultation with the USFWS. Therefore, once the amount of water is known, Western would initiate consultation with the USFWS on that amount.

Avian Power Line Interaction Committee. 1994. Mitigating bird collisions with power lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C. 78 pp. + append.

______. 1996. Suggested practices for raptor protection on power lines: The State of the Art in 1996. Edison Electric Institute, Washington, D.C. 125 pp. + append.

U.S. Fish and Wildlife Service. 2002. Revised intra-service Section 7 consultation for the federal agency actions resulting in minor water depletions to the Platte River System. Memorandum to Assistant Regional Director, Ecological Service, Region 6, from Regional Director. 77 pp. + append.

______. 2004. Letter from Brian Kelly to Interested Party, dated February 2, 2004. ES-61411/BFF/WY-746. 3 pp. + attach.

Wyoming Game and Fish Department and Bureau of Land Management. 1991. A cooperative management plan for black-footed ferrets, Shirley Basin/Medicine Bow, Wyoming. Prepared by Shirley Basin/Medicine Bow Black-footed Ferret Working Group. Published by Wyoming Game and Fish Department, Cheyenne, Wyoming.

If you are in agreement with our determinations, we would appreciate a letter of concurrence from the U.S. Fish and Wildlife Service. If you have any questions or comments regarding this project, please telephone Rodney Jones at (970) 461-7371. Thank you for your assistance and cooperation this project.

Sincerely,

JOEL K. BLADOW

Joel K. Bladow
Regional Manager

cc:

Ms. Kathleen Erwin
Fish and Wildlife Biologist
Wyoming Field Office
U.S. Fish and Wildlife Service
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

FEB 15 2006

In Reply Refer To:
ES-61411/W.35/WY10125

Joel Bladow
Regional Manager
Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, Colorado 80539

Dear Mr. Bladow:

Thank you for your letter of January 10, 2006, received in our office on January 13, regarding the proposed 146-mile, 115-kV transmission line between Cheyenne and Seminoe Wyoming in Laramie, Albany and Carbon counties. The U.S. Fish and Wildlife Service (Service) previously provided scoping comments on this project in our letter of November 6, 2002. Based on the expanded scope of the project and the length of time since our last comments, you have requested current information regarding listed and proposed species. Therefore we are providing the following comments for use in your analysis.

Federal Agency Responsibilities
The Service has responsibility, under a number of federal laws, treaties, Executive Orders, and memoranda of agreement, for the conservation and management of fish and wildlife resources. Some of these same authorities also require other federal agencies to consider, avoid, or prevent adverse impacts to fish, wildlife, and wetland resources. To ensure resources are afforded adequate consideration and protection, federal agencies are often required to consult with the Service regarding potential impacts their actions may have on fish and wildlife resources.

Our comments include information on (1) threatened, endangered and candidate species, (2) migratory birds, (3) wetlands and riparian areas, and (4) sensitive species, including petitioned species. The Service provides recommendations for protective measures for threatened and endangered species in accordance with the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Protective measures for migratory birds are provided in accordance with the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703 and the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668. Wetlands are afforded protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act, 48 Stat. 401, as amended, 16 U.S.C. 661 *et seq*, and the Fish and Wildlife Act of 1956, as amended, 70 Stat. 1119, 16 U.S.C. 742a-742j.

Federal agencies and their non-federal representatives should work with the Service in developing surveys, impact minimization measures, and conservation measures for all federally listed species. If the proposed project may affect a listed species, consultation with the Service pursuant to section 7(a)(2) of the Act will be required. Section 7 (a)(1) of the Act directs federal agencies to utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation and recovery of listed species. Therefore we encourage you to incorporate measures into each project design for the conservation of listed species.

In accordance with section 7 of the Act, my staff has determined that the following threatened or endangered species, or species proposed for listing under the Act, may be present in the project area. We would appreciate receiving information as to the current status of each of these species within or near the project area.

SPECIES	STATUS	HABITAT
Bald eagle (*Haliaeetus leucocephalus*)	Threatened	Found throughout state
Black-footed ferret (*Mustela nigripes*)	Endangered	Prairie dog towns
Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*)	Threatened	Wet meadows and riparian areas
Critical Habitat for Colorado Butterfly Plant *Neomexicana ssp. Coloradensis)*	Designated	Wet meadows and riparian areas in Bear, Horse, (*Gaura* Lodgepole, Diamond,Spring, and Lone Tree Creeks and tributaries
Preble's meadow jumping mouse *(Zapus hudsonius preblei)*	Threatened	Riparian habitats east of Laramie Mts. and south of the N. Platte River
Critical habitat for Preble's meadow jumping mouse	Designated	Varying widths (360 - 394 feet from stream edge) along portions of Chugwater and Lodgepole creeks and some tributaries

Wyoming toad (*Bufo baxteri*)	Endangered	Wetlands in Laramie River
Ute ladies'-tresses (*Spiranthes diluvialis*)	Threatened	Seasonally moist soils and wet meadows of drainages below 7000 feet
Blowout penstemon (*Penstemon haydenii*)	Endangered	Sand dunes south of Ferris Mountains

If the proposed action may lead to consumptive use of water in the Platte River System, impacts to threatened and endangered species inhabiting the downstream reaches of this system should be included in the evaluation.

Platte River species	Endangered	Downstream riverine habitat of the Platte River in Nebraska

Bald eagle: While habitat loss still remains a threat to the bald eagle's full recovery, most experts agree that its recovery to date is encouraging. Adult eagles establish life-long pair bonds and build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. During winter, bald eagles gather at night to roost in large mature trees, usually in secluded locations that offer protection from harsh weather. Bald eagles often return to use the same nest and winter roost year after year. Because bald eagles are particularly sensitive to human disturbance at their nests and communal roosts, protective buffers should be implemented around these areas [Buehler et al. 1991, Greater Yellowstone Bald Eagle Working Group (GYBEWG) 1996, Montana Bald Eagle Working Group (MBEWG) 1994, Stalmaster and Newman 1978, U.S. Fish and Wildlife Service (USFWS) 1986].

In Wyoming, general bald eagle nest buffer recommendations include minimizing or eliminating project-related disturbance and habitat alteration within 1 mile of bald eagle nests in open country. In more heavily forested or mountainous areas, where the line-of-sight distance from the nest is shorter, this buffer distance could potentially be reduced (see Stalmaster and Newman 1978, USFWS 1986). The nesting season occurs from February 1 to August 15 and bald eagle nest buffers should receive maximum protection during this time period. Also, for some activities (construction, seismic exploration, blasting, and timber harvest), a limited disturbance home range buffer may be required to extend outward into potential foraging habitat for 2.5 miles from the nest (GYBEWG 1996). We recommend that you contact the Service to determine the potential impact of your activity to nesting bald eagles if your project will cause disturbance within one of these nest buffer areas.

A communal roost is defined as an area where six or more eagles spend the night within 100 meters (328 feet) of each other (GYBEWG 1996). For bald eagle communal winter roosts, we recommend that disturbance be restricted within 1 mile of known communal winter roosts during the period of November 1 to April 1 (BLM and USFWS 2002, 2003). Additionally, we recommend that ground disturbing activities be prohibited within 0.5 mile of active roost sites year round.

Disturbance sensitivity of roosting and nesting bald eagles may vary between individual eagles, topography, and intensity of activities. The buffers and timing stipulations, as described above, are normally implemented unless site-specific information indicates otherwise. Modification of buffer sizes may be permitted where biologically supported and in coordination with the Service.

The two primary causes of raptor (including bald eagles) mortality are electrocutions and collisions with power lines. The Service recommends that the project proponent take strong precautionary measures to protect bald eagles and other raptors by raptor-proofing power lines. All power lines should be built to meet all the requirements of the National Electrical Safety Code and the standards identified in the *Suggested Practices for Raptor Protection on Power Line: The State of the Art, Avian Power Line Interaction Committee* (APLIC 1996), to minimize electrocution potential.

Black-footed ferret: Black-footed ferrets may be affected if prairie dog towns are impacted. In Wyoming, black-footed ferret surveys are no longer recommended in black-tailed prairie dog towns or in white-tailed prairie dog towns except those noted in the enclosed February 2, 2004, letter. We encourage you to protect all prairie dog towns for their value to the prairie ecosystem and the myriad of species that rely on them. We further encourage you to analyze potentially disturbed prairie dog towns for their value to future black-footed ferret reintroduction.

If white-tailed prairie dog towns or complexes greater than 200 acres will be disturbed, surveys for ferrets may be recommended in order to determine if the action will result in an adverse effect to the species. Surveys may be recommended even if only a portion of the white-tailed prairie dog town or complex, as identified in the February 2004 letter, will be disturbed. According to the *Black-Footed Ferret Survey Guidelines* (USFWS 1989), a prairie dog complex consists of two or more neighboring prairie dog towns less than 7 km (4.3 miles) from each other. If a field check indicates that prairie dog towns may be affected, you should contact this office for guidance on ferret surveys and the protection of prairie dog ecosystems.

According to the project description, there may be potential for the project to affect the reintroduced (experimental/non-essential) population of black-footed ferrets within or near the Shirley Basin-Medicine Bow Management Area. Species listed as experimental/non-essential populations remain protected under the Act although additional flexibility is provided for their management under the provisions of the special regulations promulgated for this alternate status. Requirements for interagency consultation under section 7 of the Act differ based on the land ownership and/or management responsibility where the animals occur. On any unit of National Park System or National Wildlife Refuge System lands, species that are part of an experimental population are considered a threatened species and the full provisions of section 7 apply.

Additional management flexibility is provided for managing species which exist outside of the National Park or National Wildlife Refuge System (e.g., BLM lands). Species designated as nonessential experimental in these areas are treated as proposed rather than listed.

Colorado butterfly plant: The Colorado butterfly plant is a perennial herb endemic to moist soils in wet meadows of flood plain areas in southeastern Wyoming, north-central Colorado, and extreme western Nebraska between elevations of 5,000 and 6,400 feet. These plants are often found in low depressions or along bends in wide meandering stream channels a short distance upslope of the actual channel. Threats to the plant include non-selective herbicide spraying, haying and mowing schedules that inhibit the setting of seed, land conversion for cultivation and competition from noxious weeds. The low numbers and limited distribution contribute to the plant's vulnerability. Surveys should be conducted during flowering season which normally occurs in August although some temporal variability exists from site to site and from year to year depending on annual climatic conditions. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the Colorado butterfly plant to experts who can provide training/services.

Critical habitat for the Colorado butterfly plant has been designated in Laramie and Platte counties, Wyoming. In total, approximately 3,538 acres along 51 stream miles fall within the boundaries of critical habitat designation. For additional information see Federal Register notice (70 FR 1940). Management considerations for the Colorado butterfly plant include: maintaining surface and subsurface water flows that provide the essential hydrological regime that supports the species; appropriate restraints on application of herbicides used to control noxious weeds; preventing habitat degradation caused by plant community succession; and preventing harmful habitat fragmentation from residential and urban development that detrimentally affects plant-pollinator interactions, leads to a decline in species reproduction, and increases susceptibility to non-native plant species.

Preble's meadow jumping mouse: The Preble's meadow jumping mouse (Preble's) is a small rodent in the Zapodidae family and is 1 of 12 recognized subspecies of the species *Z. hudsonius*, the meadow jumping mouse. The diet of the Preble's consists of seeds, fruits, fungi and insects. Hibernation occurs from October to May in small underground burrows. Nests are made of grass, leaves or woody material in burrows the mouse excavates several centimeters underground. Preble's are primarily nocturnal or crepuscular, but have been observed during daylight. They occur in low undergrowth consisting of grasses, forbs, or a mix of both, in wet meadows and riparian corridors, or where tall shrubs and low trees provide adequate cover. Additionally, Preble's exhibits a preference for lush vegetation along watercourses or herbaceous understories in wooded areas with close proximity to water. In Wyoming, Preble's has been recently documented in Albany, Laramie, Platte and Converse Counties, and may occur in Goshen County. If a proposed project will result in a disturbance to suitable habitat within any of these five counties, surveys should be conducted prior to any action. Due to the difficulty in identifying the Preble's, surveys should be conducted by knowledgeable biologists trained in conducting these surveys.

Critical habitat has been designated for Preble's meadow jumping mouse in Albany, Converse, Laramie, and Platte counties along portions of Lodgepole, Chugwater, and Cottonwood creeks and their tributaries. Critical habitat varies in width from 360 feet to 394 feet on each side of the stream or tributary. Within critical habitat, four primary constituent elements necessary for the conservation of Preble's have been identified. These include: (1) a pattern of dense riparian vegetation consisting of grasses, forbs, and shrubs in areas along rivers and streams that provide open water through the Preble's active season; (2) adjacent floodplains and vegetated uplands with limited human disturbance (including hayed fields, grazed pasture, other agricultural lands that are not plowed or disced regularly, areas that have been restored after past aggregate extraction, areas supporting recreational trails, and urban/wildland interfaces); (3) areas that provide connectivity between and within populations (including river and stream reaches with minimal vegetative cover or that are armored for erosion control; travelways beneath bridges, through culverts, and along canals and ditches; and other areas that have experienced substantial human alteration or disturbance); and, (4) dynamic geomorphological and hydrological processes typical of systems within the range of the Preble's, *i.e.*, those processes that create and maintain river and stream channels, floodplains, floodplain benches, and promote patterns of vegetation favorable to the Preble's. Maps and more detailed location information are available at http://mountain-prairie.fws.gov/preble.

Blowout penstemon: Blowout penstemon is a perennial herb with stems less than 12 inches tall. The inflorescence is 2-6 inches long and has 6-10 compact whorls of milky-blue to pale lavender flowers. Blowout penstemon was listed as endangered on October 1 1987. The plant's current known range in Wyoming consists of the Ferris dunes area in northwest Carbon County where the plant is restricted to two habitat types: steep, northwest facing slopes of active sand dunes with less than 5 percent vegetative cover; and on north facing sandy slopes, on the lee side of active blowouts with 25 to 40 percent vegetative cover. Recent surveys have indicated that systematic surveys are warranted in all lower elevations (below 6700 feet) in Wyoming where sand blowout features are located.

Blowouts are formed as strong winds deposit sands from the windward side of a dune to the leeward side and result in a sparsely vegetated crater-like depression. Associated vegetation includes blowout grass, thickspike wheatgrass, lemon scurfpea, Indian ricegrass and western wheatgrass. Threats to the plant occur when sand dunes are removed or overly disturbed by vehicular traffic. Known populations in Wyoming are found between 6680-7440 feet (Fertig 2001). However, recent surveys by Blomquist and Heidel (June 2002) indicate that surveys may be warranted in some lower elevations where active sand blowout features occur. Surveys should be conducted from mid-June to early-July when flowering occurs by knowledgeable botanists trained in conducting rare plant surveys. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the blowout penstemon to experts who can provide training services.

Ute ladies'-tresses: Ute ladies'-tresses is a perennial, terrestrial orchid, 8 to 20 inches tall, with white or ivory flowers clustered into a spike arrangement at the top of the stem. Ute ladies'-tresses typically blooms from late July through August; however, depending on location and climatic conditions, it may bloom in early July or still be in flower as late as early October. Ute ladies'-tresses is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams where it colonizes early successional point bars or sandy edges. The elevation range of known occurrences is 4,200 to 7,000 feet in alluvial substrates along riparian edges, gravel bars, old oxbows, and moist to wet meadows. Soils where Ute ladies'-tresses have been found typically range from fine silt/sand, to gravels and cobbles, as well as to highly organic and peaty soil types. Ute ladies'-tresses is not found in heavy or tight clay soils or in extremely saline or alkaline soils. Ute ladies'-tresses seems intolerant of shade and small scattered groups are found primarily in areas where vegetation is relatively open. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. Ute ladies'-tresses is difficult to survey for primarily due to its unpredictability of emergence of flowering parts and subsequent rapid desiccation of specimens. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the orchid to experts who can provide training or services.

Wyoming toad: The Wyoming toad historically occupied flood plains, ponds, and seepage lakes associated with shortgrass communities occurring between 7,000 and 7,500 feet in elevation within the Laramie Basin. The toad was associated with both the Big and Little Laramie Rivers. Populations of the Wyoming toad suffered a dramatic decline in the 1970s and the current distribution is limited to Mortenson Lake National Wildlife Refuge and possibly Hutton Lake National Wildlife Refuge. Western Ecosystems Technology Incorporated conducted in depth toad surveys following Service protocol in 1994 and 1995. No new populations were discovered.

Current recommendations call for surveys when proposed projects occur within 1-mile of any border of MLNWR or HLNWR during the toad's active season (May through September). These guidelines may change as new sites are established.

The Wyoming toad is currently found in the wild only at Mortenson Lake and possibly Lake Hutton National Wildlife Refuges in the Laramie Basin in Albany County. The toad was recently reintroduced to a small research project site in the Laramie Plains (2003) and on private land in Centennial, Wyoming (June 2005) as a result of a Safe Harbor Agreement dated August 2004.

Platte River water depletions: Water depletions to the Platte River system may affect the federally listed whooping crane (*Grus americana*), interior least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), pallid sturgeon (*Scaphirhynchus albus*), bald eagle (*Haliaeetus leucocephalus*), and western prairie fringed orchid (*Platanthera praeclara*). In addition, depletions may contribute to the destruction or adverse modification of designated critical habitat for the whooping crane and the northern Great Plains breeding population of the piping plover. Depletions include evaporative losses and/or consumptive use, often characterized as diversions from the Platte River or its tributaries less return flows. Project elements that could be associated with depletions to the Platte River system include, but are not limited to, ponds (detention/recreation/irrigation storage/stock watering), lakes (recreation/irrigation storage/municipal storage/power generation), reservoirs (recreation/irrigation storage/municipal storage/power generation), created or enhanced wetlands, hydrostatic testing of pipelines, wells, diversion structures, dust abatement, and water treatment facilities. Any actions that may result in a water depletion to the Platte River system should be identified. The document should include: an estimate of the amount and timing of average annual water use (both historic and new uses) and methods of arriving at such estimates: location of where water use or diversion occurs as specifically as possible; if and when the water will be returned to the system; and what the water is being used for. Note that if the project has peculiarities or oddities, the Service may have more specific questions regarding the potential consumptive use of water.

Migratory Birds

Please recognize that consultation on listed species may not remove your obligation to protect the many species of migratory birds, including eagles and other raptors protected under the MBTA and BGEPA. The MBTA, enacted in 1918, prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations and does not require intent to be proven. Section 703 of the MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird..." The BGEPA prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing.

In order to promote the conservation of migratory bird populations and their habitats, the Service recommends that you implement those strategies outlined within the Memorandum of Understanding directed by the President of the U.S. under the Executive Order 13186, where possible.

Sensitive Species

Federal agencies are also encouraged to consider sensitive species or species at risk in project review. Your consideration of these species is important in preventing their inclusion on the Endangered Species List. The Wyoming Natural Diversity Database maintains the most current information on sensitive plants in Wyoming. The database must charge for data retrieval to financially support the database and staff. The staff can be contacted at (307) 766-5026.

Mountain Plover

Although the Service has withdrawn the proposal to list the mountain plover (*Charadrius montanus*) and we will no longer be reviewing project impacts to this species under the Act, we continue to encourage federal agencies and their applicants to continue providing protection for this species as it remains protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Measures to protect the mountain plover from further decline may include (1) avoidance of suitable habitat during the plover nesting season (April 10 through July 10), (2) prohibition of ground disturbing activities in prairie dog towns, and (3) prohibition of any permanent above ground structures that may provide perches for avian predators or deter plovers from using preferred habitat. Suitable habitat for nesting mountain plovers includes grasslands, mixed grassland areas and short-grass prairie, shrub-steppe, plains, alkali flats, agricultural lands, cultivated lands, sod farms, and prairie dog towns. We strongly encourage the lead federal agency to develop protective measures with an assurance of implementation should mountain plovers be found within the project areas.

Greater Sage-grouse

The Service has determined that the greater sage-grouse (*Centrocercus urophasianus*) is unwarranted for listing at this time. However, the Service continues to have concerns regarding sage-grouse population status, trends and threats, as well as concerns for other sagebrush obligates. The following information is provided for your use in the evaluation of proposed actions and their potential effects to the sage-grouse.

Greater sage-grouse are dependent on sagebrush habitats year-round. Habitat loss and degradation, as well as loss of population connectivity have been identified as important factors contributing to the decline of greater sage-grouse populations rangewide (Braun 1998, Wisdom et al. 2002). Therefore, any activities that result in loss or degradation of sagebrush habitats that are important to this species should be closely evaluated for their impacts to sage-grouse. If important breeding habitat (leks, nesting or brood rearing habitat) is present in the project area, the Service recommends no project-related disturbance March 1 through June 30, annually. Minimization of disturbance during lek activity, nesting, and brood rearing is critical to sage-grouse persistence within these areas. Likewise, if important winter habitats are present, we recommend no project-related disturbance November 15 through March 14.

We recommend you contact the Wyoming Game and Fish Department to identify important greater sage-grouse habitats within the project area, and appropriate mitigative measures to minimize potential impacts from the proposed project. The Service recommends surveys and mapping of important greater sage-grouse habitats where local information is not available. The results of these surveys should be used in project planning, to minimize potential impacts to this species. No project activities that may exacerbate habitat loss or degradation should be permitted in important habitats.

In Wyoming, information suggests that greater sage-grouse populations are negatively affected by energy development activities, especially those that degrade important sagebrush habitat, even when mitigative measures are implemented (Braun 1998, Lyon 2000). Greater sage-grouse populations can repopulate areas developed for resource extraction after habitat reclamation for the species (Braun 1987). However, there is no evidence that populations attain their previous levels and reestablishment of sage-grouse in a reclaimed area may take 20 to 30 years, or longer (Braun 1998). Recent information from a doctoral dissertation on the impacts of oil and gas development to greater sage-grouse in the Pinedale Anticline found that as development increased, lek activity declined up to 100 percent (Holloran 2005) Therefore, this project should be carefully evaluated for long-term and cumulative effects on the greater sage-grouse, since reclamation may not restore populations to pre-activity levels. The Department of Energy should ensure this activity does not exacerbate greater sage-grouse declines on either a local or range-wide level.

Interrelated and Interdependent Effects

If the portion of the action on state and private lands within the project area would not occur, be feasible, or would occur to a lesser extent without the action on the federal land, the impacts to threatened and endangered species on the non-federal lands must be considered an interrelated and interdependent effect. Under the Act, the federal agency is responsible for evaluating all potential impacts to listed species on state and private lands within the project area. The federal agency should also develop measures to avoid or minimize impacts to listed species on non-federal lands that would occur as a direct or indirect result of the project. The federal agency should notify all lessees of their responsibilities to comply with federal and other applicable regulations, regardless of land or mineral ownership (including the Endangered Species Act, the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act). If the federal agency, surface owners and lessees agree, these private and state lands can be included in section 7 consultation conducted on federal lands within the project area.

Wetlands/Riparian Areas

Wetlands perform significant ecological functions which include: (1) providing habitat for numerous aquatic and terrestrial wildlife species, (2) aiding in the dispersal of floods, (3) improving water quality through retention and assimilation of pollutants from storm water runoff, and (4) recharging the aquifer. Wetlands also possess aesthetic and recreational values. The Service recommends measures be taken to avoid and minimize wetland losses in accordance with Section 404 of the Clean Water Act and Executive Order 11988 (floodplain management) as well as the goal of "no net loss of wetlands." If wetlands may be destroyed or degraded by proposed actions, those wetlands should be inventoried and fully described in terms of their functions and values. Acreage of wetlands, by type, should be disclosed and specific actions should be outlined to avoid, minimize, and compensate for all unavoidable wetland impacts.

Riparian or streamside areas are a valuable natural resource and impacts to these areas should be avoided whenever possible. Riparian areas are the single most productive wildlife habitat type in North America. They support a greater variety of wildlife than any other habitat. Riparian vegetation plays an important role in protecting streams, reducing erosion and sedimentation as well as improving water quality, maintaining the water table, controlling flooding, and providing shade and cover. In view of their importance and relative scarcity, impacts to riparian areas should be avoided. Any potential, unavoidable encroachment into these areas should be further avoided and minimized. Unavoidable impacts to streams should be assessed in terms of their functions and values, linear feet and vegetation type lost, potential effects on wildlife, and potential effects on bank stability and water quality. Measures to compensate for unavoidable losses of riparian areas should be developed and implemented as part of the project.

Plans for mitigating unavoidable impacts to wetland and riparian areas should include mitigation goals and objectives, methodologies, time frames for implementation, success criteria, and monitoring to determine if the mitigation is successful. The mitigation plan should also include a contingency plan to be implemented should the mitigation not be successful. In addition, wetland restoration, creation, enhancement, and/or preservation does not compensate for loss of stream habitat; streams and wetlands have different functions and provide different habitat values for fish and wildlife resources.

Best Management Practices (BMPs) should be implemented within the project area wherever possible. BMPs include, but are not limited to, the following: installation of sediment and erosion control devices (e.g., silt fences, hay bales, temporary sediment control basins, erosion control matting); adequate and continued maintenance of sediment and erosion control devices to insure their effectiveness; minimization of the construction disturbance area to further avoid streams, wetlands, and riparian areas; location of equipment staging, fueling, and maintenance areas outside of wetlands, streams, riparian areas, and floodplains; and re-seeding and re-planting of riparian vegetation native to Wyoming in order to stabilize shorelines and streambanks.

If the scope of the project is changed, or the project is modified, in a manner that you determine may affect a listed species, this office should be contacted to discuss consultation requirements pursuant to section 7(a)(2) of the Act. If you have further questions regarding our comments or your responsibilities under the Act, please contact Kathleen Erwin of my staff at the letterhead address or phone (307)772-2374, extension 28.

Sincerely,

Brian T. Kelly
Field Supervisor
Wyoming Field Office

Enclosure (1)

cc: BLM, Wildlife Biologist, Rawlins (M. Read)
FWS, Regional Office, Energy Coordinator, Lakewood, CO (B. Dach)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (V. Stelter)
WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)

References

Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1996. Edison Electric Institute and the Raptor Research Foundation. Washington, D.C.

Fertig, Walt. 2001. 2000 Survey of Blowout Penstemon (*Penstemon haydenii*) in Wyoming. Report prepared for the Wyoming Cooperative Fish and Wildlife Research Unit, US Fish and Wildlife Service, a Wyoming Game and Fish Department by the Wyoming Natural Diversity Database, Laramie, Wyoming.

Blomquist, Frank, and Bonnie Heidel. 2002. 2002 Census of Blowout Penstemon (*Penstemon haydenii*), Bear Mountain-Junk Hill Population (EO#002), 25 and 27 June 2002. Report prepared for the Bureau of Land Management, Rawlins, Wyoming and Wyoming Natural Diversity Database, Laramie, Wyoming.

Colorado Field Office County List
Updated November 2005

Symbols: * Water depletions in the Upper Colorado River and San Juan River Basins, may affect the species and/or critical habitat in downstream reaches in other states. ▲ Water depletions in the South Platte River may affect the species and/or critical habitat in downstream reaches in other states. © There is designated critical habitat for the species within the county. T Threatened E Endangered P Proposed X Experimental C Candidate		
For additional information contact: U.S. Fish and Wildlife Service, Colorado Field Office, 755 Parfet Street, Suite 361, Lakewood, Colorado 80215, telephone 303-275-2370 *U.S. Fish and Wildlife Service, Western Colorado Field Office, 764 Horizon Drive, Building B, Grand Junction, Colorado 81506, telephone 970-243-2778*		

Species	**Scientific Name**	**Status**
ADAMS		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane▲	Grus americana	E
ALAMOSA		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Gunnison sage-grouse	Centrocercus minimus	C
Mexican spotted owl	Strix occidentalis lucida	T
Southwestern willow flycatcher	Empidonax traillii extimus	E
Yellow-billed cuckoo	Coccyzus americanus	C
ARAPAHOE		
Bald eagle	Haliaeetus leucocephalus	T

Black-footed ferret	Mustela nigripes	E
Least tern (interior population)▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane▲	Grus americana	E
ARCHULETA		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Mexican spotted owl	Strix occidentalis lucida	T
Pagosa skyrocket	Ipomopsis polyantha	C
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Yellow-billed cuckoo	Coccyzus americanus	C
BACA		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Lesser prairie chicken	Tympanuchus pallidicinctus	C
BENT		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)	Sterna antillarum	E
Lesser prairie chicken	Tympanuchus pallidicinctus	C
Piping plover	Charadrius melodus	T
BOULDER		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Colorado butterfly plant	Gaura neomexicana spp. coloradensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Least tern (interior population) ▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T

Slender moonwort	Botrychium lineare	C
Ute ladies'-tresses	Spiranthes diluvialis	T
Whooping crane ▲	Grus americana	E
BROOMFIELD		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Colorado butterfly plant	Gaura neomexicana spp. coloradensis	T
Least tern (interior population) ▲	Sterna antillarum	E
Pallid sturgeon ▲	Scaphirhynchus albus	E
Piping plover ▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane ▲	Grus americana	E
CHAFFEE		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Gunnison sage-grouse	Centrocercus minimus	C
Mexican spotted owl	Strix occidentalis lucida	T
Uncompahgre fritillary butterfly	Boloria acrocnema	E
CHEYENNE		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Lesser prairie chicken	Tympanuchus pallidicinctus	C
CLEAR CREEK		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Least tern (interior population) ▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon ▲	Scaphirhynchus albus	E
Piping plover ▲	Charadrius melodus	T
Slender moonwort	Botrychium lineare	C
Whooping crane ▲	Grus americana	E
CONEJOS		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Gunnison sage-grouse	Centrocercus minimus	C
Mexican spotted owl	Strix occidentalis lucida	T

Southwestern willow flycatcher	Empidonax traillii extimus	E
Yellow-billed cuckoo	Coccyzus americanus	C
COSTILLA		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Gunnison sage-grouse	Centrocercus minimus	C
Mexican spotted owl	Strix occidentalis lucida	T
Southwestern willow flycatcher	Empidonax traillii extimus	E
Yellow-billed cuckoo	Coccyzus americanus	C
CROWLEY		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)	Sterna antillarum	E
Lesser prairie chicken	Tympanuchus pallidicinctus	C
Piping plover	Charadrius melodus	T
CUSTER		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Mexican spotted owl	Strix occidentalis lucida	T
DELTA		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Bonytail	Gila elegans	E
Canada lynx	Lynx canadensis	T
Clay-loving wild buckwheat	Eriogonum pelinophilum	E
Colorado pikeminnow©	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub	Gila cypha	E
Razorback sucker©	Xyrauchen texanus	E
Uinta Basin hookless cactus	Sclerocactus glaucus	T
Yellow-billed cuckoo	Coccyzus americanus	C
DENVER		
Bald eagle	Haliaeetus leucocephalus	T
Least tern (interior population) ▲	Sterna antillarum	E
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T

Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane ▲	Grus americana	E
DOLORES		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub*	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
DOUGLAS		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Colorado butterfly plant	Gaura neomexicana spp. coloradensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Least tern (interior population) ▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon ▲	Scaphirhynchus albus	E
Pawnee montane skipper	Hesperia leonardus montana	T
Piping plover ▲	Charadrius melodus	T
Preble's meadow jumping mouse©	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane ▲	Grus americana	E
EAGLE		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Humpback chub*	Gila cypha	E
Razorback sucker*	Xyrauchen texanus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
ELBERT		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E

Least tern (interior population) ▲	Sterna antillarum	E
Pallid sturgeon ▲	Scaphirhynchus albus	E
Piping plover ▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T
Whooping crane ▲	Grus americana	E
EL PASO		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Least tern (interior population) ▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon ▲	Scaphirhynchus albus	E
Piping plover ▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T
Slender moonwort	Botrychium lineare	C
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane ▲	Grus americana	E
FREMONT		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Mexican spotted owl	Strix occidentalis lucida	T
GARFIELD		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow©	Ptychocheilus lucius	E
De Beque phacelia	Phacelia submutica	C
Humpback chub	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Parachute beardtongue	Penstemon debilis	C
Razorback sucker©	Xyrauchen texanus	E
Uinta Basin hookless cactus	Sclerocactus glaucus	T
Yellow-billed cuckoo	Coccyzus americanus	C
GILPIN		
Canada lynx	Lynx canadensis	T
Least tern (interior population) ▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon ▲	Scaphirhynchus albus	E

Piping plover▲	Charadrius melodus	T
Whooping crane▲	Grus americana	E
GRAND		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Humpback chub*	Gila cypha	E
Osterhout milkvetch	Astragalus osterhoutii	E
Penland beardtongue	Penstemon penlandii	E
Razorback sucker*	Xyrauchen texanus	E
Slender moonwort	Botrychium lineare	C
Yellow-billed cuckoo	Coccyzus americanus	C
GUNNISON		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub*	Gila cypha	E
Razorback sucker*	Xyrauchen texanus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
HINSDALE		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Humpback chub*	Gila cypha	E
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
HUERFANO		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Mexican spotted owl	Strix occidentalis lucida	T
JACKSON		

Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Least tern (interior population) ▲	Sterna antillarum	E
North Park phacelia	Phacelia formosula	E
Pallid sturgeon ▲	Scaphirhynchus albus	E
Piping plover ▲	Charadrius melodus	T
Whooping crane ▲	Grus americana	E
JEFFERSON		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Colorado butterfly plant	Gaura neomexicana spp. coloradensis	T
Least tern (interior population) ▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon ▲	Scaphirhynchus albus	E
Pawnee montane skipper	Hesperia leonardus montana	T
Piping plover ▲	Charadrius melodus	T
Preble's meadow jumping mouse©	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane ▲	Grus americana	E
KIOWA		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)	Sterna antillarum	E
Lesser prairie chicken	Tympanuchus pallidicinctus	C
Piping plover	Charadrius melodus	T
KIT CARSON		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
LAKE		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Penland alpine fen mustard	Eutrema penlandii	T
Slender moonwort	Botrychium lineare	C
Uncompahgre fritillary butterfly	Boloria acrocnema	E
LA PLATA		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T

Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Knowlton cactus	Pediocactus knowltonii	E
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
LARIMER		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Colorado butterfly plant	Gaura neomexicana spp. coloradensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Least tern (interior population)▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
North Park phacelia	Phacelia formosula	E
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Preble's meadow jumping mouse©	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane▲	Grus americana	E
LAS ANIMAS		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Mexican spotted owl	Strix occidentalis lucida	T
LINCOLN		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)▲	Sterna antillarum	E
Lesser prairie chicken	Tympanuchus pallidicinctus	C
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Whooping crane▲	Grus americana	E
LOGAN		
Bald eagle	Haliaeetus leucocephalus	T
Least tern (interior population)▲	Sterna antillarum	E
Pallid sturgeon▲	Scaphirhynchus albus	E

Piping plover	Charadrius melodus	T
Whooping crane ▲	Grus americana	E
MESA		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail©	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow©	Ptychocheilus lucius	E
De Beque phacelia	Phacelia submutica	C
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub©	Gila cypha	E
Razorback sucker©	Xyrauchen texanus	E
Uinta Basin hookless cactus	Sclerocactus glaucus	T
Yellow-billed cuckoo	Coccyzus americanus	C
MINERAL		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
MOFFAT		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Bonytail©	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow©	Ptychocheilus lucius	E
Humpback chub©	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker©	Xyrauchen texanus	E
Yellow-billed cuckoo	Coccyzus americanus	C
MONTEZUMA		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Mancos milkvetch	Astragalus humillimus	E
Mesa Verde cactus	Sclerocactus mesae-verdae	T
Mexican spotted owl	Strix occidentalis lucida	T

Razorback sucker*	Xyrauchen texanus	E
Sleeping Ute milkvetch	Astragalus tortipes	C
Southwestern willow flycatcher	Empidonax traillii extimus	E
Yellow-billed cuckoo	Coccyzus americanus	C
MONTROSE		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Clay-loving wild buckwheat	Eriogonum pelinophilum	E
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub*	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker*	Xyrauchen texanus	E
Uinta Basin hookless cactus	Sclerocactus glaucus	T
Yellow-billed cuckoo	Coccyzus americanus	C
MORGAN		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)	Sterna antillarum	E
Pallid sturgeon ▲	Scaphirhynchus albus	E
Piping plover	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane ▲	Grus americana	E
OTERO		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)	Sterna antillarum	E
Piping plover	Charadrius melodus	T
OURAY		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub*	Gila cypha	E
Razorback sucker*	Xyrauchen texanus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E

Yellow-billed cuckoo	Coccyzus americanus	C
PARK		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Least tern (interior population) ▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon ▲	Scaphirhynchus albus	E
Pawnee montane skipper	Hesperia leonardus montana	T
Penland alpine fen mustard	Eutrema penlandii	T
Piping plover ▲	Charadrius melodus	T
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Whooping crane ▲	Grus americana	E
PHILLIPS		
Bald eagle	Haliaeetus leucocephalus	T
PITKIN		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Humpback chub*	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker*	Xyrauchen texanus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
PROWERS		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)	Sterna antillarum	E
Lesser prairie chicken	Tympanuchus pallidicinctus	C
Piping plover	Charadrius melodus	T
PUEBLO		
Arkansas darter	Etheostoma cragini	C
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Canada lynx	Lynx canadensis	T
Greenback cutthroat trout	Oncorhynchus clarki stomias	T
Mexican spotted owl	Strix occidentalis lucida	T

RIO BLANCO		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow©	Ptychocheilus lucius	E
Dudley Bluffs bladderpod	Lesquerella congesta	T
Dudley Bluffs twinpod	Physaria obcordata	T
Graham beardtongue	Penstemon grahamii	C
Humpback chub*	Gila cypha	E
Razorback sucker*	Xyrauchen texanus	E
White River beardtongue	Penstemon scariosus var. albifluvis	C
Yellow-billed cuckoo	Coccyzus americanus	C
RIO GRANDE		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
ROUTT		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Humpback chub*	Gila cypha	E
Razorback sucker*	Xyrauchen texanus	E
Yellow-billed cuckoo	Coccyzus americanus	C
SAGUACHE		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub*	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E

Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
SAN JUAN		
Bald eagle	Haliaeetus leucocephalus	T
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
SAN MIGUEL		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Gunnison sage-grouse	Centrocercus minimus	C
Humpback chub*	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Razorback sucker*	Xyrauchen texanus	E
Southwestern willow flycatcher	Empidonax traillii extimus	E
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C
SEDGWICK		
Bald eagle	Haliaeetus leucocephalus	T
Least tern (interior population)	Sterna antillarum	E
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover	Charadrius melodus	T
Whooping crane▲	Grus americana	E
SUMMIT		
Bald eagle	Haliaeetus leucocephalus	T
Bonytail*	Gila elegans	E
Canada lynx	Lynx canadensis	T
Colorado pikeminnow*	Ptychocheilus lucius	E
Humpback chub*	Gila cypha	E
Mexican spotted owl	Strix occidentalis lucida	T
Penland alpine fen mustard	Eutrema penlandii	T
Razorback sucker*	Xyrauchen texanus	E
Slender moonwort	Botrychium lineare	C
Uncompahgre fritillary butterfly	Boloria acrocnema	E
Yellow-billed cuckoo	Coccyzus americanus	C

TELLER		
Bald eagle	Haliaeetus leucocephalus	T
Least tern (interior population)▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon▲	Scaphirhynchus albus	E
Pawnee montane skipper	Hesperia leonardus montana	T
Piping plover▲	Charadrius melodus	T
Preble's meadow jumping mouse©	Zapus hudsonius preblei	T
Whooping crane▲	Grus americana	E
WASHINGTON		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Least tern (interior population)▲	Sterna antillarum	E
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Whooping crane▲	Grus americana	E
WELD		
Bald eagle	Haliaeetus leucocephalus	T
Black-footed ferret	Mustela nigripes	E
Colorado butterfly plant	Gaura neomexicana spp. coloradensis	T
Least tern (interior population)▲	Sterna antillarum	E
Mexican spotted owl	Strix occidentalis lucida	T
Pallid sturgeon▲	Scaphirhynchus albus	E
Piping plover▲	Charadrius melodus	T
Preble's meadow jumping mouse	Zapus hudsonius preblei	T
Ute ladies'-tresses orchid	Spiranthes diluvialis	T
Whooping crane▲	Grus americana	E
YUMA		
Bald eagle	Haliaeetus leucocephalus	T

Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland, CO 80539-3003

JAN 10 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED 7003 1010 002 5816 9689

Mr. Brian T. Kelly
Field Supervisor
Wyoming Field Office
U.S. Fish and Wildlife Service
4000 Airport Parkway
Cheyenne, WY 82001

SUBJECT: Request for Updated List of Endangered, Threatened or Sensitive Species, or Critical Habitats for the Cheyenne-Miracle Mile and Ault-Cheyenne Transmission Line Rebuild Project--ES-61411ke/W.35/WY66404

Dear Mr. Kelly:

Western Area Power Administration, Rocky Mountain Region (Western) is proposing to rebuild the Cheyenne-Miracle Mile 115-kV Transmission Line between Cheyenne and Seminoe, Wyoming, and the Ault-Cheyenne 115-kV Transmission Line between Cheyenne, Wyoming, and Ault, Colorado (Maps enclosed). The transmission lines are located in Laramie, Albany, and Carbon Counties, Wyoming.

On October 3, 2002, Western requested a list of endangered, threatened or sensitive species, or critical habitats for the Cheyenne-Miracle Mile Transmission Line Rebuild Project. On November 6, 2002, the U. S. Fish and Wildlife Service, Wyoming Field Office, responded with species lists specific for Laramie, Albany, and Carbon Counties. Copies of both correspondences are enclosed for your reference.

Since that time, Western has expanded the scope of the project to include the rebuild of the Ault-Cheyenne Transmission Line, which is located south of Cheyenne in Laramie County. Both transmission lines cross primarily private land, although there are some public lands managed by the Bureau of Land Management and the State of Wyoming.

In accordance with the Endangered Species Act of 1973, Public Law 93-203 (87 Statute 884) as amended, Section 7, Western is requesting that your agency furnish us with an updated listing of proposed, candidate, and listed threatened and endangered species that may occur in the area of the proposed action. The information received will be utilized in Western's environmental evaluation currently being conducted for the project.

If you have questions or need additional information, please telephone Rodney Jones at (970) 461-7371.

Sincerely,

Joel K. Bladow
Regional Manager

2 Enclosures

bcc:
Ms. Christine Keller
View Point West
P.O. Box 1152
Montrose, CO 81401
(w/copy of enclosures)

J. Bridges, A7400, Lakewood, CO
S. Starcevich, A7500, Lakewood, CO
J0400
J0420
J5000
J5640
J5641
(w/copy of enclosures)

Enclosure 1

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

In Reply Refer To:
ES-61411/BFF/WY7746

February 2, 2004

Dear Interested Party:

This letter is to inform you that black-footed ferret (*Mustela nigripes*) surveys are no longer necessary in black-tailed prairie dog colonies statewide or in white-tailed prairie dog towns except those noted in the attachment. In response to requests from numerous entities and our own review of the situation regarding ferret surveys, the U.S. Fish and Wildlife Service (Service) and others have been evaluating the potential for a previously unidentified black-footed ferret population to occur in Wyoming and the need for conducting black-footed ferret surveys across the entire state. This issue has been especially pertinent when evaluating various activities for compliance with the Endangered Species Act of 1973 (Act), as amended (16 USC 1531 *et seq*).

The black-footed ferret was listed as an endangered species in 1967, prior to the Act (under the Endangered Species Preservation Act of 1966). The Act prohibits the take of listed species without proper permits and places an additional requirement on activities funded, authorized or carried out by Federal agencies to ensure that such actions will not jeopardize the continued existence of any listed species. The latter process is known as interagency consultation and is outlined in section 7(a)(2) of the Act (50 C.F.R. § 402.13) .

The Service developed the 1989 *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* (Survey Guidelines) to assist with section 7 consultations for ferrets. The Survey Guidelines provide a mechanism to evaluate the possibility of locating existing ferrets in prairie dog colonies by examination of the size, density, and juxtaposition of existing prairie dog colonies. The key points of the strategy are to determine the existence of ferrets or an area's potential for ferret recovery and either may be used in section 7 consultations when determining whether an action may affect the black-footed ferret. The Survey Guidelines can be followed by interested parties (federal agencies and their partners) during the section 7 consultation process to make determinations on whether an activity may adversely affect ferrets. However, an unintended drawback to the Survey Guidelines is that repetitive surveys may be undertaken to evaluate possible impacts to ferrets on prairie dog colonies that have already been searched or that didn't present any realistic opportunities for ferret reintroduction.

The Service has been coordinating with the Wyoming Game and Fish Department in reviewing information about the current and historic status of prairie dog towns throughout Wyoming. In addition to the status review, we have also been reviewing the history of black-footed ferret surveys to determine whether the survey guidelines should continue to be applied across the entire state. Through this process, the Service has developed an initial list of blocks of habitat that are not likely to be inhabited by black-footed ferrets. In these areas, take of individual ferrets and effects to a wild population are not an issue and surveys for ferrets are no longer recommended. The term "block clearance" has often been used to describe this type of approach. This initial list is based largely on the quality of the habitat today, as well as information regarding past population bottlenecks that may have resulted from plague and poisoning events in particular areas and may have led to the loss of ferrets in the area.

Additional information regarding the survey effort on the specific areas not yet block-cleared is currently being reviewed by the Service. Based on this review, the Service will likely add several blocks of habitat to the list in the future. The Service will continue to collect and review information on any remaining areas to determine if they should be added to the list of areas cleared from the survey recommendation. Therefore, prior to conducting surveys, you should coordinate with the Service to determine which specific areas are recommended for surveys. We have attached our initial list of areas cleared from the ferret survey recommendation. We believe this approach is not only biologically defensible, but also allows all parties involved to focus survey effort and resources on those areas where the likelihood of discovering wild ferrets is greatest.

Please note that "block clearance" must not be interpreted to mean that the area is free of all value to black-footed ferrets. These areas, or blocks, are merely being cleared from the need for ferret surveys. Therefore, this clearance from the survey recommendations reflects only the negligible likelihood of a wild population of ferrets occurring in an area. It does not provide insight into an area's value for survival and recovery of the species through future reintroduction efforts. Nor does this clearance relieve a Federal agency of its responsibility to evaluate the effects of its actions on the survival and recovery of the species. For example, while an action proposed in a cleared area needs no survey and is not likely to result in take of individuals, the action could have an adverse effect upon the value of a prairie dog town as a future reintroduction site and should be evaluated to determine the significance of that effect. Consultation with the Service is appropriate for any agency action resulting in an effect significant enough to diminish a site's value as a future reintroduction site. Additionally, block clearance of an area does not imply that other values of maintaining the integrity of the prairie dog ecosystem are unimportant.

We appreciate your efforts to conserve listed species. Without the valuable information collected to date in association with black-footed ferret surveys, we would not be able to undertake this effort to focus ferret surveys on the most promising habitat.

If you have any questions regarding this letter or your responsibilities under the Act, please contact Mary Jennings of my staff at the letterhead address or phone (307) 772-2374, extension 32.

Sincerely,

/s/ Brian T. Kelly

Brian T. Kelly
Field Supervisor
Wyoming Field Office

Enclosure (1)

cc: WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)
FWS, BFF Recovery Coordinator, Laramie, WY (M. Lockhart)

Enclosure 2

Black-footed Ferret Survey Block Clearance List February 1, 2004

The following blocks of black-footed ferret habitat are cleared from the recommendation for ferret surveys:

1. All black-tailed prairie dog towns in Wyoming

2. All white-tailed prairie dog towns in Wyoming **EXCEPT** those identified in the following table.

Complex Name	Townships	Ranges	Complex Name	Townships	Ranges
Baxter Basin	T18, T19, T20	R103, R104	Fifteen Mile	T47-T49 T48	R97, R98 R96 (west half)
Big Piney	T28 T29, T30, T31	R111, R112 R109-R111	Flaming Gorge	T12, T13 T12-T14 T13	R109 R108 R107
Bolton Ranch	T17 T18, T19	R86, R88 R86-R88	Manderson	T47, T48 T49	R90, R91 R91
Carter	T16, T17 T18	R114-R116 R115	Moxa	T15, T16 T17, T18 T19, T20 T21 T22, T23 T24	R112, R113 R111-R113 R111-R114 R110-R113 R111-R113 R112
Continental Divide	T16 T17 T18 T19 T20	R93-95 R92-95, 98-100, 97-98 R92-96, 98-99 R92-96 R92-95	Pathfinder	T27 T28 T29	R85, R86 R85-R89 R85, R89
Cumberland	T16 T17-T19 T19, T20	R118 R117 R116	Saratoga	T14 T15 T16	R82, R83 R82-R84 R83-R85
Dad	T15, T16 T17	R90-R93 R92, R93	Seminoe	T23, T24	R84, R85
Desolation Flats	T13 T14 T15 T16	R93-95 R93-94 R93-94, 96 R93-96	Shamrock Hills	T22, T23 T24, T25 T26	R89, R90 R89 R89, R90

WYOMING
GAME AND FISH DEPARTMENT

Jim Geringer, Governor | Dr. Tom Thorne, Acting Director

"Conserving Wildlife - Serving People"

FILE COPY

January 7, 2003

WER 9572
Department of Energy
Western Area Power Administration
Rocky Mountain Region
Scoping Statement
Rebuild the Cheyenne-Miracle Mile 115-kV
Transmission Line
State Identifier Number: 1989-092a
Albany, Carbon and Laramie Counties

Julie Kozlowski, Assistant Director
Office of Federal Land Policy
Herschler Building, 1W
122 W. 25th Street
Cheyenne, WY 82002

Dear Ms. Kozlowski:

These comments regarding the scoping statement to rebuild the Cheyenne-Miracle Mile 115-kV Transmission Line have been approved by the Director and are specific to this agency's statutory mission within State government which is "Conserving Wildlife, Serving People". In that regard, these comments are meant to, in association with all other agency comments, assist in defining the Official State Position. These comments defer to and are subordinate to the Official State Position.

Terrestrial Considerations:

The project crosses crucial winter/yearlong habitat for deer, antelope, and elk. The information provided to us did not contain time frames for construction activities. If construction is planned for the winter period (November 15-April 30), we would prefer that activity avoid crucial winter ranges for the big game species. This would minimize displacement of animals from their preferred habitat during the winter period when animals are most stressed. If winter construction is planned, we can provide specific crucial winter range locations to avoid.

The power line route is located in potential raptor nesting habitat. Though we do not have specific data for the route, some active nests are likely close enough (generally within ½

These comments are reflective of a specific agency mission only. These comments defer to and are subordinate to the Official State Position.

mile of the route) so that construction activities could be detrimental to nesting success. We encourage a raptor survey of the route, and at least a ½ mile buffer along either side of the route, prior to construction activities so that nests can be avoided at critical times during the nesting season and nest abandonments can be avoided.

Likewise, the power line route passes through sage grouse habitat in the Laramie Plains. The sage grouse has been petitioned as an endangered species. If construction is planned for the period March 1-May 15, a pre-construction survey should be done along the route in the Laramie Plains, plus ¼ mile on either side of the route, to identify any lek sites that might be present. If located, activity within ¼ mile of the leks should be avoided before 9AM during the March 1-May 15 period to minimize disturbance to the strutting birds.

Disturbance to wetlands should be minimized or avoided, due to their relative scarcity in the project landscape and because of their rich biological value. Power lines adjacent to perennial water sources should be marked to make them more visible to birds that make disproportionately higher use of the aquatic habitat, in an effort to avoid bird mortalities.

Powerline structures should be designed to minimize raptor electrocutions. The structures should also be designed to eliminate raptor perching when located within ½ mile of known sage grouse leks, to avoid increased impacts on the grouse.

The U.S. Fish and Wildlife Service office in Cheyenne should be notified for further input on raptors and other federal interest species.

Aquatic Considerations:

The Department is concerned with the potential loss of aquatic habitat from construction or reconstruction of roads that will cross streams throughout the project area. To avoid impacts associated with these stream crossings, we recommend the following best management practices.

- Disturbed banks should be stabilized with angular rock riprap with an average size of at least 12 inches in one dimension and a minimum size of 6 inches. Hard, durable rock such as granite should be used if possible. The rock should be from a non-streambed source.
- Any riparian canopy or bank stabilizing vegetation removed as result of construction activities should be reintroduced and protected from grazing until the new growth is well established.
- Instream construction activities should be minimized to the greatest extent possible to minimize sedimentation and channel instability impacts to fish habitat.
- Unless otherwise specified, instream construction should take place only during low water periods.

These comments are reflective of a specific agency mission only. These comments defer to and are subordinate to the Official State Position.

- New road construction, or reconstruction, should be completed such that in-channel work/disturbance is kept to a minimum and structures such as box culverts, bottomless culverts, etc., are used to pass water under the road crossing.

- All road crossings should maintain natural channel geometry (i.e. do not narrow, straighten, or shorten stream channels).

- Provide for floodplain drainage (i.e. do not oversize culverts to pass flows that access the floodplain; rather, place culverts so that floodplains are drained).

- Do not create fish passage barriers.

In addition to the above comments, the Department recommends that all unnecessary roads, following construction, should be obliterated, restored to original contour and re-seeded, to prevent future soil erosion, sediment loading to streams and increased drainage density within watersheds.

The 1:24K maps do not show the line passing through East Allen Lake, but observations over the years indicate that the lake typically inundates the exiting transmission poles. If the new transmission line follows the existing right-of-way through East Allen Lake, then the Department recommends that any fill associated with the new towers should be mitigated by a like amount of dredging. An alternative to the dredging would be to install bank riprap, or breakwaters, or some other structure on the east edge of the lake where wave action continues to cause serious bank erosion that results in enlarging the lake surface area and decreasing the mean depth, thus increasing the risk of a winterkill.

Finally, erosion control will be especially important on the road (green line) that is shown along the hydrographic divide of the North Platte/Laramie and South Platte rivers, at the crest of the Laramie Range (R72W T15N S14 to R72W T16N S28). These soils are very thin and highly erodible. Likewise, on the long, straight road(s) on the east flank of the Laramie Range (R72W T16N S26 to R69W T16N S20 and to R69W T16N S30) erosion control structures (waterbars, reclamation, etc.) will be necessary to minimize erosion of the road surface and barrow ditches, and movement of sediment into stream channels.

Sincerely,

Bill Wichers

BILL WICHERS
DEPUTY DIRECTOR

BW:TC:as

These comments are reflective of a specific agency mission only. These comments defer to and are subordinate to the Official State Position.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

ES-61411
ke/W.35/WY6404

November 6, 2002

Mr. Joel Bladow, Regional Manager
Department of Energy
Western Area Power Administration
Rocky Mountain Customer Service Region
P.O. Box 3700
Loveland,CO 80539-3003

Dear Mr. Bladow:

Thank you for your letter of October 3, 2002, requesting a species list for the proposed Cheyenne-Miracle Mile Transmission Line rebuild project located in Laramie, Albany, and Carbon Counties, Wyoming. In accordance with section 7(c) of the Endangered Species Act of 1973, as amended (Act), we are providing you with a list of threatened, endangered, and proposed species that may occur in the project area. Please refer to the attached species lists specific to each county as described in your letter.

Consultation
Section 7(c) of the Act requires that a biological assessment be prepared for any Federal action that is a major construction activity to determine the effects of the proposed action on listed and proposed species. If a biological assessment is not required (i.e., all other actions), the lead Federal agency is responsible for review of proposed activities to determine whether listed species will be affected. The U.S. Fish and Wildlife Service (Service) would appreciate the opportunity to review any such determination document. If it is determined that the proposed activities may affect a listed species, you should contact this office to discuss consultation requirements. If it is determined that any Federal agency program or project "is likely to adversely affect" any listed species, formal consultation should be initiated with this office. Alternatively, informal consultation can be continued so we can work together to determine how the project could be modified to reduce impacts to listed species to the "not likely to adversely affect" threshold. If it is concluded that the project "is not likely to adversely affect" listed species, we should be asked to review the assessment and concur with the determination of not likely to adversely affect.

For those actions where a biological assessment is necessary, it should be completed within 180 days of receipt of a species list, but can be extended by mutual agreement between the lead agency and the Service. If the assessment is not initiated within 90 days of receipt of a species list, the list of threatened and endangered species should be verified with me prior to initiation of the assessment. The biological assessment may be undertaken as part of the agency's compliance of section 102 of the National Environmental Policy Act (NEPA), and incorporated into the NEPA documents. The Service recommends that biological assessments include:

1. a description of the project;
2. a description of the specific area potentially affected by the action;
3. the current status, habitat use, and behavior of threatened and endangered species in the project area;
4. discussion of the methods used to determine the information in item 3;
5. direct and indirect impacts of the project to threatened and endangered species, including impacts of interrelated and interdependent actions;
6. an analysis of the effects of the action on listed and proposed species and their habitats including cumulative impacts from Federal, State, or private projects in the area;
7. measures that will reduce or eliminate adverse impacts to threatened and endangered species;
8. the expected status of threatened and endangered species in the future (short and long term) during and after project completion;
9. determination of "is likely to adversely affect" or "is not likely to adversely affect" for listed species;
10. determination of "is likely to jeopardize" or "is not likely to jeopardize" for proposed species;
11. Alternatives to the proposed action considered, a summary of how impacts of those alternatives on listed and proposed species would differ from the proposed action, and the reasons for not selecting those alternatives.
12. citation of literature and personal contacts used in the assessment.

A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare biological assessments. However, the ultimate responsibility for section 7 compliance remains with the Federal agency, and written notice should be provided to the Service upon such a designation. We recommend that Federal agencies provide their non-Federal representatives with proper guidance and oversight during preparation of biological assessments and evaluation of potential impacts to listed species.

Section 7(d) of the Act requires that the Federal agency and permit or license applicant shall not make any irreversible or irretrievable commitment of resources which would preclude the formulation of reasonable and prudent alternatives until consultation on listed species is completed.

Regarding species proposed for listing, Federal agencies must determine whether any of their proposed activities are likely to jeopardize the continued existence of the species. If jeopardy is likely, that agency must confer with the Service.

We will work with the lead Federal agency in the section 7 consultation process. The analysis of project impacts must assess direct impacts of the project, as well as those impacts that are interrelated to or interdependent with the proposed action. Impacts to listed species on non-Federal lands must be evaluated along with such impacts on Federal lands. Any measures that are ultimately required to avoid or reduce impacts to listed species will apply to Federal as well as non-Federal lands.

Candidate Species

The black-tailed prairie dog (*Cynomys ludovicianus*), a candidate species for listing as threatened or endangered, may occur within the project area. Many Federal agencies have policies to protect candidate species from further population declines. We would appreciate receiving any information available on the status of this species in or near the project area. In addition, if the black-tailed prairie dog is listed prior to the completion of your project, unnecessary delays may be avoided by considering project impacts to this species now. Should this species be proposed for listing, the lead Federal agency would be required to confer with this office if that agency determines their action (e.g. approval of the project) is likely to jeopardize the continued existence of either species.

Migratory Birds

Please recognize that consultation on listed species may not remove your obligation to protect the many species of birds, raptors, and eagles protected under the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA). The MBTA, 16 U.S.C. 703, enacted in 1918, prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations and does not require intent to be proven. Section 703 of the Act states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird..." The BGEPA, 16 U.S.C. 668, prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing.

Work that could lead to the take of a migratory bird or eagle, their young, eggs, or nests (for example, construction within the vicinity of a nest), should be coordinated with our office before any actions are taken. Removal or destruction of such nests, or causing abandonment of a nest could constitute violation of the above statutes. Please be advised there has been a change in the criteria used to determine whether or not a "take" permit can be issued under the Migratory Bird Treaty Act. You will need to contact the Migratory Bird Office in our Denver regional office for more information regarding these permitting changes (303-236-8171). Timing is a significant consideration and you need to allow for this in your project planning. We also recommend the project area be surveyed for raptor nests and roost areas.

To minimize effects on nesting raptors and the possibility of "take" under the Migratory Bird Treaty Act, protective/mitigation measures may be necessary. Any analysis of the project should address potential adverse impacts including habitat loss or degradation, nest abandonment, and electrocution/collision hazards to raptors and specifically outline all measures that will be implemented to minimize adverse effects to these species. Your planning document should describe proposed protective measures including, but not limited to: possible timing restrictions for construction, establishment of buffer zones around raptor nests, and proper raptor-proofing of power lines to avoid electrocution and prevent perching.

Wetlands/Riparian Areas

The Service recommends measures be taken to avoid any wetland losses in accordance with Section 404 of the Clean Water Act, Executive Order 11990 (wetland protection) and Executive Order 11988 (floodplain management) as well as the goal of "no net loss of wetlands." If wetlands may be destroyed or degraded by the proposed action, those (wetlands) in the project area should be inventoried and fully described in terms of functions and values. Acreage of wetlands, by type, should be disclosed and specific actions outlined to minimize impacts and compensate for all unavoidable wetland impacts.

Riparian or streamside areas are a valuable natural resource and impacts to these areas should be avoided whenever possible. Riparian areas are the single most productive wildlife habitat type in North America. They support a greater variety of wildlife than any other habitat. Riparian vegetation plays an important role in protecting streams, reducing erosion and sedimentation as well as improving water quality, maintaining the water table, controlling flooding, and providing shade and cover. In view of their importance and relative scarcity, impacts to riparian areas should be avoided. For any drainages the pipeline crosses, we suggest drilling under the drainages to place pipeline to minimize impacts to the drainages. Any potential, unavoidable encroachment into these areas should be minimized and quantitatively assessed in terms of functions and values, areas and vegetation type lost, potential effects on wildlife, and streams (bank stability and water quality). Measures to compensate for unavoidable losses of riparian areas should be developed and implemented as part of the project.

Plans for mitigating unavoidable impacts to wetland and riparian areas should include mitigation goals and objectives, methodologies, time frames for implementation, success criteria, and monitoring to determine if the mitigation is successful. The mitigation plan should also include a contingency plan to be implemented should the mitigation not be successful.

Thank you for the opportunity to review the proposed work. Please keep this office informed of any developments or decisions concerning this project. If you have any questions please contact Kathleen Erwin of my staff at the letterhead address or phone (307) 772-2374, extension 28.

Sincerely,

Michael M. Long, Field Supervisor
Wyoming Field Office

Enclosures (3)

cc: Endangered Species Coordinator, State of Wyoming, Cheyenne, WY
Statewide Habitat Protection Coordinator, WGFD, Cheyenne, WY

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

THREATENED AND ENDANGERED SPECIES OF ALBANY COUNTY, WYOMING
Last Updated November 6, 2002

Status Key: E = Endangered, T= Threatened, P = Proposed for Listing, X = Experimental

SPECIES	STATUS	HABITAT
BALD EAGLE (*Haliaeetus leucocephalus*)	T	Found throughout state
BLACK-FOOTED FERRET (*Mustela nigripes*)	E	Prairie dog towns
CANADA LYNX (*Lynx canadensis*)	T	Montane forests
MOUNTAIN PLOVER (*Charadrius montanus*)	P	Grasslands
WYOMING TOAD (*Bufo baxteri*)	E	Wetlands in Laramie River Valley.
PREBLE'S MEADOW JUMPING MOUSE (*Zapus hudsonius preblei*)	T	Riparian habitats east of Laramie Mts. and south of the N. Platte River
UTE LADIES'-TRESSES (*Spiranthes diluvialis*)	T	Seasonally moist soils and wet meadows of drainages below 6500 feet elevation.

If the proposed action will lead to water depletion (consumption) in the Platte River System, impacts to threatened and endangered species inhabiting the downstream reaches of the Platte River in Nebraska should be included in the evaluation (Please read detailed information in the following page).

BALD EAGLE: While habitat loss still remains a threat to the bald eagle's full recovery, most experts agree that its recovery to date is encouraging. Bald eagles are believed to live 30 years or longer in the wild, and even longer in captivity. They mate for life and build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. Nests are often re-used year after year. With additions to the nests made annually, some may reach 10 feet across and weigh as much as 2,000 pounds. Although bald eagles may range over great distances, they usually return to nest within 100 miles of where they were raised.

Bald eagles normally lay two to three eggs once a year and the eggs hatch after about 35 days. The young eagles are flying within 3 months and are on their own about a month later. However, disease, lack of food, bad weather, or human interference can kill many eaglets; sometimes only about half will survive their first year.

In order to reduce adverse effects to the bald eagle, a disturbance-free buffer zone of 1 mile should be maintained around eagle nests and winter roost sites. Activity within 1 mile of an eagle nest or roost may disturb the eagles and result in "take". If a disturbance-free buffer zone of 1 mile is not practicable, then the activity should be conducted outside of Feb 15 - Aug 15 to protect nesting birds and Nov 1 - April 15 to protect roosting birds.

The staple of most bald eagle diets is fish, but they will feed on almost anything they can catch, including ducks, rodents, snakes, and carrion. In winter, northern birds migrate south and gather in large numbers near open water areas where fish or other prey are plentiful.

BLACK-FOOTED FERRET: Black-footed ferrets may be affected if prairie dog colonies are impacted. **If black-tailed prairie dog (*Cynomys ludovicianus*) colonies or complexes greater than 79 acres or white-tailed prairie dog (*C. leucurus*) colonies or complexes greater than 200 acres will be disturbed, surveys for ferrets are recommended in order to determine if the action will result in an adverse affect to the species. Surveys are recommended even if only a portion of the colony or complex will be disturbed.** A white-tailed prairie dog town or complex consists of two or more neighboring prairie dog towns each less than 7 kilometers (4.34 miles) from each other (Black-footed Ferret Survey Guidelines, USFWS, 1989). If a field check indicates that prairie dog towns may be affected, you should contact this office for guidance on ferret surveys.

MOUNTAIN PLOVER: Mountain plover breeding and wintering habitats are known to include grasslands, mixed grassland areas and short-grass prairie, shrub-steppe, plains, alkali flats, agricultural lands, cultivated lands, sod farms, and prairie dog towns. Plovers may nest on sites where vegetation is sparse or absent, or near closely cropped areas, manure piles or rocky areas. Mountain plovers are rarely found near water and show a preference for previously disturbed areas or modified habitat. They may be found on heavily grazed pastures throughout their breeding range and may selectively nest in or near prairie dog towns.

The Service recommends surveys for mountain plovers in all suitable habitat as well as avoidance of nesting areas from April 10 through July 10, to minimize impacts to plovers in sites planned for development. If an active nest site is found in the survey area, the planned activity should be delayed 37 days or 7 days post hatching. If a brood of flightless chicks is observed, activities should be delayed at least 7 days (Mountain Plover Survey Guidelines, USFWS, March 2002). Prohibition of ground disturbance in occupied habitat during the breeding season will ensure protection of nests and flightless broods. While the Service believes that plover surveys, avoidance of nesting and brood rearing areas, and timing restrictions (avoidance of important areas during nesting) will lessen the chance of direct impacts to and mortality of individual mountain plovers in the area, these restrictions do nothing to mitigate indirect effects, including changes in habitat suitability and habitat loss. Surveys are, however, a necessary starting point

PREBLE'S MEADOW JUMPING MOUSE: The Preble's meadow jumping mouse is a small rodent in the family Zapodidae and is 1 of 12 recognized subspecies of the species *Z. hudsonius*, the meadow jumping mouse. The diet of the Preble's meadow jumping mouse consists of seeds, fruits, fungi and insects. Hibernation occurs from October to May in small underground burrows it excavates. Nests are made of grass, leaves or woody material excavated several centimeters below ground level. Preble's are primarily nocturnal or crepuscular, but have been observed during daylight. The Preble's meadow jumping mouse occurs in low undergrowth consisting of grasses, forbs, or a mix of both, in wet meadows and riparian corridors, or where tall shrubs and low trees provide adequate cover. Additionally, Preble's exhibits a preference for lush vegetation along watercourses or herbaceous understories in wooded areas with close proximity to water. In Wyoming, Preble's meadow jumping mouse has been recently documented in four counties, Albany, Laramie, Platte and Converse and may occur in Goshen county. **If the proposed project will result in a disturbance to suitable habitat within the species current or historic range, surveys should be conducted prior to any action.** Due to the difficulty in identifying the Preble's meadow jumping mouse, surveys should be conducted by knowledgeable biologists trained in conducting Preble's surveys.

UTE LADIES'-TRESSES: Ute ladies'-tresses is a perennial, terrestrial orchid with stems 2 to 5 dm tall, narrow leaves, and flowers consisting of few to many small white or ivory flowers clustered into a spike arrangement at the top of the stem. It blooms from late July through August, however, depending on location and climatic conditions, orchids may bloom in early July or still be in flower as late as early October. The Ute ladies'-tresses is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams. It occurs generally in alluvial substrates along riparian edges, gravel bars, old oxbows, and moist to wet meadows at elevations from 4,200 to 7,000 feet. The orchid colonizes early successional riparian habitats such as point bars, sand bars, and low lying gravelly, sandy, or cobbly edges, persisting in those areas where the hydrology provides continual dampness in the root zone through the growing season. Ute ladies'-tresses seems generally intolerant of shade and is found primarily in open grass and forb-dominated sites where vegetation is relatively open and not dense or overgrown. The plants usually occur as small scattered groups. Surveys conducted at other times of the year area not reliable and are therefore not acceptable to the Service for purposes of clearance under section 7 of the ESA. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the orchid to experts who can provide training/services.

PLATTE RIVER WATER DEPLETIONS:

Water depletions to the Platte River system may affect the endangered whooping crane (*Grus americana*), endangered interior least tern (*Sterna antillarum*), threatened piping plover (*Charadrius melodus*), and endangered pallid sturgeon (*Scaphirhynchus albus*), the threatened bald eagle (*Haliaeetus leucocephalus*), the endangered Eskimo curlew (*Numenius borealis*) and threatened western prairie fringed orchid (*Platanthera praeclara*). Depletions include evaporative losses and/or consumptive use, often characterized as diversions from the Platte River or its tributaries less return flows. Project elements that could be associated with depletions to the Platte River system include, but are not limited to, ponds (detention/recreation/irrigation storage/stock watering), lakes (recreation/irrigation storage/municipal storage/power generation), reservoirs (recreation/irrigation storage/municipal storage/power generation), created or enhanced wetlands, pipelines, wells, diversion structures, and water treatment facilities. Any actions that may result in a water depletion to the Platte River system should be identified. The document should also include an estimate of the amount and timing (by month) of average annual water depletion (both existing and new depletions), and describe methods of arriving at such estimates.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

THREATENED AND ENDANGERED SPECIES OF CARBON COUNTY, WYOMING
Last Updated November 6, 2002

Status Key: E = Endangered, T= Threatened, P = Proposed for Listing, X = Experimental

SPECIES	STATUS	HABITAT
BALD EAGLE (*Haliaeetus leucocephalus*)	T	Found throughout state
BLACK-FOOTED FERRET (*Mustela nigripes*)	E	Prairie dog towns
CANADA LYNX (*Lynx canadensis*)	T	Montane forests
MOUNTAIN PLOVER (*Charadrius montanus*)	P	Grasslands
BLOWOUT PENSTEMON (*Penstemon haydenii*)	E	Sand dunes south of Ferris Mtns.
UTE LADIES'-TRESSES (*Spiranthes diluvialis*)	T	Seasonally moist soils and wet meadows of drainages below 6500 feet elevation.
COLORADO RIVER FISH SPECIES (see attached)	E	Downstream riverine habitat of the Yampa, Green and Colorado river systems.
PLATTE RIVER SPECIES	E	Downstream riverine habitat of the Platte River in Nebraska

If the proposed action will lead to water depletion (consumption) in the Colorado River System, impacts to threatened and endangered species inhabiting the downstream reaches of the basin should be included in the evaluation (Please read detailed information in the following page).

If the proposed action will lead to water depletion (consumption) in the Platte River System, impacts to threatened and endangered species inhabiting the downstream reaches of the Platte River in Nebraska should be included in the evaluation (Please read detailed information in the following page).

BALD EAGLE: While habitat loss still remains a threat to the bald eagle's full recovery, most experts agree that its recovery to date is encouraging. Bald eagles are believed to live 30 years or longer in the wild, and even longer in captivity. They mate for life and build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. Nests are often re-used year after year. With additions to the nests made annually, some may reach 10 feet across and weigh as much as 2,000 pounds. Although bald eagles may range over great distances, they usually return to nest within 100 miles of where they were raised.

Bald eagles normally lay two to three eggs once a year and the eggs hatch after about 35 days. The young eagles are flying within 3 months and are on their own about a month later. However, disease, lack of food, bad weather, or human interference can kill many eaglets; sometimes only about half will survive their first year.

In order to reduce adverse effects to the bald eagle, a disturbance-free buffer zone of 1 mile should be maintained around eagle nests and winter roost sites. Activity within 1 mile of an eagle nest or roost may disturb the eagles and result in incidental "take". If a disturbance-free buffer zone of 1 mile is not practicable, then the activity should be conducted outside of Feb 15 - Aug 15 to protect nesting birds and Nov 1 - April 15 to protect roosting birds.

The staple of most bald eagle diets is fish, but they will feed on almost anything they can catch, including ducks, rodents, snakes, and carrion. In winter, northern birds migrate south and gather in large numbers near open water areas where fish or other prey are plentiful.

BLACK-FOOTED FERRETS: Black-footed ferrets may be affected if prairie dog colonies are impacted. **If black-tailed prairie dog (*Cynomys ludovicianus*) colonies or complexes greater than 79 acres or white-tailed prairie dog (*C. leucurus*) colonies or complexes greater than 200 acres will be disturbed, surveys for ferrets are recommended in order to determine if the action will result in an adverse affect to the species. Surveys are recommended even if only a portion of the colony or complex will be disturbed.** A white-tailed prairie dog town or complex consists of two or more neighboring prairie dog towns each less than 7 kilometers (4.34 miles) from each other (Black-footed Ferret Survey Guidelines, USFWS, 1989). If a field check indicates that prairie dog towns may be affected, you should contact this office for guidance on ferret surveys.

MOUNTAIN PLOVER: Mountain plover breeding and wintering habitats are known to include grasslands, mixed grassland areas and short-grass prairie, shrub-steppe, plains, alkali flats, agricultural lands, cultivated lands, sod farms, and prairie dog towns. Plovers may nest on sites where vegetation is sparse or absent, or near closely cropped areas, manure piles or rocky areas. Mountain plovers are rarely found near water and show a preference for previously disturbed areas or modified habitat. They may be found on heavily grazed pastures throughout their breeding range and may selectively nest in or near prairie dog towns.

The Service recommends surveys for mountain plovers in all suitable habitat as well as avoidance of nesting areas from April 10 through July 10, to minimize impacts to plovers in sites planned for development. If an active nest site is found in the survey area, the planned activity should be delayed 37 days or 7 days post hatching. If a brood of flightless chicks is observed, activities should be delayed at least 7 days (Mountain Plover Survey Guidelines, USFWS, March 2002). Prohibition of ground disturbance in occupied habitat during the breeding season will ensure protection of nests and flightless broods. While the Service believes that plover surveys, avoidance of nesting and brood rearing areas, and timing restrictions (avoidance of important areas during nesting) will lessen the chance of direct impacts to and mortality of individual mountain plovers in the area, these restrictions do nothing to mitigate indirect effects, including changes in habitat suitability and habitat loss. Surveys are, however, a necessary starting point.

COLORADO RIVER WATER DEPLETIONS: Where projects may lead to depletions of water to the Colorado river system, formal consultation is required. Federal agency actions resulting in water depletions to the Colorado River system may affect the endangered Bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), and Razorback sucker (*Xyrauchen texanus*) downstream in the Green and Colorado river systems.

In general, depletions include evaporative losses and/or consumptive use of surface or groundwater within the affected basin, often characterized as diversions less return flows. Project elements that could be associated with depletions include, but are not limited to, ponds (detention/recreation/irrigation storage/stock watering), lakes (recreation/irrigation storage/municipal storage/power generation), reservoirs (recreation/irrigation storage/municipal storage/power generation), pipelines, wells, diversion structures, and water treatment facilities. Any actions that may result in a water depletion should be identified. The document should also include an estimate of the amount and timing (by month) of average annual water depletion (both existing and new depletions), and describe methods of arriving at such estimates.

PLATTE RIVER WATER DEPLETIONS: Water depletions to the Platte River system may affect the endangered whooping crane (*Grus americana*), endangered interior least tern (*Sterna antillarum*), threatened piping plover (*Charadrius melodus*), and endangered pallid sturgeon (*Scaphirhynchus albus*), the threatened bald eagle (*Haliaeetus leucocephalus*), the endangered Eskimo curlew (*Numenius borealis*) and threatened western prairie fringed orchid (*Platanthera praeclara*). Depletions include evaporative losses and/or consumptive use, often characterized as diversions from the Platte River or its tributaries less return flows. Project elements that could be associated with depletions to the Platte River system include, but are not limited to, ponds (detention/recreation/irrigation storage/stock watering), lakes (recreation/irrigation storage/municipal storage/power generation), reservoirs (recreation/irrigation storage/municipal storage/power generation), created or enhanced wetlands, pipelines, wells, diversion structures, and water treatment facilities. Any actions that may result in a water depletion to the Platte River system should be identified. The document should also include an estimate of the amount and timing (by month) of average annual water depletion (both existing and new depletions), and describe methods of arriving at such estimates.

UTE LADIES'-TRESSES: Ute ladies'-tresses is a perennial, terrestrial orchid with stems 2 to 5 dm tall, narrow leaves, and flowers consisting of few to many small white or ivory flowers clustered into a spike arrangement at the top of the stem. It blooms from late July through August, however, depending on location and climatic conditions, orchids may bloom in early July or still be in flower as late as early October. The Ute ladies'-tresses is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams. It occurs generally in alluvial substrates along riparian edges, gravel bars, old oxbows, and moist to wet meadows at elevations from 4,200 to 7,000 feet. The orchid colonizes early successional riparian habitats such as point bars, sand bars, and low lying gravelly, sandy, or cobbly edges, persisting in those areas where the hydrology provides continual dampness in the root zone through the growing season. Ute ladies'-tresses seems generally intolerant of shade and is found primarily in open grass and forb-dominated sites where vegetation is relatively open and not dense or overgrown. The plants usually occur as small scattered groups. Surveys conducted at other times of the year area not reliable and are therefore not acceptable to the Service for purposes of clearance under section 7 of the ESA. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the orchid to experts who can provide training/services.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

THREATENED AND ENDANGERED SPECIES OF LARAMIE COUNTY, WYOMING
Last Updated November 6, 2002

Status Key: E = Endangered, T= Threatened, P = Proposed for Listing, X = Experimental

SPECIES	STATUS	HABITAT
BALD EAGLE (*Haliaeetus leucocephalus*)	T	Found throughout state
BLACK-FOOTED FERRET (*Mustela nigripes*)	E	Prairie dog towns
MOUNTAIN PLOVER (*Charadrius montanus*)	P	Grasslands
PREBLE'S MEADOW JUMPING MOUSE (*Zapus hudsonius preblei*)	T	Riparian habitats east of Laramie Mts. and south of the N. Platte River
UTE LADIES'-TRESSES (*Spiranthes diluvialis*)	T	Seasonally moist soils and wet meadows of drainages below 6500 feet elevation.
COLORADO BUTTERFLY PLANT (*Gaura neomexicana* ssp. *coloradensis*)	T	Wet meadows in floodplains

If the proposed action will lead to water depletion (consumption) in the Platte River System, impacts to threatened and endangered species inhabiting the downstream reaches of the Platte River in Nebraska should be included in the evaluation (Please read detailed information in the following page).

BALD EAGLE: While habitat loss still remains a threat to the bald eagle's full recovery, most experts agree that its recovery to date is encouraging. Bald eagles are believed to live 30 years or longer in the wild, and even longer in captivity. They mate for life and build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. Nests are often re-used year after year. With additions to the nests made annually, some may reach 10 feet across and weigh as much as 2,000 pounds. Although bald eagles may range over great distances, they usually return to nest within 100 miles of where they were raised.

Bald eagles normally lay two to three eggs once a year and the eggs hatch after about 35 days. The young eagles are flying within 3 months and are on their own about a month later. However, disease, lack of food, bad weather, or human interference can kill many eaglets; sometimes only about half will survive their first year.

In order to reduce adverse effects to the bald eagle, a disturbance-free buffer zone of 1 mile should be maintained around eagle nests and winter roost sites. Activity within 1 mile of an eagle nest or roost may disturb the eagles and result in incidental "take". If a disturbance-free buffer zone of 1 mile is not practicable, then the activity should be conducted outside of Feb 15 - Aug 15 to protect nesting birds and Nov 1 - April 15 to protect roosting birds.

The staple of most bald eagle diets is fish, but they will feed on almost anything they can catch, including ducks, rodents, snakes, and carrion. In winter, northern birds migrate south and gather in large numbers near open water areas where fish or other prey are plentiful.

BLACK-FOOTED FERRETS: Black-footed ferrets may be affected if prairie dog colonies are impacted. **If black-tailed prairie dog (*Cynomys ludovicianus*) colonies or complexes greater than 79 acres or white-tailed prairie dog (*C. leucurus*) colonies or complexes greater than 200 acres will be disturbed, surveys for ferrets are recommended in order to determine if the action will result in an adverse affect to the species. Surveys are recommended even if only a portion of the colony or complex will be disturbed.** A white-tailed prairie dog town or complex consists of two or more neighboring prairie dog towns each less than 7 kilometers (4.34 miles) from each other (Black-footed Ferret Survey Guidelines, USFWS, 1989). If a field check indicates that prairie dog towns may be affected, you should contact this office for guidance on ferret surveys.

MOUNTAIN PLOVER: Mountain plover breeding and wintering habitats are known to include grasslands, mixed grassland areas and short-grass prairie, shrub-steppe, plains, alkali flats, agricultural lands, cultivated lands, sod farms, and prairie dog towns. Plovers may nest on sites where vegetation is sparse or absent, or near closely cropped areas, manure piles or rocky areas. Mountain plovers are rarely found near water and show a preference for previously disturbed areas or modified habitat. They may be found on heavily grazed pastures throughout their breeding range and may selectively nest in or near prairie dog towns.

The Service recommends surveys for mountain plovers in all suitable habitat as well as avoidance of nesting areas from April 10 through July 10, to minimize impacts to plovers in a site planned for development. If an active nest site is found in the survey area, the planned activity should be delayed 37 days or 7 days post hatching. If a brood of flightless chicks is observed, activities should be delayed at least 7 days (Mountain Plover Survey Guidelines, USFWS, March 2002). Prohibition of ground disturbance in occupied habitat during the breeding season will ensure protection of nests and flightless broods. While the Service believes that plover surveys, avoidance of nesting and brood rearing areas, and timing restrictions (avoidance of important areas during nesting) will lessen the chance of direct impacts to and mortality of individual mountain plovers in the area, these restrictions do nothing to mitigate indirect effects, including changes in habitat suitability and habitat loss. Surveys are, however, a necessary starting point.

PREBLE'S MEADOW JUMPING MOUSE: The Preble's meadow jumping mouse is a small rodent in the family Zapodidae and is 1 of 12 recognized subspecies of the species *Z. hudsonius*, the meadow jumping mouse. The diet of the Preble's meadow jumping mouse consists of seeds, fruits, fungi and insects. Hibernation occurs from October to May in small underground burrows it excavates. Nests are made of grass, leaves or woody material excavated several centimeters below ground level. Preble's are primarily nocturnal or crepuscular, but have been observed during daylight. The Preble's meadow jumping mouse occurs in low undergrowth consisting of grasses, forbs, or a mix of both, in wet meadows and riparian corridors, or where tall shrubs and low trees provide adequate cover. Additionally, Preble's exhibits a preference for lush vegetation along watercourses or herbaceous understories in wooded areas with close proximity to water. In Wyoming, Preble's meadow jumping mouse has been recently documented in four counties, Albany, Laramie, Platte and Converse and may occur in Goshen county. **If the proposed project will result in a disturbance to suitable habitat within the species current or historic range, surveys are recommended prior to any action in order to determine if the action will result in an adverse affect to the species.** Due to the difficulty in identifying the Preble's meadow jumping mouse, surveys should be conducted by knowledgeable biologists trained in conducting Preble's surveys.

UTE LADIES'-TRESSES: Ute ladies'-tresses is a perennial, terrestrial orchid with stems 2 to 5 dm tall, narrow leaves, and flowers consisting of few to many small white or ivory flowers clustered into a spike arrangement at the top of the stem. It blooms from late July through August, however, depending on location and climatic conditions, orchids may bloom in early July or still be in flower as late as early October. The Ute ladies'-tresses is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams. It occurs generally in alluvial substrates along riparian edges, gravel bars, old oxbows, and moist to wet meadows at elevations from 4,200 to 7,000 feet. The orchid colonizes early successional riparian habitats such as point bars, sand bars, and low lying gravelly, sandy, or cobbly edges, persisting in those areas where the hydrology provides continual dampness in the root zone through the growing season. Ute ladies'-tresses seems generally intolerant of shade and is found primarily in open grass and forb-dominated sites where vegetation is relatively open and not dense or overgrown. The plants usually occur as small scattered groups. Surveys conducted at other times of the year area not reliable and are therefore not acceptable to the Service for purposes of clearance under section 7 of the ESA. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the orchid to experts who can provide training/services.

NORTH PLATTE RIVER WATER DEPLETIONS: Water depletions to the Platte River system may affect the endangered whooping crane (*Grus americana*), endangered interior least tern (*Sterna antillarum*), threatened piping plover (*Charadrius melodus*), and endangered pallid sturgeon (*Scaphirhynchus albus*), the threatened bald eagle (*Haliaeetus leucocephalus*), the endangered Eskimo curlew (*Numenius borealis*) and threatened western prairie fringed orchid (*Platanthera praeclara*). Depletions include evaporative losses and/or consumptive use, often characterized as diversions from the Platte River or its tributaries less return flows. Project elements that could be associated with depletions to the Platte River system include, but are not limited to, ponds (detention/recreation/irrigation storage/stock watering), lakes (recreation/irrigation storage/municipal storage/power generation), reservoirs (recreation/irrigation storage/municipal storage/power generation), created or enhanced wetlands, pipelines, wells, diversion structures, and water treatment facilities. Any actions that may result in a water depletion to the Platte River system should be identified. The document should also include an estimate of the amount and timing (by month) of average annual water depletion (both existing and new depletions), and describe methods of arriving at such estimates.

COLORADO BUTTERFLY PLANT: The Colorado butterfly plant is proposed for listing as a threatened species. If listed, surveys will be required prior to any action that will adversely affect suitable habitat. Unnecessary delays may be avoided by considering project impacts to this species now. If a field check indicates that suitable habitat for Colorado butterfly plant habitat may be affected, you should contact this office for guidance on surveys. The Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*) is a short-lived, perennial herb endemic to moist soils in mesic or wet meadows of floodplain areas in southeastern Wyoming, northcentral Colorado, and extreme western Nebraska between elevations of 5,000 and 6,400 feet. This early to mid-seral stage species occurs primarily in habitats created and maintained by streams active within their floodplains with vegetation that is relatively open and not overly dense or overgrown. The conversion of areas with native grasses in riparian areas to agriculture, water diversions, channelization, and urban development threaten this plant by changing habitat significantly enough to preclude survival of viable populations.

TRANSACTION REPORT

NOV-15-2002 FRI 12:21 PM

FOR: WESTERN AREA POWER 9704617213

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
NOV-15	12:18 PM	917209627263	2'38"	16	SEND	OK	625	

OCT 03 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Charles P. Davis
Wyoming State Supervisor
U.S. Fish and Wildlife Service
4000 Airport Parkway
Cheyenne, WY 82001-1599

SUBJECT: Request for list of Endangered, Threatened or Sensitive Species or Critical Habitats for the Cheyenne-Miracle Mile Transmission Line Rebuild Project

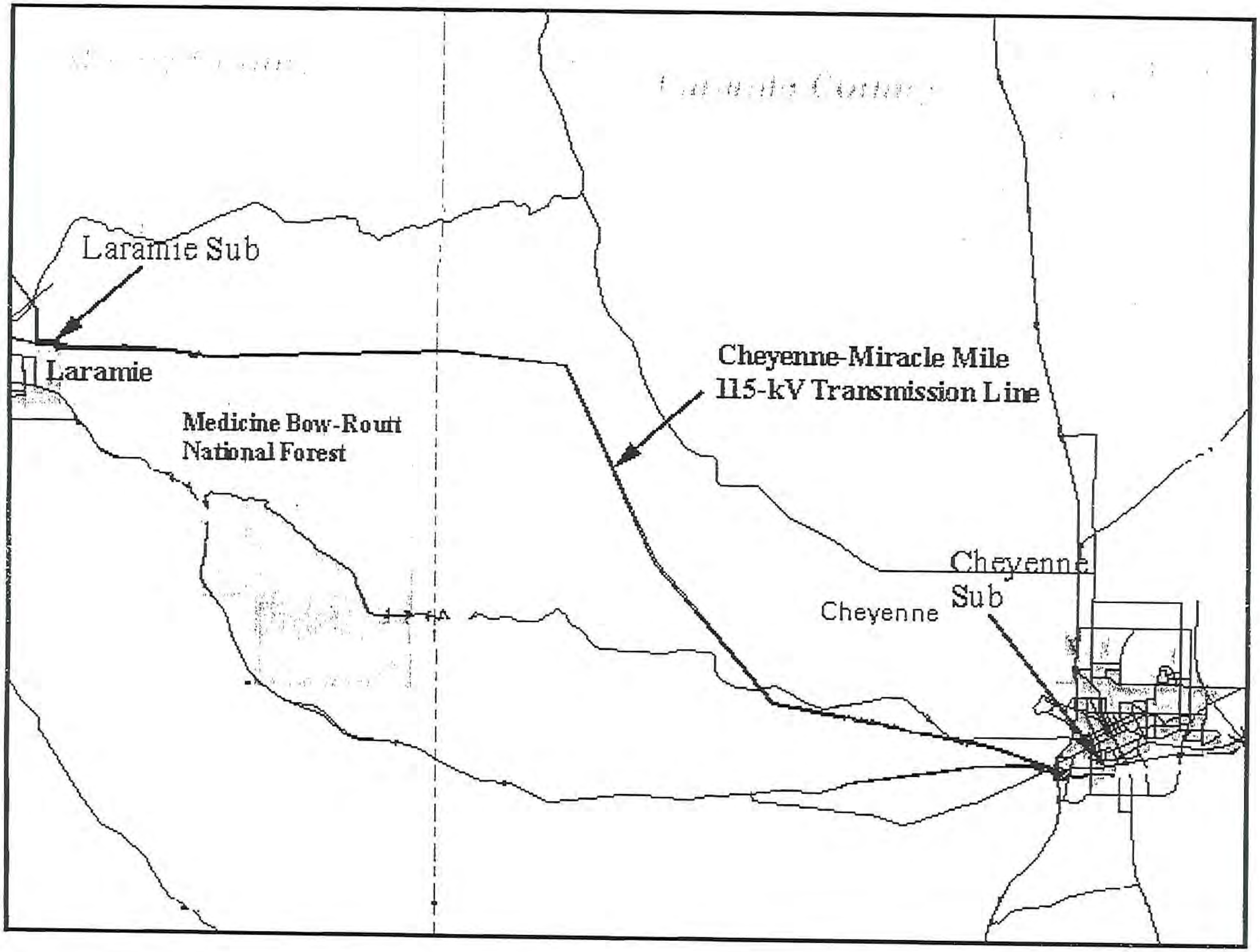
Dear Mr. Davis:

Western Area Power Administration, Rocky Mountain Region (Western) is proposing to rebuild the Cheyenne-Miracle Mile 115-kV transmission line, between Cheyenne, Wyoming and Seminoe, Wyoming (Maps enclosed). The transmission line is located in Laramie, Albany and Carbon counties, Wyoming. Most of this line (139.69 miles) was constructed as part of the Seminoe-Cheyenne transmission line in 1939; the remaining 6.60 miles were constructed by Western and placed into service in February 1992. The Seminoe-Cheyenne segment of the line was constructed with wood pole H-frame structures.

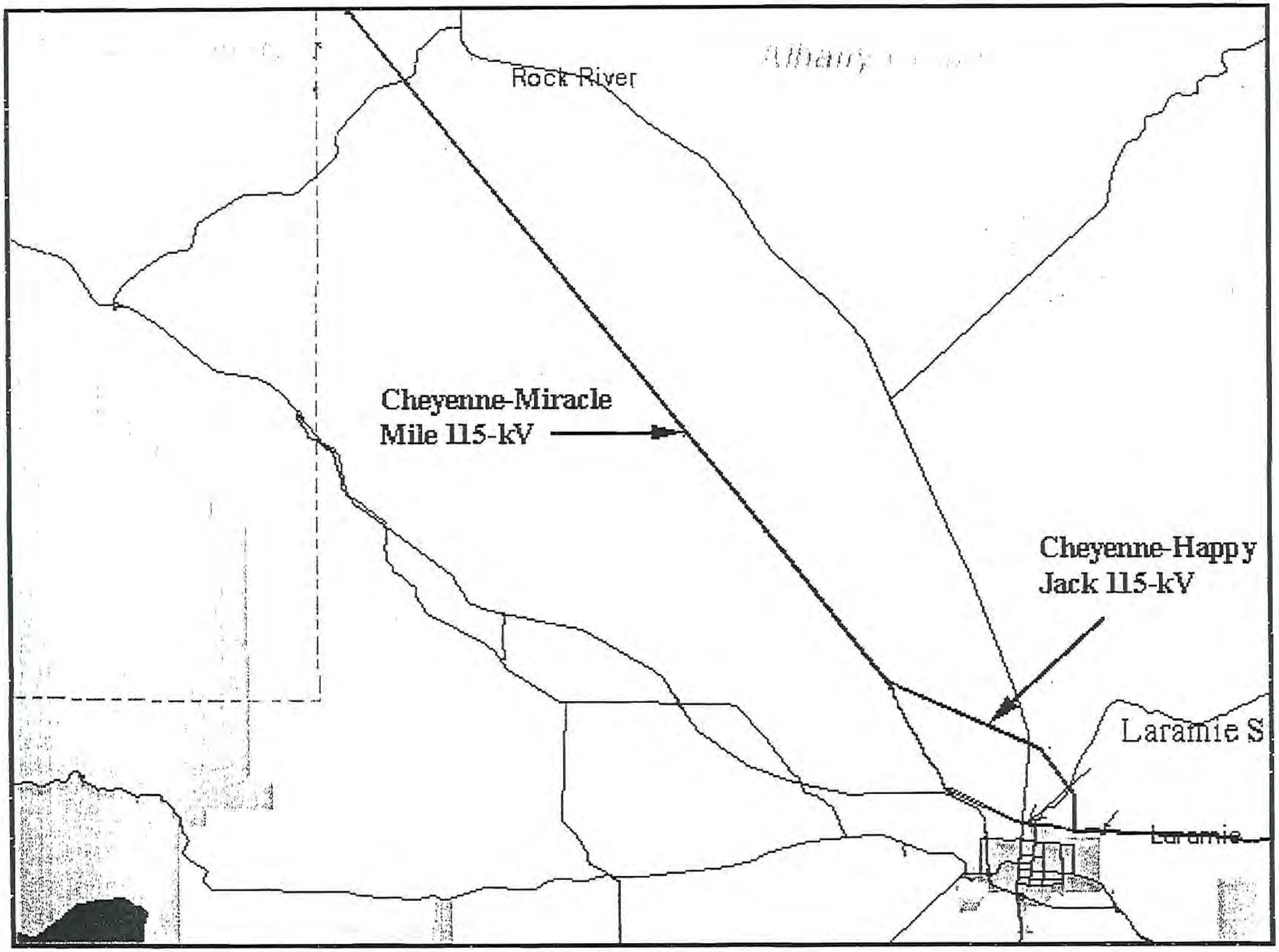
Due to age and weather exposure of this facility, many of the transmission line structures and related hardware have deteriorated. The line is presently 63 years old. Because of its age the potential for structural failures and power outages is increased.

The transmission line would be rebuilt in place between Cheyenne and Seminoe, utilizing the same corridor. The existing transmission line right-of-way (ROW) width is 75 feet. Depending on which design alternative is selected, the maximum transmission line ROW width acquired would be 125 feet. It is anticipated that existing access would be adequate for reconstruction of the transmission line. The transmission line crosses primarily private land, although there are some public lands managed by the Bureau of Land Management and the State of Wyoming.

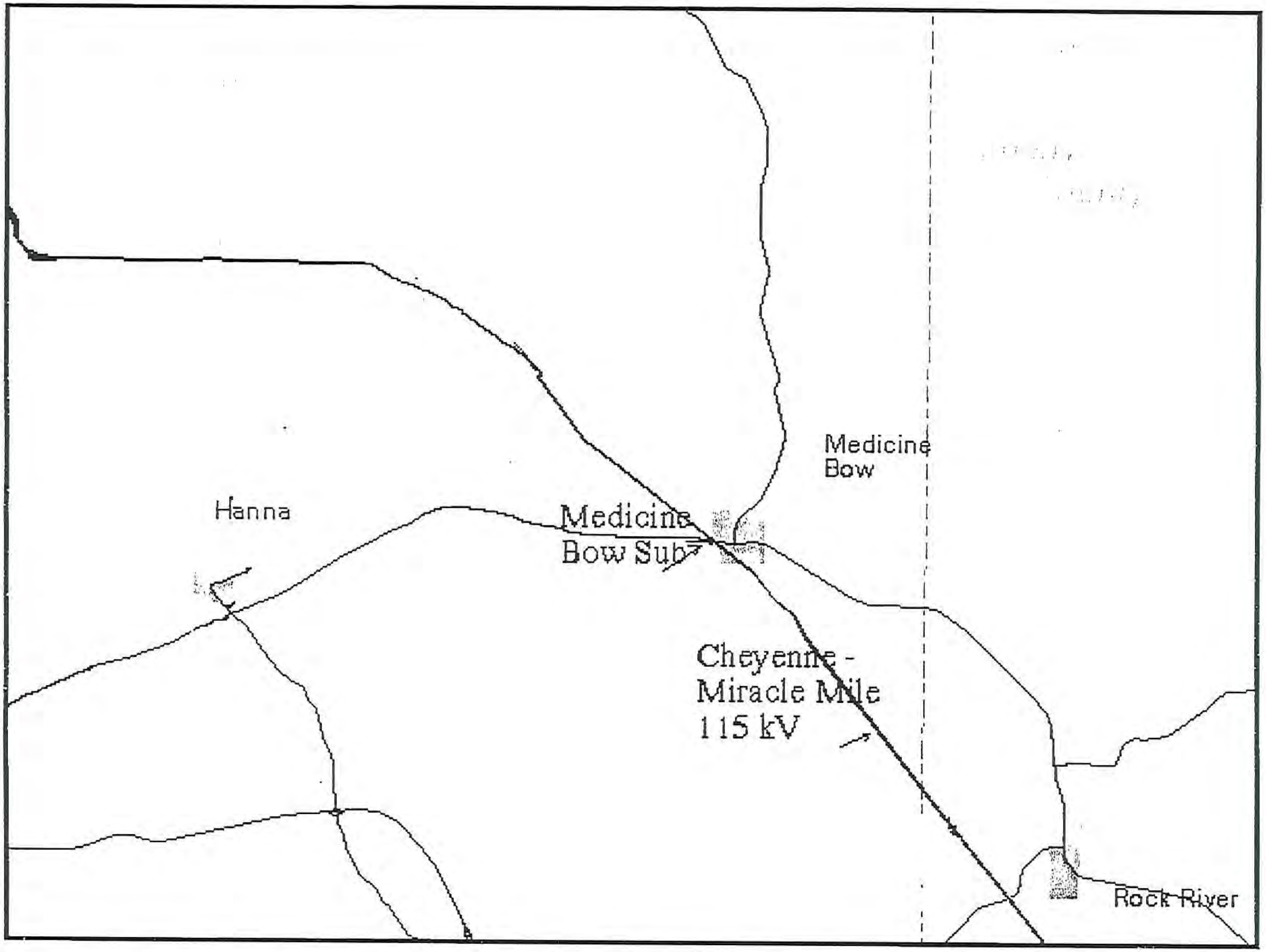
In accordance with the Endangered Species Act of 1973, Public Law 93-203 (87 Statute 884) as amended, Section 7, Western is requesting that your agency furnish us with an updated listing of proposed, candidate, and listed threatened and endangered species that may occur in the area of the proposed action. The information received will be utilized in Western's environmental evaluation to be conducted for the project.



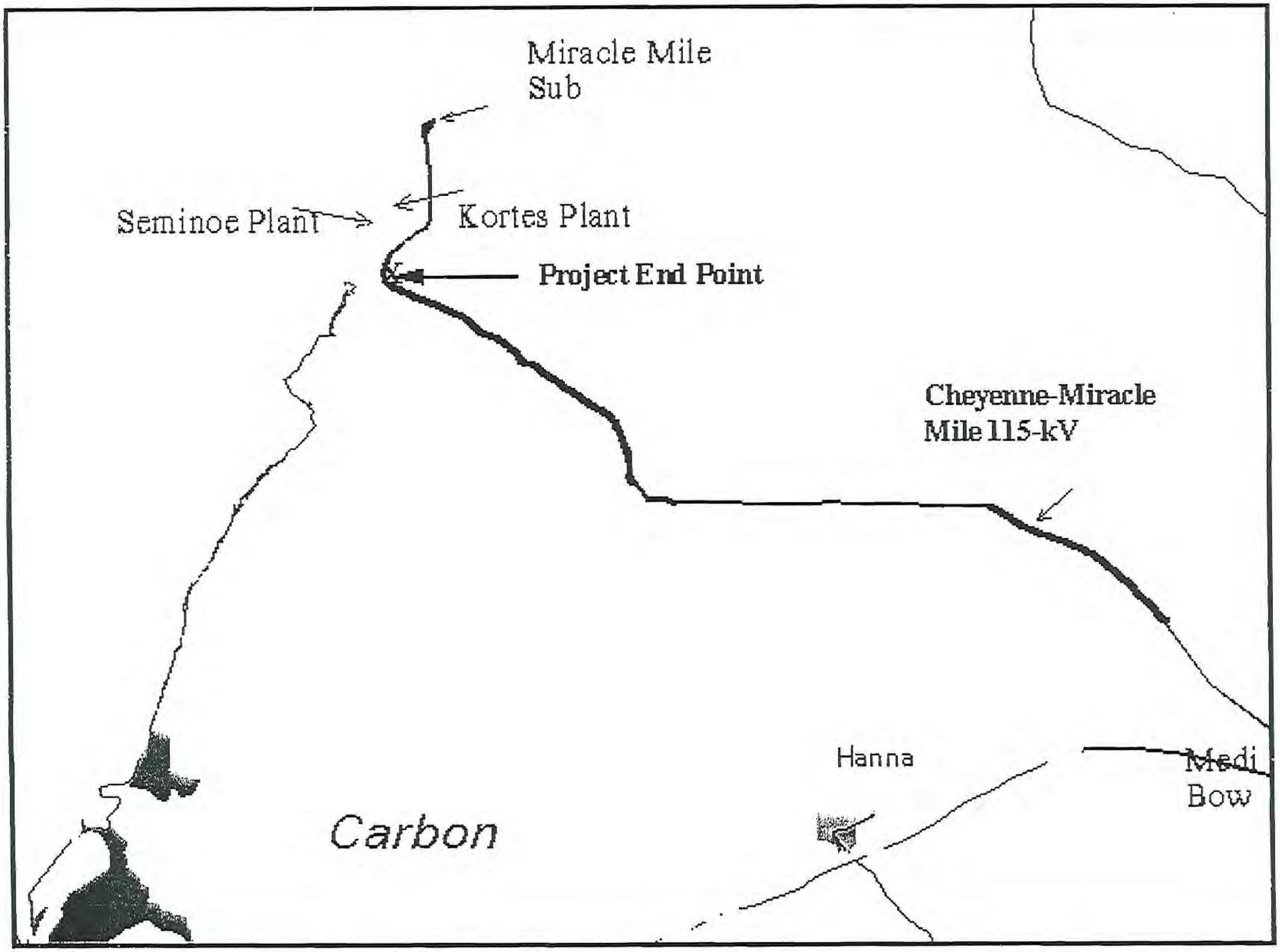
Map 1. Location of the Cheyenne-Miracle Mile 115-kV Transmission Line between Cheyenne and Laramie, Wyoming.



Map 2. Location of the Cheyenne-Miracle Mile 115-kV Transmission Line between Laramie and Rock River, Wyoming.



Map 3. Location of the Cheyenne-Miracle Mile 115-kV Transmission Line between Rock River and Medicine Bow, Wyoming.



Map 4. Location of the Cheyenne-Miracle Mile 115-kV Transmission Line between Medicine Bow and the project end point at Seminoe, Wyoming.

Appendix H. Notice of Proposed Floodplain and Wetland Action and Request for Comments

From: RODNEY JONES <RJONES@wapa.gov>
To: vpwest@montrose.net <vpwest@montrose.net>; kcoppinger@trcsolutions.com <kcoppinger@trcsolutions.com>
Cc: JIM HARTMAN <HARTMAN@wapa.gov>; VIOLA MICHAELIS <MICHV@wapa.gov>
Date: Wednesday, April 30, 2003 6:37 AM
Subject: FR Floodplain Notice

The Notice of Floodplain/wetlands involvement for the Cheyenne-Miracle Mile 115-kilovolt Transmission Line Rebuild Project was published in the Federal Register on April 28, 2003. (attached)

Rodney D. Jones
Environmental Specialist
email: rjones@wapa.gov
phone: 970.461.7371
cell phone: 970.227.0677
FAX: 970.461.7213

Omitted
G–22.
Omitted
G–23.
Omitted
G–24.
Docket# RP02–562, 002, Mississippi River Transmission Corporation
G–25.
Omitted
G–26.
Docket# RP00–410, 004, CenterPoint Energy-Mississippi River Transmission Corporation
Other#s RP00–410, 005, CenterPoint Energy-Mississippi River Transmission Corporation
RP01–8, 004, CenterPoint Energy-Mississippi River Transmission Corporation
RP01–8, 005, CenterPoint Energy-Mississippi River Transmission Corporation
G–27.
Docket# RP03–70, 001, PG&E Gas Transmission, Northwest Corporation
Other#s RP03–70, 000, PG&E Gas Transmission, Northwest Corporation
G–28.
Omitted
G–29.
Omitted
G–30.
Docket# RP99–324, 004, Gulf South Pipeline Company, LP.
Other#s RP99–324, 005, Gulf South Pipeline Company, LP.
G–31.
Omitted
G–32.
Omitted
G–33.
Omitted
G–34.
Omitted
G–35.
Omitted
G–36.
Omitted
G–37.
Docket# RP03–64, 000, Gulf South Pipeline Company, LP
G–38.
Omitted
G–39.
Docket# RP00–535, 005, Texas Eastern Transmission, LP
G–40.
Docket# RP00–533, 005, Algonquin Gas Transmission Company
G–41.
Omitted
G–42.
Docket# RP03–329, 000, ANR Pipeline Company
G–43.
Docket# RP03–299, 001, Dominion Cove Point LNG, LP
G–44.
Docket# CP02–142, 002, Columbia Gas Transmission Company
Other#s CP01–260, 002, Columbia Gas Transmission Company

Energy Projects—Hydro

H–1.
Omitted
H–2.
Omitted
H–3.
Docket# P–2738, 053, New York State Electric & Gas Corporation
H–4.
Docket# P–4632, 029, Clifton Power Corporation

Energy Projects—Certificates

C–1.
Docket# CP01–409, 000, Tractebel Calypso Pipeline, LLC
Other#s CP01–409, 001, Tractebel Calypso Pipeline, LLC
CP01–409, 002, Tractebel Calypso Pipeline, LLC
CP01–410, 000, Tractebel Calypso Pipeline, LLC
CP01–410, 001, Tractebel Calypso Pipeline, LLC
CP01–410, 002, Tractebel Calypso Pipeline, LLC
CP01–411, 000, Tractebel Calypso Pipeline, LLC
CP01–411, 001, Tractebel Calypso Pipeline, LLC
CP01–411, 002, Tractebel Calypso Pipeline, LLC
CP01–444, 000, Tractebel Calypso Pipeline, LLC
CP01–444, 001, Tractebel Calypso Pipeline, LLC
CP01–444, 002, Tractebel Calypso Pipeline, LLC
C–2.
Docket# CP02–141, 001, Transcontinental Gas Pipe Line Corporation
C–3.
Docket# CP02–4, 002, Northwest Pipeline Corporation
C–4.
Docket# CP01–438, 001, Northwest Pipeline Corporation
C–5.
Docket# CP03–18, 000, City of Duluth Public Works & Utilities Department
C–6.
Omitted
C–7.
Docket# CP98–131, 005, Vector Pipeline L.P.

C–8.

Docket# CP01–416, 001, Sierra Production Company

Magalie R. Salas,

Secretary.

[FR Doc. 03–10585 Filed 4–24–03; 3:59 pm]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Notice of Meeting, Notice of Vote, Explanation of Action Closing Meeting and List of Persons To Attend

April 23, 2003.

The following notice of meeting is published pursuant to section 3(a) of the Government in the Sunshine Act (Pub. L. 94–409), 5 U.S.C. 552b:

Agency Holding Meeting: Federal Energy Regulatory Commission.

Date and Time: April 30, 2003 (Within a relatively short time before or after the regular Commission Meeting).

Place: Hearing Room 6, 888 First Street, NE., Washington, DC 20426.

Status: Closed.

Matters to be considered: Non-public, Investigations and Inquiries, and Enforcement Related Matters.

FOR FURTHER INFORMATION CONTACT: Magalie R. Salas, Secretary, Telephone (202) 502–8400.

Chairman Wood and Commissioners Massey and Brownell voted to hold a closed meeting on April 30, 2003. The certification of the General Counsel explaining the action closing the meeting is available for public inspection in the Commission's Public Reference Room at 888 First Street, NE., Washington, DC 20426.

The Chairman and the Commissioners, their assistants, the Commission's Secretary and her assistant, the General Counsel and members of her staff, and a stenographer are expected to attend the meeting. Other staff members from the Commission's program offices who will advise the Commissioners in the matters discussed will also be present.

Magalie R. Salas,

Secretary.

[FR Doc. 03–10586 Filed 4–24–03; 3:59 pm]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Western Area Power Administration

Cheyenne-Miracle Mile 115-Kilovolt Transmission Line Rebuild Project, Laramie, Albany, and Carbon Counties, WY

AGENCY: Western Area Power Administration, DOE.

ACTION: Notice of floodplain/wetland involvement.

SUMMARY: The Western Area Power Administration (Western), a power marketing agency of the U.S. Department of Energy (DOE), is the lead Federal agency for a proposal to rebuild 140 miles of the Cheyenne-Miracle Mile 115-kilovolt (kV) transmission line located in Laramie, Albany, and Carbon counties, Wyoming. Western plans to rebuild the segment of line between Cheyenne and Seminoe, Wyoming. A number of floodplains associated with small drainages are crossed by the existing transmission line. Some of

these floodplains have transmission line structures located within a 100-year floodplain. Western will incorporate an assessment of floodplains/wetlands in the Environmental Assessment being prepared for the project, and would perform the proposed actions in a manner so as to avoid or minimize potential harm to or within the affected floodplains/wetlands.

DATES: Comments on the proposed floodplain/wetland action are due to the address below no later than May 13, 2003.

ADDRESSES: Comments should be addressed to Mr. Jim Hartman, Environmental Manager, Rocky Mountain Region, Western Area Power Administration, P.O. Box 3700, Loveland, CO 80539–3003, fax (970) 461–7213, e-mail *hartman@wapa.gov.*

FOR FURTHER INFORMATION CONTACT: Mr. Rodney Jones, Environmental Specialist, Rocky Mountain Region, Western Area Power Administration, P.O. Box 3700, Loveland, CO 80539–3003, telephone (970) 461–7371, e-mail *rjones@wapa.gov.*

SUPPLEMENTARY INFORMATION: The proposal to rebuild the Cheyenne-Miracle Mile 115-kV transmission line between Cheyenne and Seminoe, Wyoming, would involve construction activities within floodplains and wetlands. Most of this line (139.69 miles) was constructed as part of the Seminoe-Cheyenne transmission line in 1939; the remaining 6.60 miles were reconstructed by Western and placed into service in February 1992. The Seminoe-Cheyenne segment of the line was constructed with wood pole H-frame structures.

Due to age and weather exposure of this facility, many of the transmission line structures and related hardware have deteriorated. The line is presently 64 years old. Because of its age the potential for structural failures and power outages has increased.

The existing transmission line right-of-way (ROW) width is 75 feet. Depending on which design alternative is selected, the maximum transmission line ROW width acquired would be 125 feet. The transmission line crosses primarily private land, although there are some public lands managed by the Bureau of Land Management and the State of Wyoming. Based on a review of Federal Emergency Management Agency floodplain hazard maps, Western has determined that a number of 100-year floodplains associated with small drainages are crossed by the existing transmission line. Some structures fall within the boundaries of these floodplains, and would be replaced under the proposed action.

As the lead Federal agency, Western will prepare an Environmental Assessment for the proposed project, in compliance with the National Environmental Policy Act (NEPA), and regulations promulgated by the Council on Environmental Quality for implementing the procedural provisions of NEPA (40 CFR part 1500–1508) and the DOE NEPA Implementing Procedures (10 CFR part 1021). The Environmental Assessment will examine the proposed construction activities in floodplains/wetlands, in accordance with DOE's Floodplain/Wetland Review Requirements (10 CFR part 1022).

It is Western's goal to rebuild the Cheyenne-Miracle Mile transmission line in a manner that minimizes impacts to the natural, human, and cultural environments while improving our ability to maintain and operate the transmission line in a safe and environmentally sound manner. To the extent possible, the proposed rebuild would use the existing transmission line corridor and established trails and roads for access.

Maps and further information are available from Western from the contact above.

Dated: April 11, 2003.

Michael S. Hacskaylo,

Administrator.

[FR Doc. 03–10375 Filed 4–25–03; 8:45 am]

BILLING CODE 6450–01–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–7488–9]

Science Advisory Board; Request for Comments on the Use of the Environmental Engineering Committee for a Consultation and Notification of Two Environmental Engineering Committee Meetings

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA, SAB is announcing that the Environmental Engineering Committee, a standing committee of the SAB, will provide a consultation on improving leach testing of waste at a conference call May 16 and a face-to-face meeting June 17–19, 2003. The Staff Office solicits comments from the public about the appropriateness of the use of the EEC for this consultation.

DATES: Comments on the use of the EEC for this consultation should be submitted no later than May 19, 2003. The conference call meeting will be held Friday May 16, 2003 from 12:30–2:30 p.m. Eastern Time. The face-to-face meeting will be held June 17–18, 2003. The meeting will begin each day at 9 a.m., adjourn no later than 6 p.m. on Tuesday June 17 and no later than 4 p.m. on Wednesday June 18.

ADDRESSES: Any member of the public wishing to provide comment on the proposed use of the EEC for this consultation should contact the individual named below. The roster for the EEC and biosketches for its members can be viewed on the SAB Web site *http://www.epa.gov/sab/eecconsultationonleaching.html.* Participation in the May 16, 2003 conference call meeting will be by teleconference only. The June 17–18, 2003 face-to-face meeting will be held in the metropolitan Washington DC area; the specific location will be announced in a subsequent **Federal Register** notice.

FOR FURTHER INFORMATION CONTACT: Any member of the public wishing further information regarding the conference call, face-to-face meeting, or the use of the EEC for this consultation may contact Ms. Kathleen White, Designated Federal Officer (DFO), U.S. EPA Science Advisory Board (1400A), 1200 Pennsylvania Avenue NW, Washington DC 20460–0001 (for overnight delivery, please specify room 6450 Z and use zip code 20004). Ms. White can also be reached by telephone/voice mail at (202) 564–4559, by fax at (202) 501–0582; or via e-mail at *white.kathleen@epa.gov.*

SUPPLEMENTARY INFORMATION:

Summary: The EPA SAB is announcing that the Environmental Engineering Committee, a standing committee of the SAB, will provide a consultation on improving leach testing of waste at a face-to-face meeting June 17–19, 2003. Planning for the face-to-face meeting will take place at a conference call meeting to be held May 16. The public is offered the opportunity to comment on the appropriateness of the use of the EEC for this consultation.

Background—The Resource Conservation and Recovery Act (RCRA) defines hazardous wastes as solid wastes that may pose a substantial present or potential hazard to human health and the environment when improperly managed. When EPA promulgated characteristics that classify wastes as hazardous by virtue of their inherent properties (45 FR 33084, May 19, 1980), it established two criteria for identifying hazardous waste characteristics: "(1) The characteristic

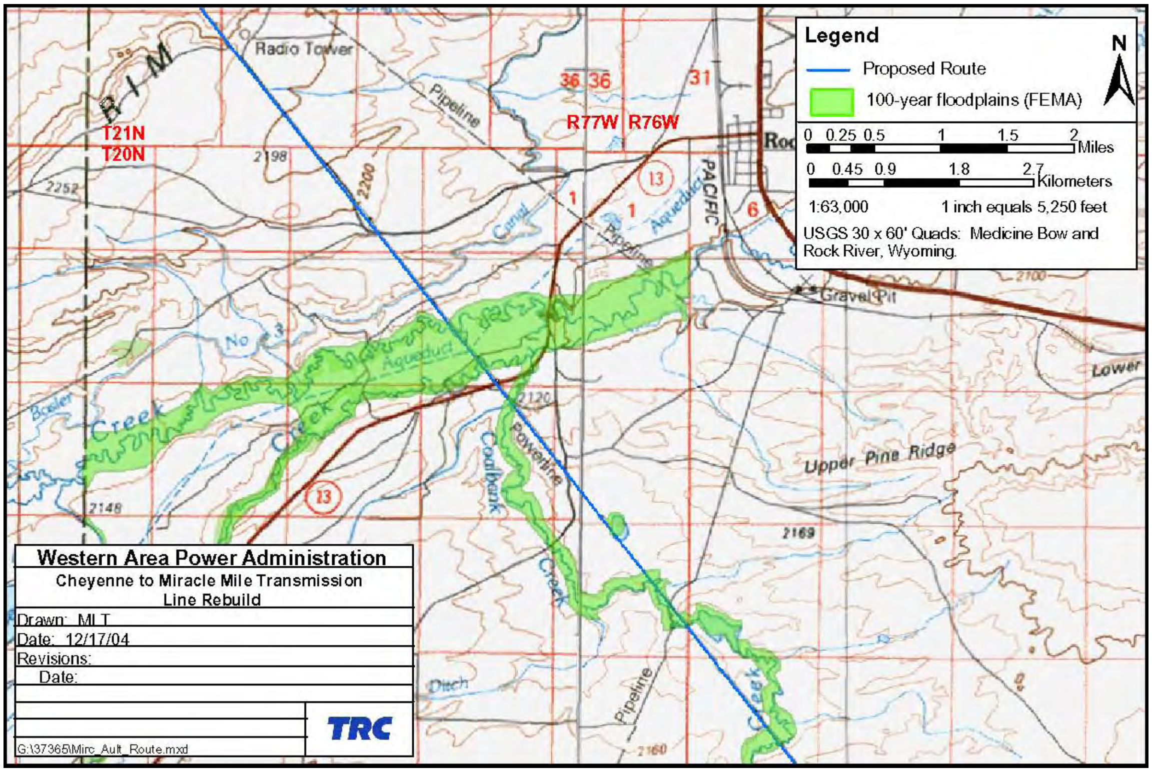


Figure 3.5-1 The Floodplains at Rock Creek/Three Mile Creek/Coal Bank Creek

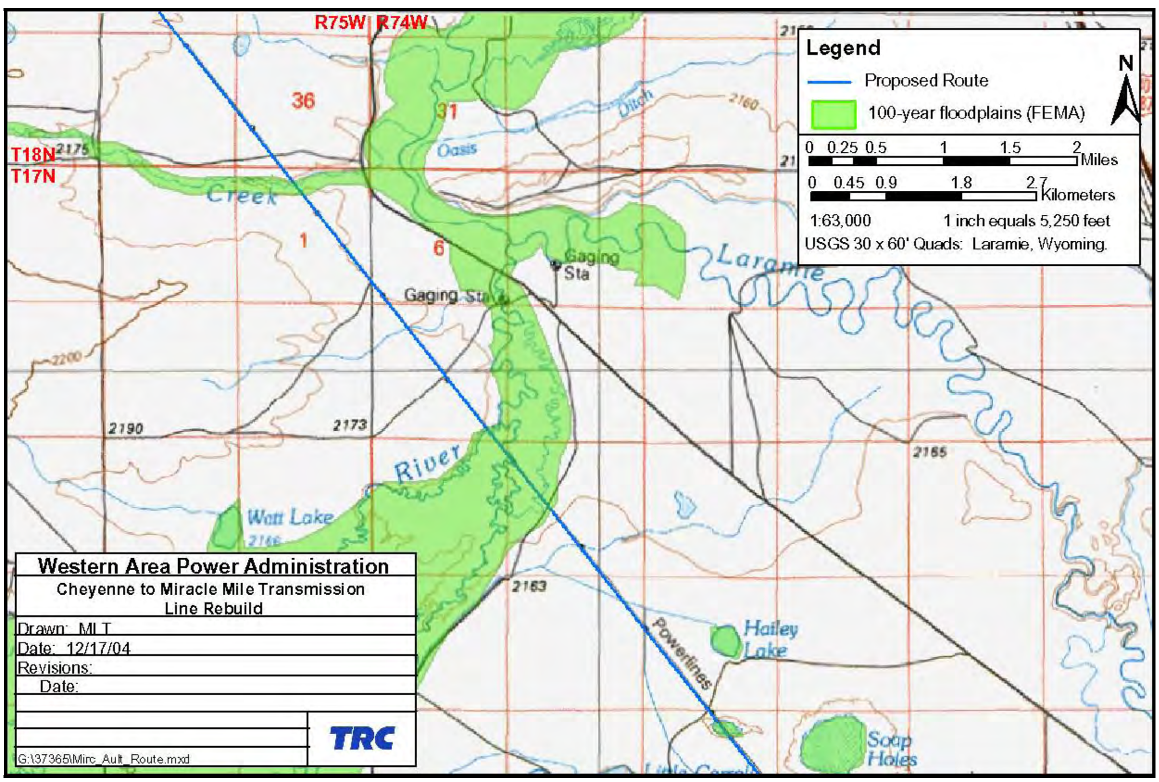


Figure 3.5-2 The Floodplains at Little Laramie River

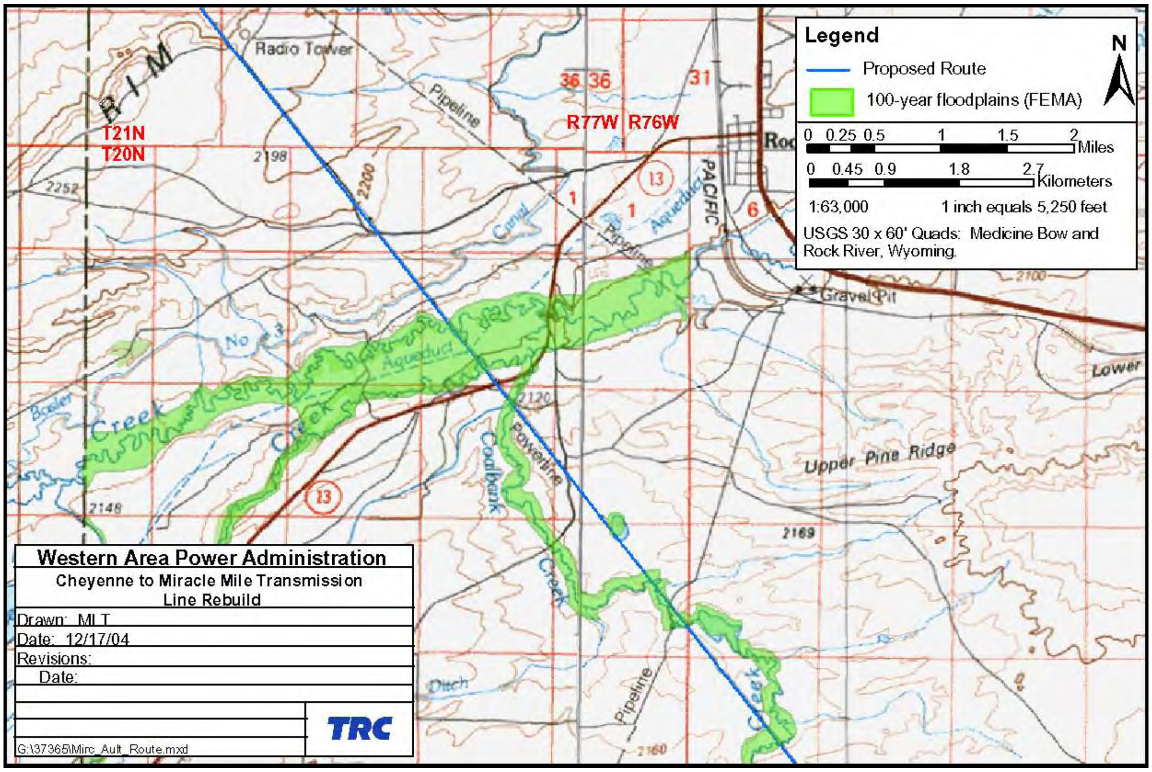


Figure 3.5-1 The Floodplains at Rock Creek/Three Mile Creek/Coal Bank Creek

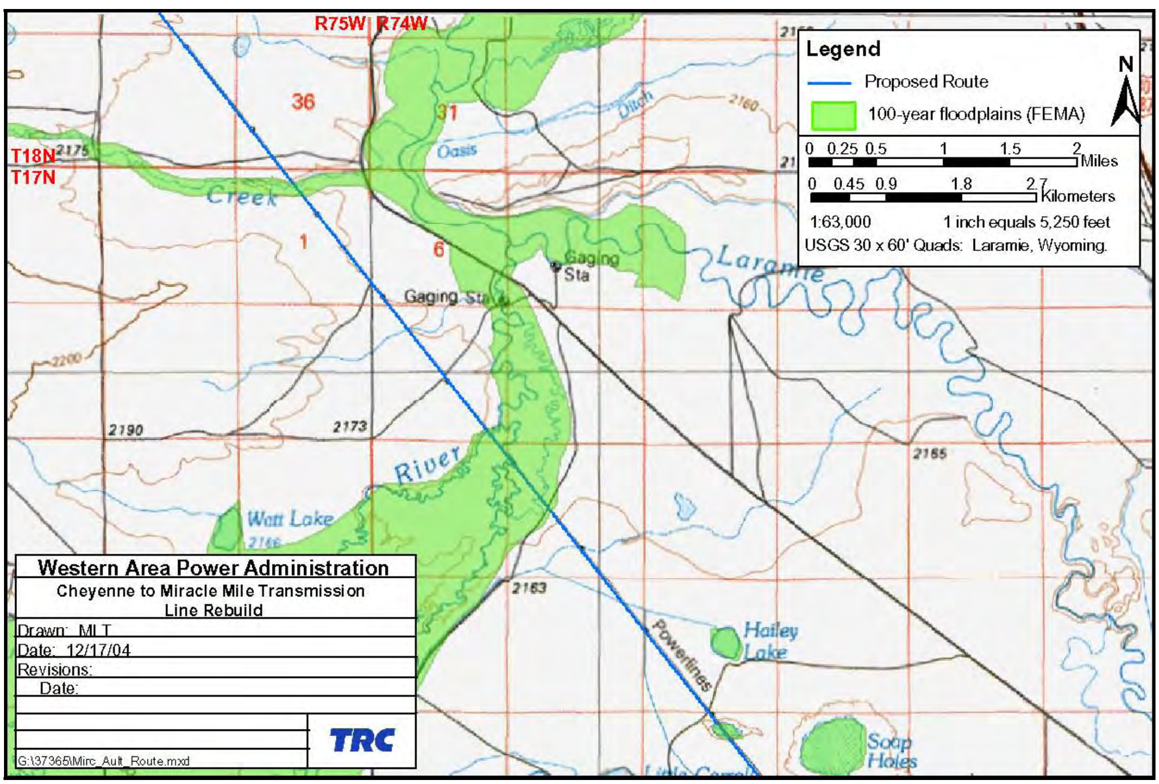


Figure 3.5-2 The Floodplains at Little Laramie River

Existing Setting

Simulation of Proposed Project

Figure 3.13-1 View from Residential Area, North Tenth and Grafton, Laramie, View Looking Northeast

Existing Setting

Simulation of Proposed Project

Figure 3.13-2 View from Goins Elementary School, Cheyenne, View Looking South

Existing Setting

Simulation of Proposed Project

Figure 3.13-3 View from Residential Area, Bison Crossing Subdivision, View Looking North